An aerial photograph showing a wide, turbulent river with a large dam in the background. The river is filled with brown, muddy water and is heavily littered with debris, including logs, branches, and pieces of wood. The surrounding landscape is rugged, with steep, rocky banks and patches of green vegetation. The sky is overcast, and the overall scene conveys a sense of environmental damage and flooding.

Northern Water WATER NEWS

NOVEMBER 2013

**REGION HIT
DROUGHT
FIRE
FLOODS**

**Damages demand
rapid response**

**MONITORING
Water quality in
disasters' wake
page 10**

Water planning

Challenges remind us to honor the past when looking ahead

The past year has seen many accomplishments and goals achieved by Northern Water. We have also seen how quickly new challenges can arise and priorities can change with natural disasters like wildfire, prolonged drought and flooding in our region.

The future of Northern Colorado is founded on the wise stewardship of the natural resources that this area was blessed with such as high-quality water supplies, abundant forests, productive agricultural lands and the wonderful environmental setting that makes this the area that we love. Preserving that foundation of inextricably connected resources is critical for our future. Maintaining and enhancing the water supply projects that have served the region so well is a keystone in Northern Water's Strategic Plan.

Great progress on permitting for the Windy Gap Firing and Northern Integrated Supply projects is being made. Both have been identified as important components to meeting future water needs of the region. Without them, many of the qualities that make this a great area to live in will be degraded.

The participants that are beneficiaries of the two projects have real needs that require these real solutions. We look forward to the implementation of the work that has been ongoing for the past two decades.

The governor of Colorado recently issued an executive order for the Colorado Water Conservation Board to prepare a state water plan. This will be the culmination of the basin roundtable process that has been proceeding for eight years. This process brings a dedicated group of stakeholders from all water interests, representing each basin, to work on defining the state's future water demands to the year 2050. Not surprisingly, the South Platte River basin was identified

as having the largest potential gap in available water as growth continues along the Front Range.

Northern Water has participated in this process from the start. This statewide planning process highlighted the critical need for the Windy Gap Firing Project and NISP to help meet that future water demand.

It also showed that NISP and other projects conceived in a similar pattern are critical to preserving environmental values and keeping irrigated agriculture from becoming the default water supply for future generations.

The recent wildfires in the past few years have emphasized the critical need to protect the watersheds that provide our high-quality water supplies. Northern Water has been working on this challenge for many years. We are working proactively with our federal partners to mitigate the wildfire risks associated with our water projects.

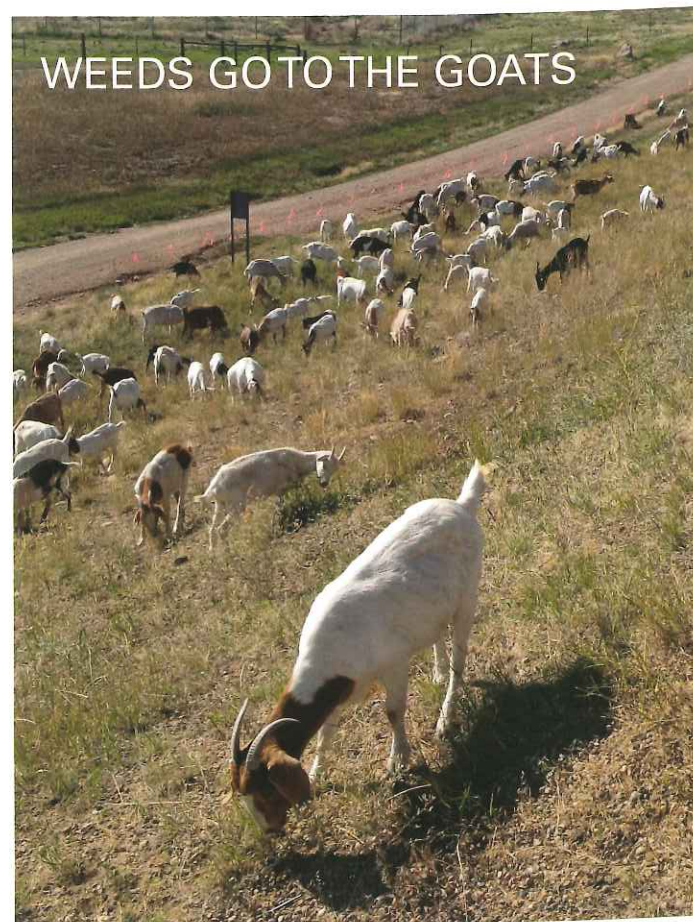
As someone who lived in the middle of the High Park Fire for the first nine days, I fully understand the importance in keeping our water supplies protected from these disasters.

We are actively working with the U.S. Forest Service, the Natural Resources Conservation Service, the Colorado State Forest Service and the U.S. Bureau of Reclamation in trying to reduce and manage the risk to our water supplies. This is going to require significant additional funds and other resources to be strategically used for water supply protection. These will be resources well spent.

Northern Water has been working for you for more than 75 years. Our dedication to providing the region a high-quality, reliable water supply will continue to be our highest priority.



WE NOW FACE ANOTHER CHALLENGE due to the September floods along the Front Range. Many within Northern Water's district have been severely impacted. We reprioritized our efforts to repair the damage to our water delivery facilities while also sustaining the availability of regional water supplies.



WEEDS GO TO THE GOATS

Goats provide a win-win for their appetites and Northern Water's need to weed at Boulder Reservoir's dam. The munchers, motivated by a herder, replace the use of chemicals and manual labor.

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Monitoring efforts ramp up after Fern Lake Fire, 2013 flooding



FRONT COVER
Dille Tunnel diversion structure in Big Thompson River flood waters; photo courtesy City of Loveland

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Fire Alarm

Recent devastating wildfires spur unified partnership to protect C-BT water



High Park

June 2012: 87,200 acres
Poudre River watershed

Hewlett Gulch

Spring 2012: 7,700 acres
Poudre River watershed

Post-fire projects

Northern Water's responses

- Funding seeding and mulching to promote vegetative growth and reduce erosion
- Placing debris booms and constructing sediment basins to capture fire debris and sediment material above reservoirs
- Planning potential future install of floating booms in reservoirs to capture debris
- Installing more water quality monitoring equipment to provide real-time data
- Developing multi-agency baseline sampling to study rainfall and runoff
- Evaluating options to modify operations to minimize water quality impacts

Big Meadows

June 2013: 650 acres
Grand Lake watershed

Galena

March 2013: 1,400 acres
Horsetooth watershed

Fern Lake

Oct. 2012-June: 3,500 acres
Lake Estes watershed

WHY ARE FEARS RUNNING SO HOT? Colorado wildfires are more frequent and larger than they were just two decades ago. Experts implicate changes in vegetation, climate and ignition sources. The range of recent causes include drought, pine beetle infestation, past fire suppression practices, population growth and the urban interface with wild lands.

With years of record-breaking drought conditions and beetle epidemics, it's not surprising that 2012 and 2013 brought devastating wildfires to Colorado, leaving scarred watersheds and serious water quality concerns in their wake.

At least a quarter of Northeastern Colorado's drinking water supply comes from the Colorado-Big Thompson Project, which collects and delivers water to a 1.6-million-acre area with 860,000 residents. Burn areas in C-BT watersheds are susceptible to increased rates of runoff and erosion after fires kill vegetation and burn soil. When precipitation and resulting runoff bring post-fire sediment, ash or debris into streams or facilities, drinking water treatment becomes difficult, if not impossible.

Farming can also be harmed by fires. More than 120 ditch companies and many individuals own C-BT water, which irrigates about 650,000 acres in the region. Sediment and debris can clog sprinkler equipment and conveyance facilities.

In summer 2013, the Munroe Canal diversion, which diverts from the Poudre River within the High Park Fire burn area and delivers C-BT water to the North Poudre Irrigation Company, became plugged with rock and debris during heavy rains. Deliveries were interrupted for 10 days while crews removed hundreds of cubic yards of material.

The devastation brought on by recent wildfires led to the formation in 2012 of a partnership between Northern Water, the U.S. Bureau of Reclamation, the Colorado State Forest Service and the U.S. Forest Service. They formed the C-BT Headwaters Partnership, which is pursuing a two-pronged approach: restore forest and watershed health before fires

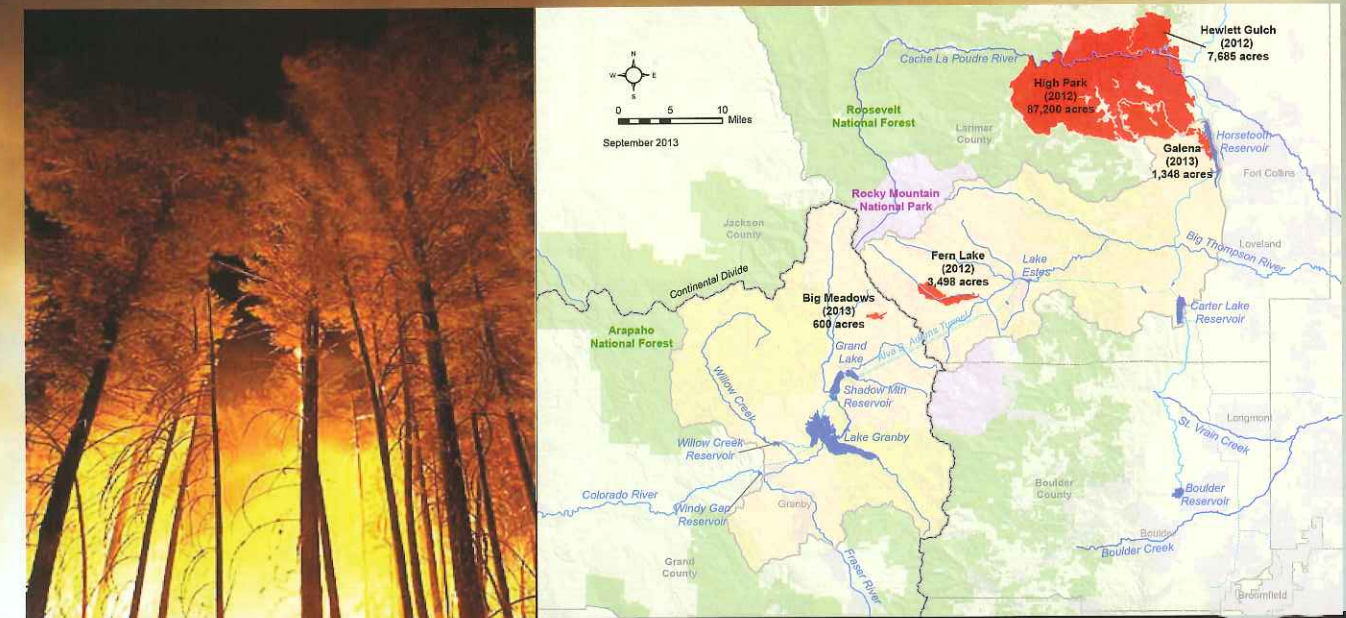


occur, and make plans to protect water supplies after fires.

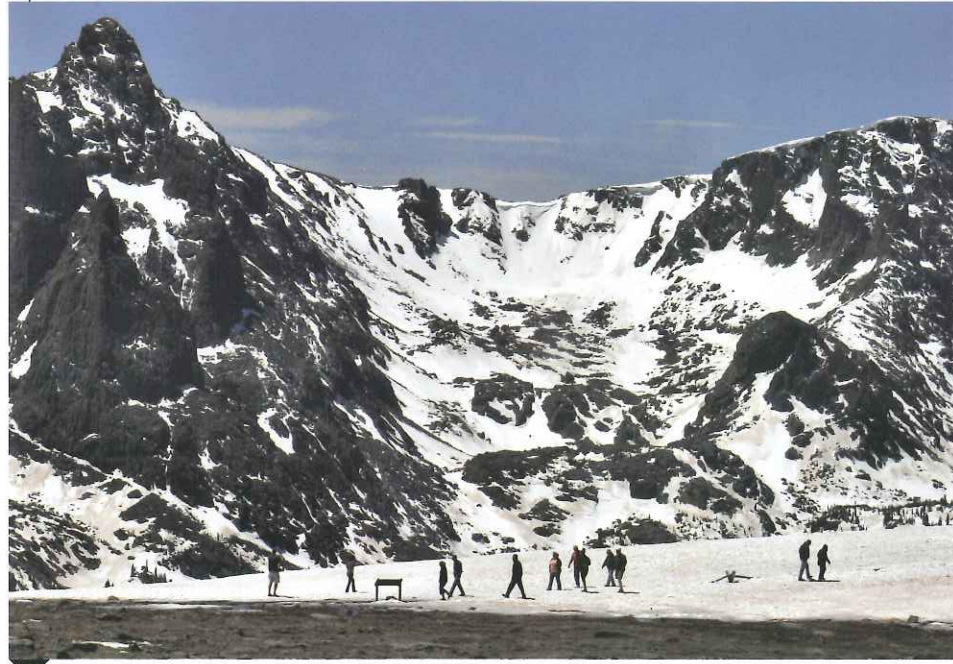
One way to lessen wildfires' potential for destruction is to reduce likely sources of fuel – dead trees and living trees in high-density areas. Beetle kill lodgepole pine removal has already started near Willow Creek Reservoir and around the Adams Tunnel's West Portal, at the east end of Grand Lake.

The locations and types of future treatments are not yet determined, given the need to study options and balance landowner cooperation, environmental considerations and economic impacts. Partners are doing an assessment to help prioritize the treatments based on hazard rankings for wildfire, flooding, debris, erosion and water supply.

Common post-wildfire work focuses on reducing erosion, runoff rates and the amount of sediment that could drain into water supplies. These efforts require equipment and materials, which partners are acquiring in advance when possible. They will also draft a coordinated communication plan to use during and after fires.



FINDING FUNDS WILL BE A CHALLENGE. Although the projects' potential price tag is daunting, it's small compared the cost of waiting for fires to strike, says Northern Water's Jerry Gibbens. "Based on others' experiences, we feel proactively addressing forest health conditions and pre-planning post-wildfire response is a far more economic approach than dealing with the effects afterward."



Big Thompson River headwaters area in Rocky Mountain National Park

Drought to flood

What a strange water year 2013 was

It was a rollercoaster year for water forecasters and water managers alike as they made predictions one week, only to have to revise them a few weeks later.

On the heels of a very dry 2012, water officials were not optimistic in January when snowpacks throughout the state were registering between 20 and 40 percent below normal. As conditions worsened in February and March, the Colorado Water Conservation Board activated its drought mitigation and response plan and created a special drought-related website.

In Northeastern Colorado, cities indicated there would be little or no rental water, often a source for farmers, available. Farmers made adjustments to planting schedules including fallowing land or changing cropping patterns.

The water outlook looked grim as Northern Water's Board of Directors prepared for the April discussion on the Colorado-Big Thompson Project quota, or water allocation. Most snowpack numbers and corresponding runoff estimates were tracking in line with 2012. April 1 snowpack levels in the Colorado River basin – 77 percent of average – and the South Platte River basin – 67 percent of average – illustrated the seriousness of the situation.

Directors established a 60 percent C-BT quota at their April meeting based on water availability for only the second time in project history. In most years the quota is based on the region's water demands.

Although conditions improved, directors chose to keep the quota at

60 percent for the year. Many board members felt this was indeed a good year to rebuild project reserves following a dry 2012, when Northern Water delivered almost 300,000 acre feet of C-BT and Windy Gap water to users.

The water supply outlook took a turn for the better in late April and May. Snowpack totals increased to 104 percent in the Colorado River basin and 100 percent in the South Platte River basin. C-BT storage increased by almost 100,000 acre feet in April and May. Projected runoffs in the Poudre, Big Thompson and St. Vrain rivers increased by 30 to 40 percent.

Following the late April and May precipitation, the water year turned dry again. In August the entire state was in some level of drought according to the University of Nebraska's National Drought Mitigation Center. And while the worst conditions were in Southern Colorado, the northeastern quadrant was not spared.

The rollercoaster year continued with the unprecedented September rains that produced damage far worse than any possible benefits that could have resulted from the precipitation.

While the majority of Northern Water's weather stations reported record-breaking precipitation for one-day and monthly periods, the resulting floods were the most destructive in recent memory.

Estimated peak flows on the South Platte's major tributaries shattered or came close to all-time records. The flooding placed a dark ending to a 2013 water year that began with drought.

We may never see another year like it.

BECAUSE OF FLOODING and resulting damage to many water delivery systems, Northern Water's board decided at its October meeting to make a one-time increase to the C-BT Project's annual water carryover limit for the 2014 water year from 20 to 30 percent. Damage prevented water users from taking delivery of late-season native supplies and their remaining 2013 C-BT water supplies.

Flood Impact



Heavy rains and high flows require quick action to repair C-BT facilities and assist others

Flood damage to a siphon inlet structure on the Boulder Feeder Canal in Lyons, and the result of crews' rapid repairs (inset)

“The impacts on the C-BT Project were not nearly as bad as they could have been, and they were much better than our initial assessment. Where work was needed, employees from all departments picked right up and quickly responded.”

— Brad Wind, Northern Water deputy manager, Oct. 3 board meeting

Colorado-Big Thompson Project dams and other infrastructure held up well during the flood. Despite the damages that did occur, Northern Water was able to make full C-BT deliveries by mid-October, much earlier than originally anticipated.

Most of the damage to the C-BT facilities Northern Water owns, which extend beyond Carter Lake and Horsetooth reservoirs, occurred toward the system’s south end, including

the Boulder Feeder and St. Vrain Supply canals and related structures near Lyons.

The Southern Water Supply Pipeline, which delivers water from Carter Lake south to Broomfield and east to Fort Morgan, also sustained minor damage.

Although the C-BT Project was not built for flood control, it provided operational flexibility to reduce flows in some areas.

Northern Water and the U.S. Bureau of Reclamation have managed important repairs on multiple jointly-operated facilities that received more extensive damage in the floods, particularly the Dille Tunnel and diversion structure in the Big Thompson Canyon. Also, a pier that anchors the Big Thompson Siphon at the canyon mouth above Highway 34 sustained cracks.



CLOCKWISE FROM TOP LEFT: Grading the eroded lining of the Boulder Feeder Canal north of the Left Hand diversion structure; cleaning up the Left Hand diversion structure on the BFC; removing debris from the St. Vrain Supply Canal outlet structure; removing silt from the flooded BFC just east of Highway 36 in Lyons



During and after the floods, Northern Water cooperated with other agencies and, when possible, helped address the needs of the region, including acting as the fiscal agent to administer funds for a \$1.65-million Colorado Water Conservation Board flood recovery grant.

The grant provided seed money for restoration and rehabilitation projects by funding initial construction to assist with efforts to regain the ability to operate. Applicants could be agricultural, domestic, municipal and industrial water users in the South Platte River basin. Northern Water began accepting applications on October 14, with the application and review process set to repeat every two weeks until exhaustion of grant funds.

IN SIX DAYS, many regional weather stations recorded precipitation amounts exceeding what they usually get during the entire month of September. During the flood, peak flows on the Big Thompson River, which average 880 cfs, were estimated at 10,000 cfs – a far cry from the estimated 32,000 cfs during the 1976 flood. Peak flows on the Poudre River were estimated at 10,000 cfs – less than half of the 1891 record. The average is about 3,000 cfs.

More information about the flood, including the CWCB grant program, is available at www.northernwater.org.

CLOCKWISE FROM TOP LEFT: Big Thompson River receding post-flood, exposing the Big Thompson Power Plant; flood damage to Highway 34 beneath the Big Thompson Siphon; repairs to an exposed section of the Southern Water Supply Pipeline across the Little Thompson River; pre-repair review of the damage to the SWSP



Big Thompson River after the Fern Lake Fire, which burned above Moraine Park

After the fall flood

Northern Water increased its monitoring efforts as an immediate response to the September floods on the Front Range, when rushing waters flushed debris downstream, severed sewer transmission lines and inundated wastewater treatment plants.

At the onset of the flood, the C-BT Project's Horsetooth Reservoir and Carter Lake were storing excess streamflows, but as debris buildup in waterways increased, operators shut off diversions to prevent contamination.

Northern Water has been submitting floodwater samples to look at common parameters as well as emerging contaminants and volatile organic compounds such as oil and paint.

Northern Water will continue to adjust monitoring efforts and responses as needed to ensure minimal water quality impacts to the water supplies that feed Carter Lake and Horsetooth Reservoir.



High flows caused debris buildup that could compromise water supplies

Water quality post-disaster After the Fern Lake Fire

Northern Water is managing a study to determine water quality impacts from the Fern Lake Fire, which was active from October 2012 to June 2013 and burned 3,500 acres in Rocky Mountain National Park at the headwaters of the Big Thompson River, a source for Colorado-Big Thompson Project supplies.

The study analyzes impacts from snow and rain runoff from the burn area, which is in steep terrain above Moraine Park, a large, flat meadow that will likely mitigate water quality impacts in the

wake of the fire.

The burn area sits at higher elevations than other recent fires, so the study's findings could be useful when applied to future fires on the West Slope.

Northern Water, Estes Park, Loveland, Fort Collins, Greeley and Boulder are funding the project, with assistance from the Big Thompson Watershed Forum and the U.S. Geological Survey.

Northern Water will prepare a summary of the results and findings, which will be posted under the water quality tab at www.northernwater.org.

THE C-BT AND WINDY GAP PROJECTS are a major drinking water supply source for most of the municipalities they serve. Therefore, protecting the watersheds associated with the projects is of particular concern. Land use, anthropogenic activities and natural events can all affect the source of drinking water supplies.

Water quality a focus on both sides of the Divide

Horsetooth Reservoir model

In 2012, Northern Water, the U.S. Bureau of Reclamation, Fort Collins, Greeley and the region's Tri-Districts developed a Horsetooth Reservoir water quality model.

The model serves as a tool for understanding the impacts of changes in operations, infrastructure and watershed health on the reservoir's water quality.

The model looks at water movement, thermal stratification and water quality –



Sampling provides a foundation for water quality modeling

including nutrients, algae, dissolved oxygen, organic matter and sediment relationships – as part of an effort to learn more about issues impacting aquatic life and drinking water treatment. Participating agencies completed a report on the findings in 2013.

Emerging contaminants study

Northern Water is collaborating with several municipalities to determine the presence of pharmaceuticals and other emerging contaminants in Colorado Big-Thompson Project reservoirs and other waters, including rivers associated with regional drinking water supplies. Sites monitor 150 constituents, including pesticides, personal care products, caffeine, DEET and hormone-mimicking compounds.

Three Lakes collaborative efforts

Water quality in the Three Lakes – Lake Granby, Shadow Mountain Reservoir and Grand Lake – has been a focus for Northern Water, Reclamation and Grand County officials for several years.

One initiative is modifying C-BT summer operations in an attempt to improve water quality in Grand Lake and Shadow Mountain Reservoir. In summer 2013, residents and visitors likely noticed that Shadow Mountain Reservoir's water looked

green. This coloring grew out of a scheduled six-week stop to pumping that warmed the shallow reservoir, promoting the growth of algae.

These changes in C-BT Project operations provide background for agencies' future review.

Northern Water and Reclamation are committed to assessing Grand Lake's water quality and clarity and investigating possible mitigation measures.

The two agencies signed an agreement with Grand County in 2010 to fund a preliminary alternatives report, which was published in 2012.

The next step, a technical review to develop a plan of study, is underway.

In 2013 Northern Water's water quality staff published a summary report on the project, which develops a baseline of data for these compounds to help monitor for changes in the future.



Microscopic algae grew in Shadow Mountain Reservoir in summer 2013 due to operational changes made to study Grand Lake. Aquatic plants visible in the photo above are also an issue in the reservoir and were particularly extensive in 2013. However, they are unrelated to the green color caused by the algae.

THE WATER QUALITY section at www.northernwater.org has more information on all of these efforts, including: descriptions of Fern Lake Fire water quality monitoring sites, a report detailing Horsetooth Reservoir model development and findings, details and reports on Three Lakes water quality studies, and a report on the first years of the emerging contaminants study. Northern Water's home page also links to a page dedicated to the 2013 flood.

Poised for permits

Mitigation plans move project forward

The proposed Windy Gap Firing Project has made major progress in the last two years, including approval of state fish and wildlife mitigation and enhancement plans and the issuance of a 1041 permit from Grand County's Board of County Commissioners.

The firing project is a collaborative proposal between 13 Northeastern Colorado municipal providers to improve the reliability of water supplies from the 1985 Windy Gap Project by building a new East Slope reservoir called Chimney Hollow. Northern Water's Municipal Subdistrict is coordinating project permitting on behalf of the 13 participants.

Permitting may come to a close in 2014, with the completion of several processes, including negotiations with the U.S. Bureau of Reclamation to modify an existing carriage contract for transporting Windy Gap water through Colorado-Big Thompson Project facilities as well as Reclamation's issuance of an official Record of Decision.

Bypass breaks ground on reaching agreement

The 1041 permit issuance came with approval of several cooperative agreements, including one that calls for the Municipal Subdistrict to pay \$250,000 for a study to determine the potential benefits of building a bypass around or through Windy Gap Reservoir.

The study will review whether Windy Gap Project modifications, such as a bypass, could benefit the Colorado River's aquatic health downstream of project diversions.

Guidelines for the study, which began in mid-2013, include:

- Evaluating reduced sedimentation and stream channel armoring issues
- Investigating measures to support a healthy riparian zone
- Designing measures to accommodate flows anticipated in the future
- Evaluating measures to complement restoration/habitat improvements downstream
- Maintaining collaboration with other entities

The agreement's signatories are Grand County's commissioners, the Municipal Subdistrict, firing participants, Trout Unlimited and the Upper Colorado River Alliance. As part of the agreement, the Municipal Subdistrict agreed to:

- Contribute \$250,000 to pay for the third-party bypass study
- Contribute \$2 million toward bypass implementation, if the study finds it would be beneficial
- Provide perpetual bypass operation and maintenance
- If bypass is not built, contribute \$2 million for Colorado River aquatic habitat restoration

Additional support comes from the Colorado Water Conservation Board, with \$2 million toward bypass implementation if it is built; Colorado Parks and Wildlife, with in-kind services toward implementation; and signatories, with agreement to obtain additional funding if needed.

The final report, anticipated for completion by the end of 2013, will include recommended actions based on alternatives' relative abilities to improve aquatic habitat and enhance river conditions.



Why a bypass?

The original Windy Gap Project does not include a reservoir that stores large amounts of water for future use. Its reservoir can only hold 445 acre feet of water – in comparison, Lake Granby can hold more than 1,200 Windy Gap Reservoirs, and Horsetooth Reservoir can hold more than 350.

A more accurate description of Windy Gap would be calling it a diversion dam and forebay reservoir. The project sits below the Fraser River's confluence with the Colorado River, which flows directly into and through the bottom of the reservoir. River water is either diverted and pumped six miles up to Lake Granby for storage, or continues to flow through the reservoir outlet and downstream.

Biologists have been interested in the idea of modifying the project by adding a structure to transport the river and/or aquatic life without moving through the reservoir.

The bypass study, which could be complete in 2013, reviews the potential benefits of a bypass, including each alternative's impacts on fish passage, sediment transport and stream water quality, while also considering cost effectiveness.

Releases for municipal use also benefit fish, recreation

A new cooperative water lease agreement between Northern Water and the city of Grand Junction will benefit multiple Colorado River water users in different parts of the river for years to come.

The agreement, finalized in July, provides more than 5,400 acre feet of water for municipal-recreational use in Grand Junction through releases out of Lake Granby down the Colorado River. The first release began on August 1 and they continued through September.

The lease agreement provides flow enhancements that will assist Grand Junction in its efforts to improve recreation on the Colorado River between Palisade and Fruita. Because these releases supplement flows from the Granby area downstream to Grand Junction, they also have the ability to enhance river recreation and aquatic habitat.

This area of the river near Grand Junction is a focus for fish habitat, based on a requirement that water users from both the East and West slopes provide a total of 10,825 acre feet each year to a 15-mile reach of the river to fulfill a commitment under the Upper Colorado River Endangered Fish Recovery Program. This cooperative effort between Northern Water and

other transmountain diverters is the culmination of a great deal of work and shows how creative use of water can provide diverse benefits.

The water for the releases comes from ceasing irrigation on land near Granby, and capturing the water in Lake Granby before releases are made down the Colorado River. Releases will be made during late summer and early fall, and release patterns will depend on whether the year is wet or dry as well as what the targeted streamflows are in the Colorado River near Granby.

The releases from Lake Granby serve a double duty by also providing a significant benefit to the Colorado River in Grand County at a time when flows are typically low. The additional flows in the upper reaches of the Colorado River will improve fish habitat and stream temperatures during low flow periods.



Collaborative management plan under review

A cooperative effort to protect certain values connected with the Colorado River is moving forward.



Northern Water is one of about 20 organizations and agencies that came together to jointly draft a management alternative to meet federal requirements to protect wild and scenic values on the Colorado River between Kremmling and Glenwood Springs, yet maintain local control over the river's management and water use.

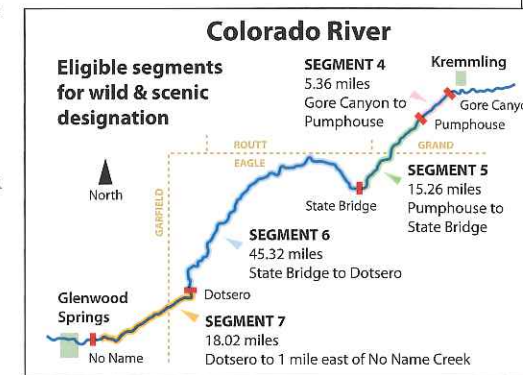
The group submitted its plan in January 2012 to the Bureau of Land

Management and the U.S. Forest Service for inclusion into a federal review of management alternatives to protect values on this reach of the river.

Federal agencies are investigating the possibility of a Congressional designation to protect sections of the river through the national Wild and Scenic Rivers Act, passed in 1968 to protect outstanding values associated with river corridors. In the case of these four reaches of the Colorado River, these values include recreational fishing and floatboating.

The stakeholder group's proposed plan balances permanent protection of these values with preservation of water project yield and flexibility for water users. Protection of values will be accomplished through both long-term measures and other cooperative efforts. As part of this balance, the plan would not impair the ability of water providers such as Northern Water to meet supply commitments.

Stakeholders have already seen success



for a key protective feature – decrees now held by the Colorado Water Conservation Board for three new instream flow rights on the Colorado River between Kremmling and the confluence with the Eagle River.

The BLM and USFS anticipate a decision in late 2014. Until then, the stakeholder group is making progress by collecting and compiling data to support the group's proposal, including boating use, fish surveys and interviews with boaters.



Glade Reservoir site

Positive news for NISP Poll shows increased support

The U.S. Army Corps of Engineers' supplemental draft environmental impact statement process for the Northern Integrated Supply Project is nearing the finish line, and proponents recently received more good news.

In July, Floyd Ciruli, a well-known Colorado pollster and political analyst, updated a 2008 public opinion poll and found that public support for NISP is as strong as it was five years ago, and in many instances is even stronger.

"This is good news," said NISP Public Affairs Coordinator Brian Werner. "It shows that there remains overwhelming public support for NISP and that the public is indeed mindful of the need for new water storage projects."

The updated survey was conducted in July 2013 and polled 900 voters in Larimer, Weld and Morgan counties. Results showed 72 percent voter support for NISP, in comparison to the August 2008 poll of 800 Larimer and Weld county voters that showed 70 percent support.

Support for NISP remains strong in both Larimer County and Fort Collins. In 2013, Larimer County voters gave NISP a 68 percent approval, and 60 percent of Fort Collins voters stated support.

In addition to overall NISP support, the 2013 poll also found that voters are eager for the permitting process to be finished and that they feel 10 years of environmental impact

study is long enough. Those polled overwhelmingly supported Colorado Gov. John Hickenlooper's effort to expedite this process. The governor wrote a letter to the Army Corps in May 2012 asking that the process be facilitated if at all possible.

The Army Corps has indicated that the supplemental DEIS will be completed and released to the public by June 2014.

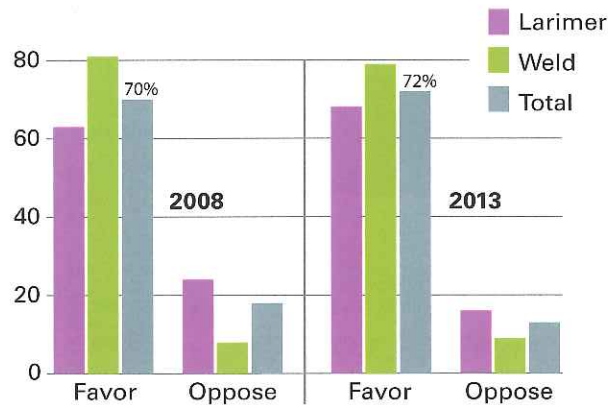
The supplemental DEIS was initiated in early 2009 to conduct additional modeling and hydrologic studies and to update and clarify details from the DEIS in regard to aquatic, riparian, water quality and geomorphology issues.

Once the comments are reviewed the Army Corps will prepare a final EIS which is anticipated sometime in 2015. Following that, a formal record of decision will be made either denying the permit application or allowing the project to proceed, along with identifying mitigation steps the NISP participants must provide.

Other requirements include receiving a 401 water quality certification from the Colorado Department of Public Health and Environment, a 404 permit to build from the Army Corps, a carriage contract with the U.S. Bureau of Reclamation and a state fish and wildlife mitigation plan.

If the current schedule proceeds a record of decision could be made sometime in 2015 or 2016. If the project receives a positive decision it would take two to three years to finalize the design and an additional three or four years to build the necessary reservoirs, pump plants and pipelines. In this scenario Glade Reservoir could be operational in 2021 or 2022.

Polls: Northern Colorado voter support for NISP



ENDORSEMENT LIST GROWS More than 125 groups and officials, ranging from agricultural and business organizations to water districts and public and elected officials, have formally endorsed NISP. The endorsements include three noteworthy West Slope organizations: the Ute Water Conservancy District, the Southwestern Water Conservation District and Club 20. Recent additions are the Poudre Valley REA, the Colorado Association of Wheat Growers and the Associated General Contractors of Colorado. For a complete list and more NISP information, visit www.gladereservoir.org.

Carter Lake gate rehab nears completion

By Thanksgiving Northern Water should complete the final phase of a multi-year outlet gate rehabilitation project at Carter Lake.

The reservoir's original outlet has been in service since the early 1950s. Prior to 1995, Carter Lake water was only delivered during the crop irrigation season (April through October). During the winter months, crews repaired the outlet.

In 1995, Northern Water completed a pipeline that carries Carter Lake water year-round to cities and towns. Year-round municipal and industrial water deliveries represent Northern Water's largest and fastest growing constituency.

Carter Lake's original outlet was intended for large-volume water deliveries during the irrigation season. Year-round releases severely limited Northern Water's ability to repair the aging structure. A February 2004 inspection of the outlet revealed

substantial erosion of the brass seals, and Northern Water and the U.S. Bureau of Reclamation began planning a new outlet designed for year-round use.

Completed in March 2008, the new \$12 million Carter Lake outlet provided operational flexibility and enabled work to begin on the original outlet. During spring 2011 crews removed, rehabilitated and reinstalled the twin operating gates.

The second project phase, currently underway, is more complicated. The upstream twin outlet gates, or guard gates, are closer to the reservoir than the now-rehabbed operating gates.

In mid-October a trained dive team from Associated Underwater Services of Spokane, Washington, dove to a depth of nearly 80 feet to install a bulkhead, or plug, over the original outlet's intake structure. Northern Water crews then de-watered the outlet works and removed the upstream guard gates. Once fully restored and refurbished, the



Crews practice bulkhead placement before dive team work begins

gates will be reinstalled by the end of November.

Northern Water staff, including operations and maintenance, engineering, facilities, purchasing and management are assisting with this \$322,000 project.

Board reappointments



Left to right: Bill Emslie, John Rusch and Les Williams

Three Northern Water board members were reappointed in September – Bill Emslie, Larimer County; John Rusch, Morgan and Washington counties; and Les Williams, Boulder County.

The 12-member Northern Water board represents portions of eight Northeastern Colorado counties: Boulder, Larimer, Weld, Morgan, Washington, Logan, Sedgwick and Broomfield. Directors serve four-year terms; govern and set policy; and direct management, staff and legal counsel.

Director Emslie, a representative since 2005, is semi-retired and works part time for the Platte River Power Authority as a senior project engineer. Director Rusch is a farm management and water resource consultant in the Lower South Platte River basin. Director Williams retired in 2010 from the St. Vrain and Left Hand Water Conservancy District, where he was a manager for 23 years.

C-BT water rates increase

Northern Water's board on August 1 approved a new rate structure for Colorado-Big Thompson Project open rated allotment contracts. The rate increases range from 14 cents to \$2.56.

The municipal/domestic and industrial rates increased by \$2.56 to \$28. The agricultural rate is now \$10, up from \$9.86.

The board holds a rate hearing each August to determine adjustments on C-BT open rated allotment contracts which have been transferred or modified since 1959, when the policy was first established. Today two-thirds of all C-BT contracts are open rated.

The new rates become effective January 1, 2014.

Contract Type	2011	2012	2013	2014
Irrigation	9.32	9.50	9.86	10
Municipal/Domestic	25.06	25.50	25.44	28
Industrial	25.06	25.50	25.44	28
Multi-Purpose	25.06	25.50	25.44	28

Northern Water
220 Water Ave
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CALENDAR

Colorado Water Conservation Board meeting

Nov. 19-20, 2013, Northern Water in Berthoud
www.cwcb.org

History of Colorado Water Law Workshop

Dec. 2, 2103, Colorado Water Congress in Denver
303-837-0812 or www.cowatercongress.org

Colorado River Water Users Association Annual Meeting

Dec. 11-13, 2013, Las Vegas
www.crwua.org

Four States Irrigation Council 61st Annual Meeting

Jan. 15-17, 2014, Fort Collins
www.4-states-irrigation.org

Colorado Water Congress Annual Convention

Jan. 29-31, 2014, Hyatt Regency Tech Center in Denver
303-837-0812 or www.cowatercongress.org

Water Tables 2014

Jan. 30, 2014, Hyatt Regency Tech Center in Denver
www.lib.colostate.edu/wt14

The Poudre Runs Through It 1st Annual Poudre River Forum

Feb. 8, 2014, Fort Collins
www.cwi.colostate.edu/thepoudrerunsthroughit

AWWA Sustainable Water Management Conference

March 30-April 2, 2014, Denver
www.awwa.org/conferences

