

# 2022 ANNUAL REPORT



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# MANAGER'S MESSAGE

Welcome to Northern Water's review of key activities and accomplishments in 2022. Looking in the rearview mirror, two topics come to mind.

First, a reflection of the imprint COVID-19 had on our organization. I certainly don't want to suggest society has inked the last chapter of this modern-day pandemic, but I remain hopeful that related cases continue a downward trajectory going forward. At present, instances within Northern Water's service area are a fraction of the early 2022 count.

Without question, we will remain vigilant. By most accounts Northern Water has returned to its pre-COVID operational practices. However, like many organizations, we have improved our access and use of technology to allow for improved business continuity and service to our constituency.

Also worth underscoring in 2022 was the intensified awareness of decreasing storage levels in critical reservoirs throughout the Colorado River system. Most notable activities were requests by the Department of Interior to substantially lessen water demands in the Colorado River Basin to respond to a two-decade decline in system inflows; and further exacerbated by reservoir releases to counter what appears to be unchecked water demands in certain areas of the lower basin.

At present, Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming have requested the Bureau of Reclamation to evaluate alternative operational scenarios that reduce demand on the system while potentially lessening future water supply uncertainty in the upper basin. Northern Water continues to work hand-in-hand with State of Colorado leadership to identify solutions that address these issues while protecting the state.

On behalf of Northern Water's Board of Directors and each of its staff members, thank you for taking time to review our 2022 Annual Report. Please feel free to contact any of us as we advance through water year 2023.

Regards,

**Bradley D. Wind**  
General Manager



President of  
the Board



**Mike Applegate**  
Larimer County

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## COLORADO RIVER WATER

The Colorado River is critically important to the 1 million people and 615,000 acres of irrigated land in Northeastern Colorado served by Northern Water. On a larger basin-wide scale the Colorado River ultimately provides a supply to nearly 6 million irrigable acres and 40 million residents throughout seven states. However, the Colorado River Basin continues to experience ongoing and extensive drought conditions that have many reflecting on alternative management concepts. These ongoing conditions reinforce Northern Water's longstanding commitment toward using available Colorado River water supplies in a prudent manner and to conserve and protect the resource into the future.

In an October 2022 letter to Bureau of Reclamation Commissioner Camille Touton and Colorado Water Conservation Board Director Rebecca Mitchell, Northern Water took the opportunity to express the importance of Colorado River supplies to Northeastern Colorado. In particular, the letter emphasized several items including:

- » Since the inception of the Colorado-Big Thompson (C-BT) Project and continuing through the development of the Windy Gap Project, water conservation and efficiency have been a priority for Northern Water and the Municipal Subdistrict.
- » Northern Water has never allowed unrestricted use of Colorado River and C-BT Project water supplies. The Northern Water Board of Directors gauges the availability of native water supplies before determining how much supplemental water will be made available to project allottees.
- » Northern Water requires a beneficial use for any project water delivered and ensures project resilience by maintaining appropriate storage levels in its reservoirs.
- » Northern Water delivers Colorado River water to more than 30 municipalities within its boundaries. For various reasons, most of these communities must comply with the state's requirements for water conservation.
- » Northern Water has heavily invested in its own conservation program, for which the organization has won the Environmental Protection Agency's WaterSense Promotional Partner Award for three consecutive years.
- » Lastly, Northern Water will support and coordinate with the municipal water providers within its boundaries to implement voluntary water-saving landscape enhancements and with a goal to reduce non-functional turf by 30 percent.

As policy discussions continue to develop throughout the Colorado River Basin, Northern Water recognizes that it might be appropriate in the future to participate in programs that address the effects of Colorado River drought on storage levels at Lake Powell. It will be paramount that any such programs be developed through the State of Colorado and in conjunction with the Upper Colorado River Commission.

Northern Water awarded approximately \$180,000 in grants to 11 water-efficient landscape projects in 2022, bringing the Water Efficient Landscape Grants Program's total contributions to about \$575,000 over four years, going to 47 projects altogether.

The Engineering News Record, selected Northern Water as its "Colorado/Wyoming/Dakotas Owner of the Year."

Northern Water hosted spring and fall water meetings to a record attendance of 700 people who learned the latest about regional water challenges, project updates and more.

# 2022 WATER YEAR IN REVIEW

At the onset of the 2022 water year in November 2021, water storage in C-BT Project reservoirs was 108 percent of average. This followed a 2021 water year with generally below average precipitation on the West Slope and above average precipitation on much of the Northern Front Range.

The snow accumulation season began slowly but several major storms in late December 2021 and early January 2022 added significantly to the snowpack. On April 1, statewide snowpack was 93 percent of average, snowpack in the South Platte River's northern tributaries was 96 percent of average, and Upper Colorado River Basin snowpack was 88 percent of average. April 1 streamflow forecasts for these basins were generally slightly less than the snowpack as a percent of average due to dry soil conditions and other factors.

At the April 14, Northern Water Board meeting, the Board of Directors set a 70 percent C-BT Project quota allocation. A 70 percent quota is nearly equivalent to the long-term average C-BT Project quota, and it was consistent with Northeastern Colorado's near-average hydrologic conditions in 2022.

Following a dry, windy April, which resulted in increased agricultural water needs, the Northern Water Board increased the C-BT Project quota allocation from 70 percent to 80 percent at the May 12, 2022, Board meeting. In setting each year's quota, the Board balances Northeastern Colorado's supplemental water supply needs with other factors such as local water supplies and the region's potential water needs in future years.

Most of Northern Colorado's watersheds saw a late spring bump in the snowpack due to several beneficial storms. This was followed by a very active monsoon season in many areas of Colorado.

April through July streamflows on the West Slope ranged widely from 77 percent to 134 percent of long-term averages. The high-side outlier was Willow Creek, which had greater yearlong precipitation and increased runoff efficiency due to impacts from the 2020 East Troublesome Fire. East Slope streamflows ended the runoff season ranging from 82 percent to 97 percent of long-term averages.

Water year 2022 total precipitation was slightly below normal for most of Colorado except for high altitude regions along the Continental Divide, as well as several other areas in the mountains and in Western Colorado. Conditions were driest on the Eastern Plains.

According to the U.S. Drought Monitor, at the end of the 2022 water year (October), 83 percent of Colorado was experiencing abnormally dry conditions, 47 percent of the state was in moderate drought (D1) or worse, 14 percent was in severe drought (D2), and 3 percent of Colorado was in extreme drought (D3). Drought conditions across the state are currently mixed, with improvement in some areas but degradation in others, particularly the northeastern plains and along the Lower South Platte River. To review the current Colorado drought index map, visit [www.drought.gov/states/colorado](http://www.drought.gov/states/colorado).

Due to above-average C-BT Project storage at the beginning of the water year, combined with above average inflows into Lake Granby and Willow Creek Reservoir during water year 2022, C-BT Project storage levels were 116 percent of average at the conclusion of the 2022 water year.

Learn more about Northern Water's quota process at [www.northernwater.org/quota](http://www.northernwater.org/quota).



Northern Water was one of just 33 entities nationwide to earn the Environmental Protection Agency's (EPA) 2022 WaterSense Partner of the Year award, marking the third consecutive year Northern Water has been recognized by the EPA with this honor.

Northern Water Board Director Jennifer Gimbel was named the 2022 recipient of the Aspinnall Award by the Colorado Water Congress – widely considered as the state's highest water honor.

The Northern Water-supported Kawuneeche Valley Ecosystem Restoration Collaborative's (KVERC) continued progress to improve the health of the Colorado River headwaters. In 2022, KVERC identified sites for potential restoration in Rocky Mountain National Park, one of which is being actively pursued. KVERC is completing final design and compliance surveys, and securing grant funding for implementation in 2023. KVERC also conducted several outreach events throughout the year.

# CAMPUS DEVELOPMENT

Northern Water continued its Campus Development efforts in 2022 with expansion plans for both East and West Slope operations. With Northern Water's scope of services expanding, this expansion is necessary to ensure the ongoing delivery of high-quality supplemental water. It will also support resilience of our water supply, the operation and maintenance of aging water project infrastructure, and provide educational opportunities for water users. As the region's population continues to grow, hiring additional staff will support our evolving needs for more water supplies and to protect existing resources. The project is anticipated to be complete in early 2024.

In September, West Slope employees moved into the new Willow Creek Campus, located just south of the Willow Creek Pump Plant in Grand County. The campus became Northern Water's first office and maintenance complex on the West Slope. Previously, employees worked out of various locations, including the U.S. Bureau of Reclamation's Farr Pump Plant (part of the C-BT Project's West Slope Collection Systems), as well as the Municipal Subdistrict's Windy Gap Pump Plant.

On the East Slope, portions of the Berthoud Headquarters Campus remain under construction as Northern Water expands the existing 19-year-old campus. Completed in November, Phase I of the expansion included Building F to house the Operations Division, Buildings H and K for fleet and long-term storage, a parking lot expansion and other needed site improvements. Phase II began in August and ramped up in October to add a new wing to Building A for the Finance and Administration, Engineering and Environmental Services divisions.

Learn more at [www.northernwater.org/campusdevelopment](http://www.northernwater.org/campusdevelopment).



# WATERSHED RESTORATION EFFORTS CONTINUE IN SECOND YEAR

Recovery efforts from the 2020 East Troublesome Fire continued in 2022. Within the past two years, mulching operations covered about 12,500 acres within fire-impacted watersheds.

The 12,500 treated acres cost about \$27 million, or \$2,200 per acre. Given the immense post-fire investment, substantial effort took place beforehand to determine which areas were the most critical to treat, in terms of preventing erosion and debris run-off that would most heavily impact private property and downstream infrastructure. In addition, prioritizing the most erosion prone areas helped secure both federal and state funding necessary to pursue the work. Among the many factors taken into consideration were threats to life and property, as well as potential impacts to the C-BT Project's West Slope Collection Systems which sits within or adjacent to the fire's 193,812-acre burn area.

During the first rounds of mulching in 2021, about 2,500 acres of U.S. Forest Service (USFS) land and about 2,500 acres of private property were treated, courtesy of funding support from the Natural Resources Conservation Service's (NRCS) Emergency Watershed Protection program. In 2022, about 7,500 acres of Bureau of Land Management (BLM) and USFS lands were treated via funding agreements with those two agencies. Match funding was provided by the Colorado Water Conservation Board to supplement federal funding.

In addition to mulching efforts in 2022, ongoing work included clean-up along Colo. Highway 125. Monsoonal rains throughout the late summer pushed fire debris and sediment within the burn scar into Willow Creek and other nearby drainages, which overtopped the road in several areas causing numerous road closures throughout the summer.

In response, Northern Water and its fire recovery partners undertook massive clean-up efforts along the impacted stretches of roadway. These efforts – which were done in collaboration with the Colorado Department of Transportation (CDOT), Grand County, NRCS and Flatiron Construction – represented yet another aspect of the \$50 million in watershed restoration work that Northern Water has helped spearhead in response to the second-largest wildfire in state history.

Learn more at [www.GCWatershedRecovery.com](http://www.GCWatershedRecovery.com).



# NISP MOVES FORWARD

The Northern Integrated Supply Project (NISP) took an important step forward in 2022 with the issuance of a federal Clean Water Act Section 404 permit by the U.S. Army Corps of Engineers. The decision reflects the lead federal regulatory agency's review and approval of the project.

The Corps' approval on Dec. 9, was based on a lengthy and rigorous scientific analysis under the National Environmental Policy Act and a host of other environmental laws, including the federal Endangered Species Act, National Historic Preservation Act, State Water Quality compliance certification, and State Fish and Wildlife Mitigation Plan requirements.

In addition, the project marked the completion of a Geotechnical Design Assessment at the Glade Reservoir site northwest of Fort Collins. The work performed by the General Contractor/Construction Manager Kiewit included the construction of a test trench, as well as test quarries to learn more about the geology of the site. The test trench along the axis of the Glade Reservoir Dam revealed important data about the rock types that will form the foundation for the dam. When built, the clay-core, earth-fill dam will stretch across the valley and hold back more than 170,000 acre-feet of water anticipated to fill Glade Reservoir, which will be slightly larger than Horsetooth Reservoir.

In addition to the work at the Glade Reservoir site, project planners continued to work on the design of the project's other critical components, as well as acquiring property necessary to convey water to the 15 municipalities and water districts that will be the recipients of the project's water supply.

The project's public outreach continues, with representatives from NISP appearing at several community-themed events throughout Northern Colorado. Learn more at [www.NISPwater.org](http://www.NISPwater.org).



# MAINTENANCE KEEPS PROJECTS IN PRIME OPERATION

There is no shortage of maintenance and repairs required for a 66-year-old water diversion project that includes 16 dams across a dozen lakes and reservoirs, six hydropower plants, three pump plants, 35 miles of tunnels, 95 miles of canals and 140 miles of pipelines, as well as valve houses and other support structures.

In 2022, Northern Water Collection and Distribution Systems crews once again collaborated closely with the U.S. Bureau of Reclamation, contractors and other partners to maintain the C-BT Project. Much of this infrastructure is also utilized to deliver Windy Gap Project water.

Projects included installing riprap and concrete, removing debris, repairing siphons and turnouts, replacing valves and maintaining pumps, installing water meters and new pipe, upgrading electrical and electronic components, maintaining access roads, and applying sealant and other seepage- and corrosion-prevention measures to canals and pipelines.

While all of these projects could easily fill an entire year, the bulk of this work is often squeezed into just a few months during the late fall and winter – after peak water demand tapers off in late October, and before the irrigation water delivery season begins in early April.

In addition to taking place in a tight time frame each year,

many of these projects require close coordination between Northern Water, Reclamation and others. This collaboration, established procedures and ongoing training help ensure crew safety and that all tasks are performed properly, and in an environmentally responsible manner.

Each year, Northern Water and Reclamation staff determine what projects are necessary to maintain water operations. In 2022, those included:

- » Operating and testing the Southern Water Supply Project's new \$10 million Eastern Pump Plant near Platteville.
- » Collaborating with the Town of Erie on a new winter water delivery pilot program.
- » Installing a new, secure fiber network for Northern Water's West Slope facilities.
- » Rapidly rebuilding a compromised unit at the Willow Creek Pump Plant in time to resume transporting spring runoff into Lake Granby.
- » Participation by the Distribution Systems Department in Chimney Hollow University education sessions to better understand the new project's infrastructure as it is being constructed.



# 2022 BUDGET SUMMARIES

## NORTHERN WATER

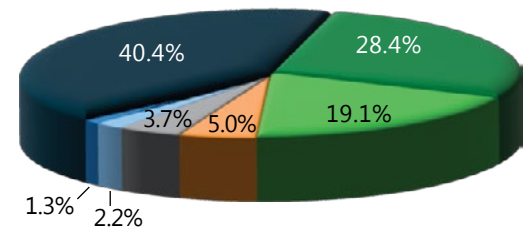
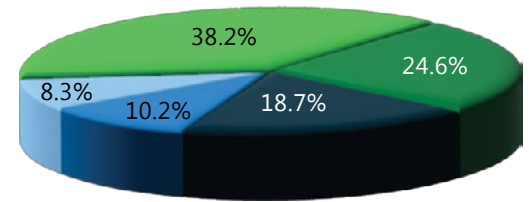
Northern Water maintains a strong financial position while continuing its commitment to provide a reliable and high-quality water supply. Northern Water's sound fiscal health is backed by the highest credit rating attainable (Aaa) from Moody's Investor Service, and second highest (AA+) rating from Standard & Poor's (S&P) Global. These high ratings demonstrate the sound financial health and creditworthiness of Northern Water and show that our obligations are judged to be of the highest quality with low credit risk.

Revenues to Northern Water come from a variety of sources, with the main component being a 1-mill ad valorem tax levied on property within Northern Water's boundaries. In addition, C-BT Project allottees annually pay assessments for water management and water deliveries, and these charges comprise more than one-fourth of Northern Water's revenue. Revenues in excess of expenses help Northern Water build additional reserves for future operating and capital requirements. Of the expenditures, 58.3 percent are attributed to operating costs, initiatives and programs. The 2022 budget numbers below reflect the Northern Water budget during the fiscal year, from Oct. 1 to Sept. 30. Learn more and view full budgets at [www.northernwater.org/finance](http://www.northernwater.org/finance).

### Fiscal Year 2022 Budget

Cash/Bond Proceeds	\$54,968,908 ●
Intergovernmental Grants (incl. Fire Recovery)	\$35,480,000 ●
Property and Specific Ownership Tax	\$26,870,689 ●
Other Revenues (incl. Revenue from Enterprise Funds)	\$14,716,428 ●
C-BT Water Assessments	\$12,018,132 ●
<b>TOTAL SOURCES</b>	<b>\$144,054,157</b>

Capital Assets and Projects (incl. Campus Development)	\$58,169,010 ●
Other Initiatives (incl. Fire Recovery)	\$40,868,000 ●
Administrative, Environmental and Engineering Programs	\$27,425,180 ●
Operation and Maintenance	\$7,217,104 ●
Debt Service	\$5,334,318 ●
Fleet & Facilities	\$3,162,791 ●
Operating Reserve Funding	\$1,877,754 ●
<b>TOTAL USES</b>	<b>\$144,054,157</b>



Northern Water and the Municipal Subdistrict were awarded the Government Finance Officers Association's Distinguished Budget Presentation Awards for 2021, as well as the Certificate of Achievement for Excellence in Financial Reporting for its Annual Comprehensive Financial Reports.

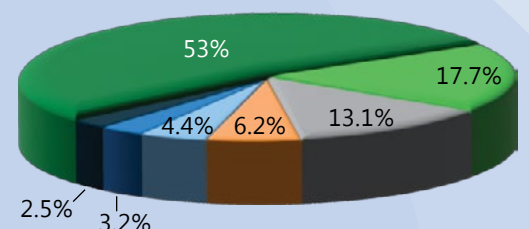
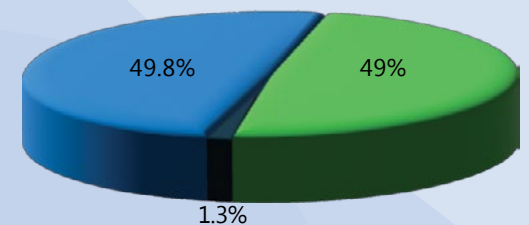
## MUNICIPAL SUBDISTRICT

Northern Water's Municipal Subdistrict is a separate and independent conservancy district initially formed by six municipalities in 1970 to build and operate the Windy Gap Project. The annual budget is one part of a long-term commitment to provide quality services while preserving long-term financial viability of the Municipal Subdistrict.

### Fiscal Year 2022 Budget

Water Assessments and Contributions	\$11,198,300 ●
Intergovernmental Grants	\$11,000,000 ●
Other Revenues	\$282,102 ●
<b>TOTAL SOURCES</b>	<b>\$22,480,402</b>

Capital Assets & Projects (incl. Connectivity Channel)	\$11,908,060 ●
Carriage Delivery	\$3,978,350 ●
Operating Reserve Funding Programs	\$2,937,622 ●
Pumping Energy and Wheeling	\$980,000 ●
Other Operating Expenses	\$711,833 ●
Pump Station and Pipeline	\$565,976 ●
<b>TOTAL USES</b>	<b>\$22,480,402</b>



# MUNICIPAL SUBDISTRICT

The Municipal Subdistrict was formally established on July 6, 1970, with the same powers and legal standing as the parent Northern Water. The Windy Gap Project consists of a diversion dam on the Colorado River that creates a 445-acre-foot Windy Gap Reservoir, a pump plant and a six-mile pipeline to Lake Granby. Currently, Windy Gap water is pumped and stored in Lake Granby before it is delivered to water users via the C-BT Project and associated pipelines. The completion of the Chimney Hollow Reservoir Project will ultimately improve the reliability of these water supplies.



## CHIMNEY HOLLOW RESERVOIR KEY MILESTONES

Chimney Hollow Reservoir construction crews made significant progress in 2022. Work began on this new reservoir in August 2021 and is anticipated to be complete in August 2025.

The project is a collaboration between 12 Northeastern Colorado water providers to improve the reliability of, or make firm, water supplies from the Windy Gap Project. Chimney Hollow Reservoir will be located just west of Carter Lake in Larimer County to provide dedicated storage to supply a reliable 30,000 acre-feet of water each year for future generations.

Here are some highlights from this year's work.

**Main Dam Foundation Prep:** In November, crews completed the main dam rock excavation.

**Hydraulic Asphalt Core:** Crews began the asphalt placement in October. For the next two years, the asphalt will be placed in 9 inch "lifts" until the dam reaches a height of about 350 feet. Rockfill and drain construction occur concurrently to complete the embankment construction as the dam grows in elevation.

**Bald Mountain Interconnect:** A shutdown of the C-BT Project occurred from Sept. 15 through mid-December as crews cut into existing infrastructure to tie in a 126-inch steel pipe with a 72-inch steel offtake (known as a wye) to add the ability to deliver water into Chimney Hollow Reservoir from the C-BT Project.

**Larimer County and Saddle Dam Access Roads:** On Nov. 15, the Larimer County and the saddle dam access roads were completed. When the reservoir opens to the public, the Larimer County access road will be the entry road to Chimney Hollow's future public recreation and open space facilities. The saddle dam road extends to the southern saddle dam and will be used by Northern Water for maintenance activities.

**Downstream Tunnel and Valve Chamber:** Excavation of the 26-foot diameter downstream portion of the tunnel, which runs 667 feet to the center of the main dam was completed in October. Ultimately, a 72-inch diameter steel conduit will be placed inside the tunnel to bring water in and out of Chimney Hollow Reservoir.

Learn more at [www.chimneyhollow.org](http://www.chimneyhollow.org).

## COLORADO RIVER CONNECTIVITY CHANNEL

Regional dignitaries gathered on Aug. 23 to celebrate the start of construction at the Colorado River Connectivity Channel in Grand County. The new channel will reduce the existing dam's length by about 800 feet, and a new channel will direct water around Windy Gap Reservoir for most weeks of the year. This major reconfiguration of the dam and reservoir will allow fish movement upstream and downstream of the impoundment and passage of riverine sediment. These changes will provide significant aquatic and riparian ecological enhancements to the Colorado River and are part of a slew of environmental commitments associated with the Windy Gap Firming Project, of which the Chimney Hollow Reservoir is the main component.

The connectivity project will take about three years to build, at a cost of nearly \$30 million.

Learn more at [www.northernwater.org/CRCC](http://www.northernwater.org/CRCC).

