
2020 YEAR-END REPORT



DENVER WATER'S GROSS RESERVOIR EXPANSION PROJECT

This report provides a snapshot of recent activities and accomplishments as well as a look ahead for planned activities in 2021.

EXECUTIVE SUMMARY

“With everything that occurred across the world in 2020, I’m proud of the milestones the Gross Reservoir Expansion Project team reached. Through collaboration and coordination, we continue to move this important project forward.”

- Jeff Martin,
Gross Reservoir Expansion,
program manager

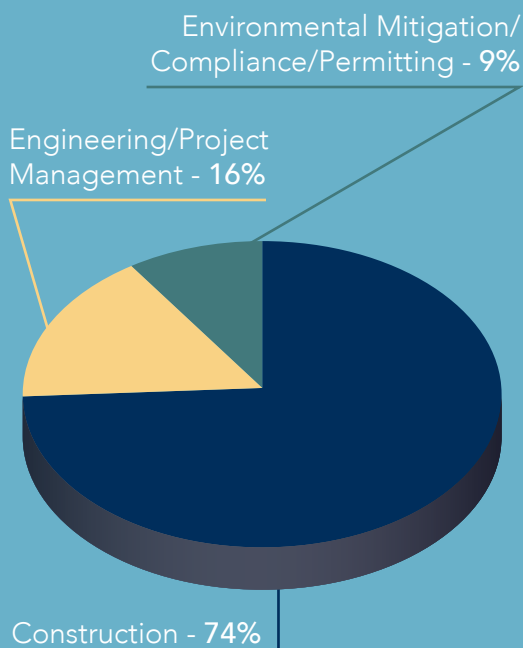
2020 IN REVIEW

The Gross Reservoir Expansion Project Team worked hard in 2020 to:

- Submit a complete and timely Boulder County 1041 Permit Application.
- Adapt outreach and project interactions due to the COVID-19 pandemic.
- Continue to progress dam design.
- Complete operational improvements.
- Foster relationships with local stakeholders.

Details of this work are included in this report and we look forward to continuing this work in 2021.

PROJECT FORECAST PERCENTAGES



ANTICIPATED PROJECT SCHEDULE

With a project of this size, there are many activities to plan, from design and on-site preparation to foundation prep and concrete placement. We aim to shorten the project timeline as much as possible to limit local community impacts and are currently planning to complete construction in 2027.

PROJECT COST

The GRE Project is fully funded through Denver Water’s rates, new tap fees and the sale of hydropower. No tax dollars are directed to Denver Water or the GRE Project. The chart to the left represents the forecasted costs with more than \$24 million spent on environmental permitting and compliance projects since 2003.

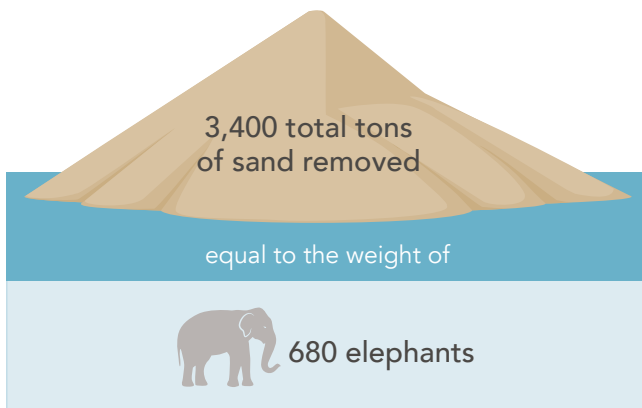
PERMITTING AND ENVIRONMENTAL COMPLIANCE



Denver Water reconfigured the pond for traction sand collection and removal. Photo credit: Google Earth.

FRASER RIVER SEDIMENT POND

A Learning By Doing cooperative project with the Colorado Department of Transportation and Denver Water involved construction of a sediment pond on the Fraser River below Berthoud Pass. The pond captures traction sand used on the highway that can impair the aquatic habitat. In 2020, 180 tons of traction sand were removed from the Fraser River's sediment pond. Over the past eight years, a total of 3,400 tons of sand has been removed from the location.



GREEN-LINEAGE CUTTHROAT TROUT

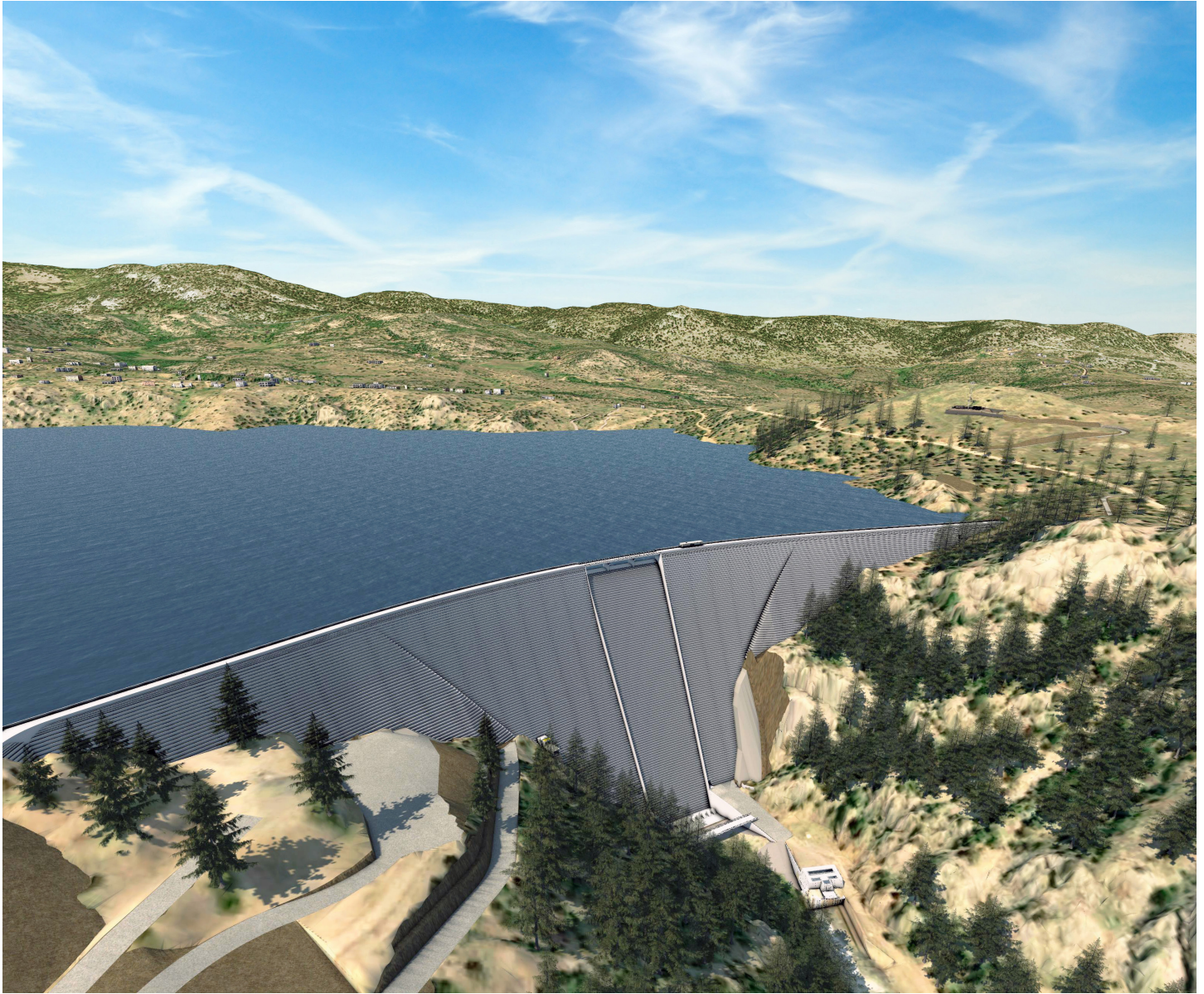
In 2020, the US Fish and Wildlife Service (USFWS) confirmed that the green-lineage cutthroat trout populations above Denver Water's diversion structures in the Williams Fork and Frasier river basins are not listed as threatened or endangered under the Endangered Species Act. Although this action negated the USFWS' 2016 Biological Opinion assessing the GRE Project's effects on those green-lineage cutthroat trout populations, Denver Water remains committed to implementing many of the protections and enhancements listed in the Biological Opinion because they also appear in Denver Water's 2016 Settlement Agreement with the US Forest Service (USFS).

These protections include modifications of Denver Water's diversion structure and diversion operation commitments on four streams in Denver Water's collection system that currently have green-lineage cutthroat trout, an obligation to partner with Colorado Parks and Wildlife (CPW) to eradicate non-native fish and reintroduce green-lineage cutthroat trout in three streams, and a commitment to work in a cooperative manner with other agencies (FWS, USFS, and CPW) to establish a green-lineage cutthroat trout fishery in the St. Louis Creek Basin.

Denver Water stands behind its commitments outlined in its environmental mitigation and enhancement program for the Gross Reservoir Expansion Project. These commitments include, for example, enacting restoration projects and collaborating with partners on environmental enhancement efforts required in permits and in agreements with its GRE project stakeholders and partners.

For more information about how the project will have a net environmental benefit on state water quality, visit grossreservoir.org.

ENGINEERING AND DAM SAFETY



Current rendering of enlarged Gross Dam. Photo credit: Denver Water.

DAM DESIGN

In 2020, Denver Water's designer engineer, Stantec/AECOM, advanced final dam design past the 60% milestone. We were also able to incorporate the Construction Manager/General Contractor (CM/GC) team, KBJV, into the design process for many aspects of construction design.

OUTLET WORKS MODIFICATION

Though separate from the GRE Project, Denver Water began the Outlet Works Modification Project in 2020 to ensure the system's safe operation well into the future. The project included penstock changes to improve efficiency as well as equipment replacement to enhance operations. This project will continue into spring 2021.



The original outlet works that was removed and replaced.
Photo credit: Denver Water.

TRASHRACK UPGRADES

Another operational upgrade at Gross Reservoir identified by Denver Water was to upgrade the original trashrack structure. Regulatory requirements from the Federal Energy Regulatory Commission (FERC) and the Colorado State Engineer's Office – Dam Safety Branch necessitate a seismic retrofit of the trashrack structure. Design for the retrofit was completed in 2020 and submitted to FERC and the SEO for final regulatory review. Construction will be completed in the fourth quarter 2021.



Progress of the Outlet Works Modification Project.
Photo credit: Denver Water.

SAFETY

Denver Water continues its strong safety culture by performing "safety shares" before meetings and tours. These moments help share potential risks and tips to ensure safe work practices, both in the office and on-site.

Denver Water staff also routinely perform job safety analyses before starting any physical task to assess the potential hazards associated with a task as well as determine appropriate mitigation.

Our focus on safety has resulted in over 300,000 hours of incident free work since 2017.



HOURS WORKED



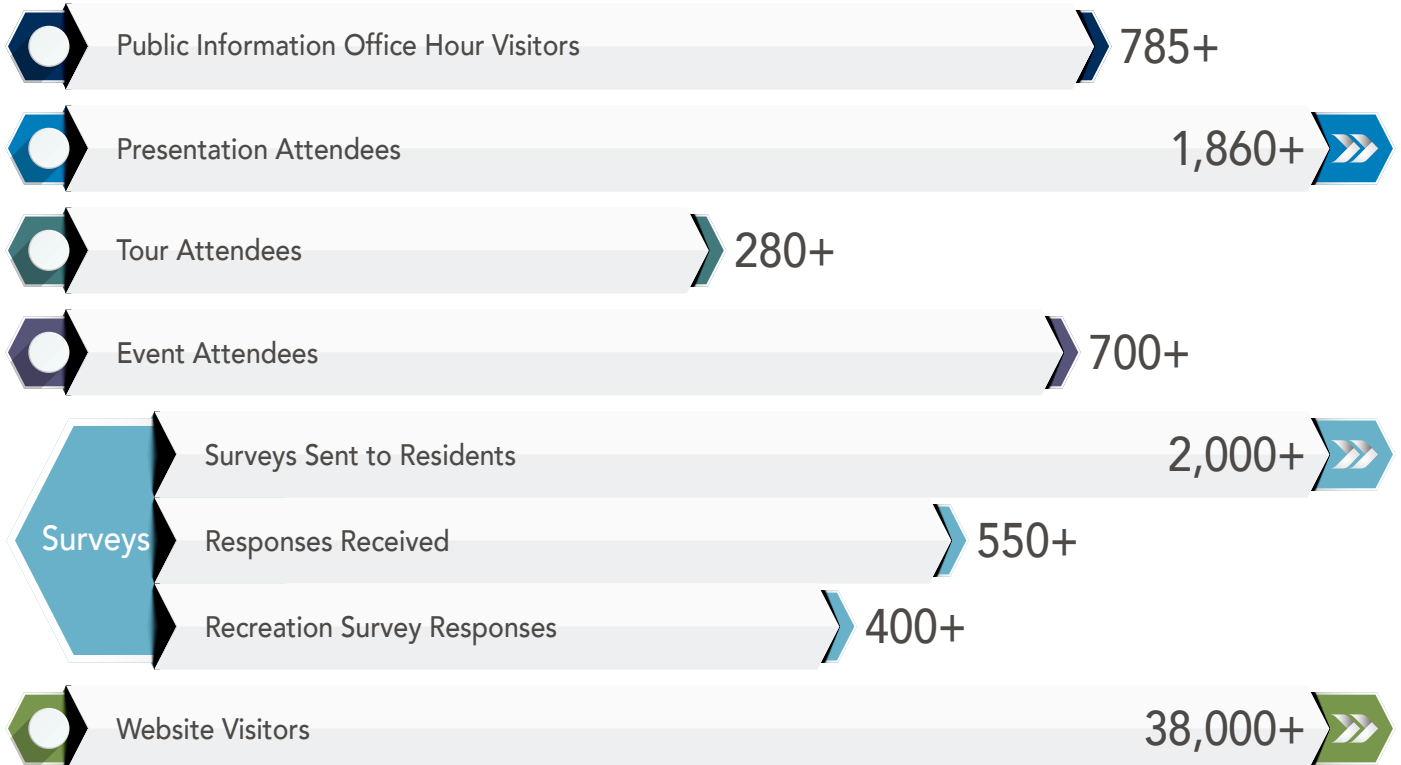
NO
INCIDENTS

STAKEHOLDER OUTREACH

2017 - 2020

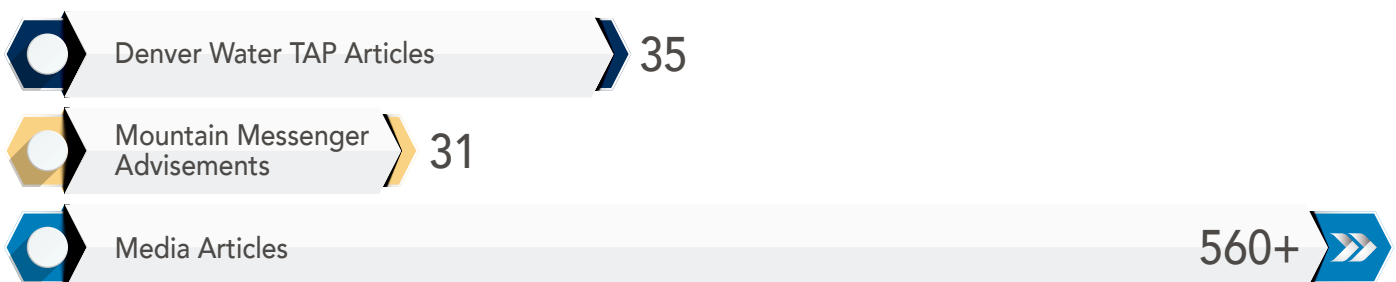
**Due to the COVID-19 pandemic, Denver Water stopped all in-person activities.*

Outreach in 2020 was achieved through the use of online platforms and virtual meetings.



NOTABLE MEDIA

2017 - 2020



PRE-CONSTRUCTION

PROJECT INNOVATION

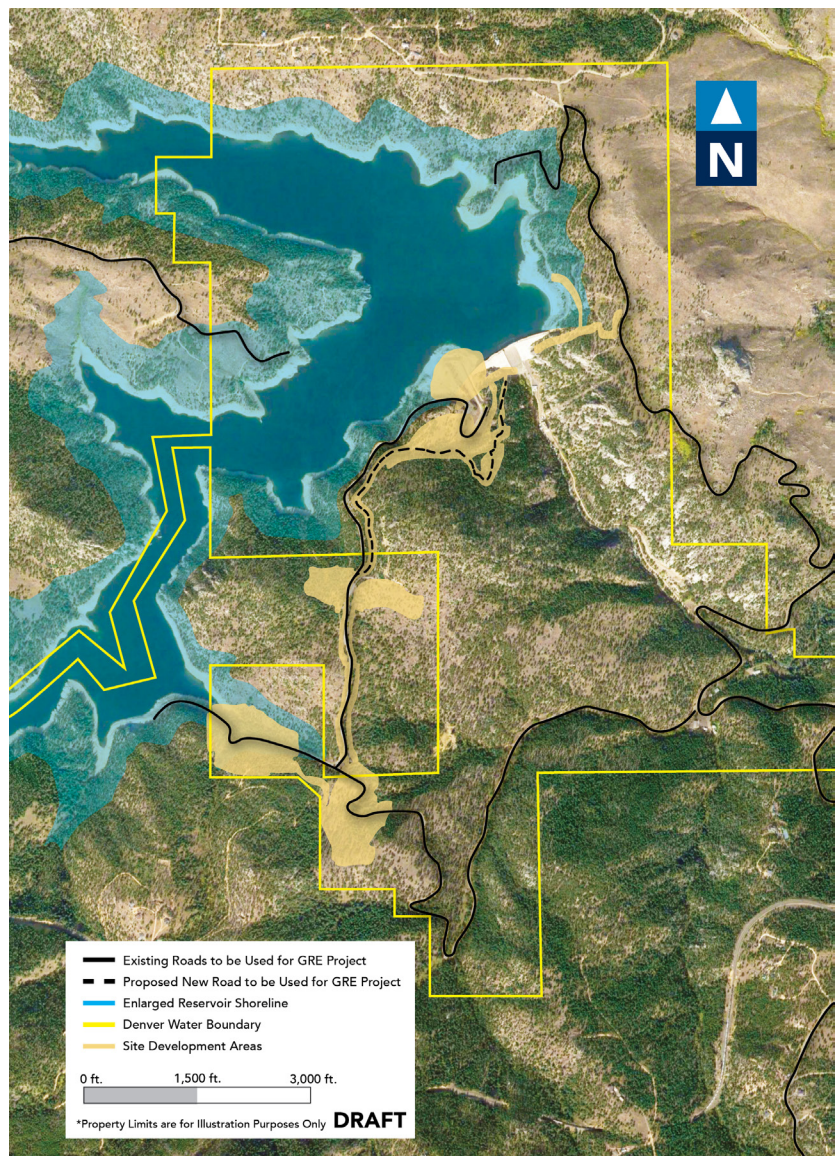
Throughout the dam design process, Denver Water has endeavored to identify project innovation that will be beneficial to the GRE Project. Over 90 individual ideas from Denver Water, the design team, and the CM/GC were collected and considered. The ideas ultimately incorporated into the project resulted in a reduction in anticipated construction period that directly lessens impacts

to the local community. Further, design changes prompted by the innovative ideas resulted in a lower construction cost by more than \$100 million. Some of the innovations identified include adjusting the type of equipment used, optimizing operations and design elements, and identifying activities that can be performed concurrently.

SITE DEVELOPMENT

Throughout 2020, Denver Water worked with the design team and CM/GC to optimize use of the site once construction begins in 2022. Temporary site development includes planning of laydown and staging areas as well as onsite quarry operations.

Simultaneously, Denver Water worked with recreation and environmental compliance staff to minimize site disturbance while considering possible future uses of the areas (i.e. permanent recreational facilities). The map to the right illustrates the in-progress development of the site. Changes to this plan are expected throughout 2021 as Denver Water and CM/GC consider optimizations for construction and future uses.



LOOK AHEAD

ON THE GROUND

Denver Water will continue operational upgrades that are not a part of the GRE Project, including completing the Outlet Works Modification Project, and completing the trashrack upgrades in 2021.

COME OUT AND PLAY!

Recreation opportunities at Gross Reservoir are unchanged for the 2021 boating season. Boaters can access the water from the Osprey Point boat ramp from Memorial Day through Sept. 30. Stay tuned for information about recreation changes coming in 2022.

PLANNING FOR SUCCESS

Final dam design will be completed in early 2021. Denver Water will be working with Boulder County and other agencies to advance various FERC-required plans related to the Gross Reservoir Expansion Project, including Tree Removal, Traffic Management and Quarry plans.

LOCAL COORDINATION

Denver Water will continue to work with Boulder County through the local 1041 Permit process. We hope to complete this process by third quarter 2021.

LET'S CHAT!

Due to continued COVID-19 restrictions, the public information yurt will continue to be closed to the public until further notice. Denver Water continues to host online office hours multiple times a week. Schedule a time to chat by visiting grossreservoir.org/contact.

