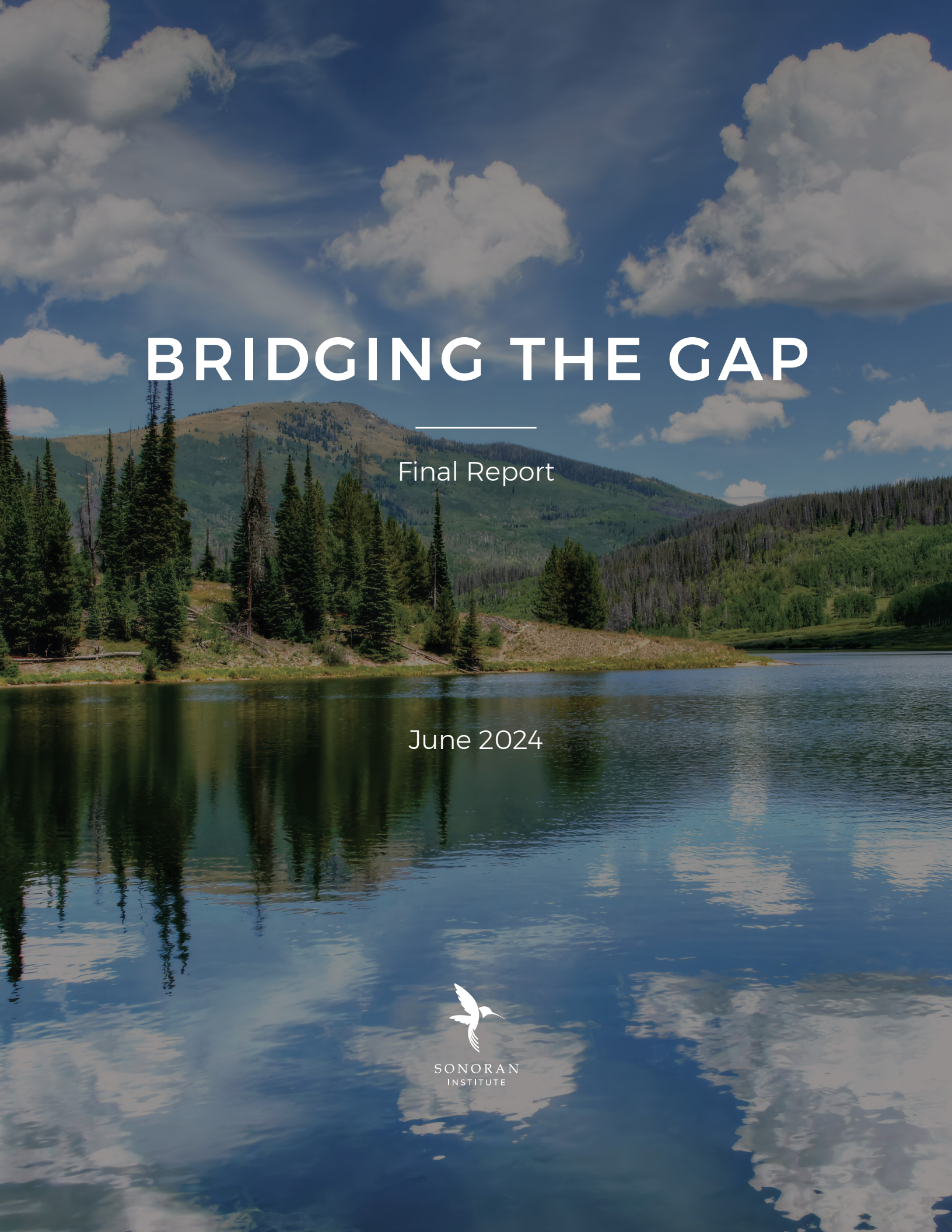

BRIDGING THE GAP

Final Report

June 2024

SONORAN
INSTITUTE

ACKNOWLEDGEMENTS

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PARTNER ORGANIZATIONS

Northwest Colorado Council of Governments

The NWCCG Water Quality/Quantity Committee comprises municipalities, counties, water and sanitation districts, and conservancy districts in the headwaters region of Colorado. QQ facilitates and augments member jurisdictions' efforts to protect and enhance the region's water resources while encouraging its responsible use. QQ is the only group of local governments in the state dedicated to water quality and quantity protection of Colorado's headwaters.

Colorado Water Conservation Board

The CWCB is a key steward of the state's water resources. Established to protect and allocate water for the benefit of Colorado's environment, economy, and communities, CWCB plays a vital role in water planning and policy. Through collaboration with diverse stakeholders, the board addresses water challenges, promotes conservation, and supports sustainable water management. With a focus on innovation and resilience, CWCB ensures the responsible use and preservation of Colorado's water resources for present and future generations.

Northern Colorado Water Conservancy District

Northern Water secures and distributes water for agricultural, municipal, domestic, industrial and environmental needs in Northeast Colorado. The district ensures water resilience through storage projects, conservation initiatives, and collaborative partnerships. We are committed to delivering water to Northeastern Colorado while continuing to plan for future water needs for our growing region.

Colorado River Water Conservation District

The Colorado River District leads in the protection, conservation, use, and development of the water resources of the Colorado River water basin for the welfare of the District, and to safeguard for Colorado all waters of the Colorado River to which the state is entitled. We aim to protect and enhance water supplies for agriculture, municipalities, and the environment through strategic planning, conservation, and collaboration.

Trout Unlimited

Colorado Trout Unlimited is an advocate for the state's coldwater fisheries and their ecosystems. Committed to conserving, protecting, and restoring these vital habitats, Trout Unlimited engages in advocacy, education, and on-the-ground projects. By promoting responsible angling practices and collaborating with communities and policymakers, Colorado Trout Unlimited works to ensure the health and sustainability of trout populations and Colorado's unique aquatic environment for future generations to enjoy.

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INTRODUCTION

When Colorado was founded in 1876 and the doctrine of prior appropriation was codified in the State Constitution, there was already a recognition that the West faced more limited water resources than other parts of the United States. At the same time, water was more plentiful historically than it is now. Scientists have established that the latest 20+ year drought was the driest period in the West in over 1,200 years, impacting water resources and making water more difficult to procure.

In the face of hydrologic variability, prolonged drought, shortages in water supply, severe depletion of storage in key reservoirs, and increased population growth in the Colorado River Basin, protecting existing water resources and developing water supplies for the growing population is becoming more challenging. Water transfers from agriculture to municipal uses from one basin to another continue to be identified as a way to meet growing municipal water needs as part of a broader portfolio of options that include water efficiency, conservation, and reuse. Of that portfolio, water transfers uniquely and almost invariably cause a degree of negative economic, social, and environmental impacts in the area from which water is taken.[1]

Discussions about possible water transfers are ongoing statewide, such as a project to move water from northeastern Colorado to upstream parts of the South Platte Basin, a long-contemplated project by Aurora and Colorado Springs to divert water from Eagle County, and a now-paused, developer-proposed transfer from the San Luis Valley to Douglas County.

PROJECT GOAL

"Bridging the Gap" is a project initiated by the Sonoran Institute and partner organizations that share an interest in avoiding or minimizing the negative impacts of water transfers. By gathering the experiences of key stakeholders from recent water transfer projects, we intend to bridge the gap in understanding between water suppliers investigating potential water transfers and communities that would be affected by such transfers to better highlight environmental and community challenges.

Bridging the Gap examines past experiences both 1) during long-range water supply planning that assesses potential water supply needs and alternatives to meet those needs, and 2) during project negotiations or permitting.

Bridging the Gap findings are not intended as a guide for water development or for opposition to water development. Rather, the findings are intended to inform and lead to better communication.

[1] David Getches, Interbasin Water Transfers in the Western United States: Issues and Lessons, National Research Council, Water Conservation, Reuse, and Recycling: Proceedings of an Iranian-American Workshop, 233, 237-38 (2005).

Sonoran Institute, in partnership with Northwest Colorado Council of Governments, Colorado Water Conservation Board, Northern Water, the Colorado River District, and Trout Unlimited, engaged a diverse set of water project stakeholders to examine past experiences with the long-range planning efforts that, in those instances, led to a water transfer project proposal and their experience with the complex permitting and negotiation processes that ensued once that project was proposed.

INTENDED AUDIENCE

The intended audience for this report is key stakeholders from communities seeking or benefiting from a proposed water transfer (referred to as "receiving communities" in this report) and those being impacted by a proposed water transfer project (referred to as "sending communities"). Among these communities, stakeholders include, but are not limited to:

- Local and state elected and appointed officials
- Project proponents, which may include municipal water providers and utilities, special districts, or third-party, for-profit water entities
- Water resource managers
- State agencies
- Economic development entities
- Non-profit and educational organizations
- Environmental and watershed groups
- Farmers, ranchers, and other agricultural interests
- Urban and regional land use planners
- Academic Institutions

SUMMARY OF KEY FINDINGS

The Bridging the Gap project resulted in the following four themes and key findings regarding the water transfer projects examined in BTG.

► Planning and Community Engagement

Early and transparent long-range water supply planning and community engagement efforts are important because they provide an opportunity to set the foundation for a shared understanding between project proponents and sending and receiving communities. These efforts address a historical lack of stakeholder awareness and understanding about the need for, and impact of, a proposed water project and situate a proposed water project within the broader portfolio of water supply management strategies, such as reducing water demand and increasing water reuse. Stakeholder education and outreach can help inform the planning process even though stakeholders may ultimately oppose a project.

Early planning and community engagement can help define the need for additional water supply, enable stakeholder feedback about options for meeting water supply needs generally, and help shape a water project if that is the determined approach.

► Permitting and Negotiated Agreements

Perspectives varied regarding the impacts of local, state, and federal permitting and environmental review processes on the effective consideration and mitigation of project impacts. Negotiated agreements can increase good will between proponents and other impacted stakeholders and lead to long term relationships and commitments and ongoing communication that ultimately leads to better outcomes for all. However, imbalances in resources, for example between sending and receiving communities or project proponents and community or environmental groups, can create disparities among parties' abilities to participate evenly in permitting, environmental review, or related negotiations.

► Stakeholder Involvement

Time and effort spent building trust and understanding differing perspectives and legal responsibilities, both during long-range water planning and once a water project is proposed, can aid in reaching agreement during negotiations. The negotiation process itself leads to relationship and trust building; developing shared understanding, interests, and values; and both sides having a vested interest in the outcomes. Shifts in organizational culture towards greater transparency and open discussion with stakeholders can lead to better outcomes for all parties involved and the environment. During negotiations, coordination among and joint commenting from aligned parties or stakeholders can improve permitting and negotiation outcomes, including recommended mitigation measures.

► Project Mitigation

Mitigation measures and processes that adapt to on-the-ground realities after a project is constructed (which is referred to herein loosely as "adaptive management"[2]) can be an effective mitigation option designed to be flexible and responsive to real-time changes in the aquatic environment and a range of climate change scenarios, as opposed to static mitigation measures based primarily on current predictions of future impacts. Adaptive management is most effective when it is based on locally-developed scientific studies that establish baseline conditions, and when it provides opportunities to hone mitigation strategies as projects move forward. Some negotiations related to proposed projects went beyond mitigating proposed project impacts to also addressing existing environmental degradation, often resulting from previously-permitted water transfer projects. These important commitments (called "enhancements" in some negotiations) were integrated into federal and local permit conditions alongside mitigation commitments. Project mitigation should also address socioeconomic, land management, and other ancillary impacts from a proposed project.

[2] In the past, project proponents used models and forecasted impacts to propose mitigation actions. In these cases, projects were never fully mitigated as intended because the proposed actions didn't account for the actual project impacts that existed after project construction and operations began. Adaptive management brings parties together in an ongoing commitment to ensure that the mitigation actions agreed to actually address the real, long-term impacts. The term "adaptive management," as used herein, is not related to the federal process also termed "Adaptive Management."

FIVE WATER TRANSFER PROJECTS EXAMINED IN BTG

Bridging the Gap focuses on five water transfer or storage projects:[3,4]

1. **Windy Gap Firming Project (WGFP)**
2. **Moffat Tunnel Collection System Expansion (Moffat)**
3. **Bessemer Ditch**
4. **Southern Delivery System (SDS)**
5. **Thornton Northern Properties Stewardship Plan (NPSP)**

The following is a short description of the five projects examined in Bridging the Gap. For more detailed project descriptions, see Appendix A. Each description below includes references to federal, state, and local permits and environmental review processes. For general background on water transfer project permitting and environmental review, see Appendix B.

These projects were chosen because they each involve, to varying degrees and at varying points in the history of the projects, the transfer of water from one river basin to another, or from one part of a river basin to another. Some projects involve agricultural to municipal transfers[5] (Bessemer, Thornton NPSP), while others brought water across the Continental Divide in what are referred to as transmountain diversions (WGFP, Moffat). The SDS Project provides for the reuse of water already historically transferred from agricultural to municipal use and across the Continental Divide via transmountain diversion.

Each project involved, or now involves some level of interaction between project proponents, federal and state agencies, local governments, and outside stakeholders with an interest in outcomes of project permitting and environmental review. At the same time, the projects were purposefully chosen because of their differences, including but not limited to:

- whether permitting was required (or not);
- whether any related litigation occurred;
- the types of impacts and environmental benefits realized from each project, especially when contrasting agricultural-to-municipal transfers and transmountain diversions; and
- the level of stakeholder involvement in project formulation.

[3] For an excellent overview of water transfers, see David Getches, *Interbasin Water Transfers in the Western United States: Issues and Lessons*, paper from Water Conservation, Reuse, and Recycling: Proceedings of an Iranian-American Workshop (2005).

[4] Because the SDS project was not permitted to store or convey new water rights, instead transferring existing water rights from Pueblo Reservoir to project proponents to fully utilize existing water rights, some interviewees stated they did not consider SDS to be a "water transfer project."

[5] There is ample research about alternatives to agricultural-to-municipal transfers (for example, reports from the Colorado Water Institute, Environmental Defense Fund, and WaterNow Alliance). Bridging the Gap focuses on permanent transfers from agriculture to municipal water supply.

WINDY GAP FIRMING PROJECT

Proponent: Northern Water Municipal Subdistrict

► Description

The Windy Gap Firming Project (WGFP) entails construction of a new storage reservoir on the Front Range, Chimney Hollow Reservoir, that would store Colorado River water from the existing Windy Gap Project's current water rights to improve reliability of the system. The Windy Gap Project operates in conjunction with the Colorado-Big Thompson (C-BT) system. Windy Gap is a reservoir located below the confluence of the Colorado and Fraser rivers. The project consists of new reservoir construction, new connections to C-BT East Slope facilities, and continued use of C-BT storage and conveyance systems and other existing pipelines, canals, and diversions to deliver Windy Gap water to the Northern Water Municipal Subdistrict. The Middle Park Water Conservancy District, which preserves, protects, and develops water resources and water rights in Grand and Summit Counties, is also able to fully utilize its share of Windy Gap water with completion of the WGFP.

► Key Permits, Environmental Reviews, and Agreements:

- § 404 Dredge and Fill Permit, from the US Army Corps of Engineers for construction of Chimney Hollow Reservoir, including:
    - WGFP 401 Certification (CO Dep't of Public Health and Enviro, 2016).
    - §122.2 Fish and Wildlife Mitigation Plan (Colorado Wildlife Commission, June 2011).
    - Grand County Conditional 1041 Permit for WGFP (2012).
    - Final Environmental Impact Statement (FEIS) and Record of Decision from US Bureau of Reclamation, prepared because of the change in operation for the federally-owned C-BT system and the need for a 404 Permit.
    - Several intergovernmental agreements (IGAs) with Grand County and Northern Water, such as an IGA that settled historic disputes over the Windy Gap Project, an IGA that resulted in ongoing adaptive management through Grand County Learning By Doing, and an IGA that established partnerships and partial funding for a channel to bypass flows around Windy Gap Reservoir to benefit the Colorado River. These IGAs were incorporated into the 1041 and federal permits.

► Litigation

Statewide and national Environmental groups that were not engaged in negotiations brought a legal challenge to the 404 Permit and NEPA process, which was settled and dismissed with a $15 million additional commitment from the Subdistrict towards a grant fund to implement habitat, river health, and water quality projects in the Colorado River headwaters.

MOFFAT COLLECTION SYSTEM/ GROSS RESERVOIR EXPANSION

Proponent: Denver Water

► Description

The Moffat Tunnel Collection System comprises the northern portion of Denver Water's raw water collection system. A complex series of tunnels and conveyances directs water from multiple western slope tributaries in the Williams Fork and Fraser watersheds, through the 6.1-mile-long Moffat Tunnel, under the Continental Divide, into South Boulder Creek, and eventually into Gross Reservoir in Boulder County.

The Moffat Tunnel Collection System Expansion Project ("Moffat Project") involves the enlargement of Gross Reservoir. The project will provide Denver Water with additional storage of water from the Upper Colorado, Williams Fork, and Fraser watersheds in Grand County through Denver Water's existing collection system. The stated purpose of the project is to provide additional firm water supplies from the northern portion of its delivery system in order to increase flexibility and reliability in a system that currently relies heavily on the southern portion of its delivery system.

► Key Permits, Environmental Reviews, and Agreements:

- § 404 Dredge and Fill Permit (US Army Corps of Engineers, 2017), including:
    - § § 401 Water Quality Certification (Colorado Department of Public Health and Environment, 2016).
    - § §122.2 Fish and Wildlife Enhancement Plan (Colo. Parks and Wildlife, 2011).
- Final Environmental Impact Statement (FEIS) and Record of Decision from US Army Corps of Engineers.
- Colorado River Cooperative Agreement with 26 west slope jurisdictions that settled litigation and provided benefits to mitigate west slope impacts of water transfers (2012).
- Grand County Learning By Doing IGA (2012).
- US Forest Service Settlement Agreement (2016).
- Federal Energy Regulatory Commission (FERC) Hydropower License Amendment (2020).
- Boulder County 1041 settlement agreement in lieu of a 1041 permit for the Gross Reservoir expansion (Nov. 2021).

► Litigation

- Litigation with environmental groups over the issuance of the 404 permit and NEPA process is ongoing, with a recent decision from the 10th Circuit Court of Appeals sending the case back to the US District Court.
- Denver Water facial challenge to Boulder County's 1041 Permit Authority but eventually entered into a settlement agreement in lieu of a 1041 permit for the Gross Reservoir expansion.

BESSEMER DITCH

Proponent: "Pueblo Water,"
City of Pueblo's municipal water provider

► Description

The Bessemer Ditch irrigates approximately 18,000 acres of farmland. A group of farmers served by the ditch initiated a sale of water interests and Pueblo Water, under threat of potentially losing access to this resource to other buyers, determined to purchase the supply. Pueblo Water purchased approximately one third of Bessemer-irrigated farmland, eventually to be permanently fallowed for public drinking water supply.

Community members and NGOs in the community around the Bessemer Ditch developed an approach to the pending transfer that would avoid adverse buy-and-dry outcomes seen in other communities and improve agricultural, environmental, and economic outcomes in light of the pending transfer. A report commissioned by the Rocky Mountain Farmers Union (RMFU) and the Palmer Land Trust, *Navigating the Wake of Municipal Water Sales* ("*Navigating Water Sales*"), identifies pathways to retain a resilient agricultural base while guaranteeing Pueblo Water its full yield of municipal water.

The report identifies a management strategy for the water transfer that can improve land use patterns, promote economic opportunity, improve environmental conditions, foster intra-regional cooperation, and advance innovative water management practices that benefit farms and cities. Recommendations include:

- Preserve the best farmland.
- Substitute other parcels for dry-up.
- Enable water exchanges between designated Dry-Up Candidate Areas and Critical Production Areas through the water court change case.
- Fallow strategically and pursue fallowing alternatives.

► Key Permits, Environmental Reviews, and Agreements:

- 1041 permit from Pueblo County Board of County Commissioners (not yet applied for as of April 1, 2023). The above study and follow-up economic studies may inform a 1041 application.
- Decree of the Water Court for changes in use from irrigation to municipal.

► Litigation

None

SOUTHERN DELIVERY SYSTEM

City of Colorado Springs, City of Fountain, Security Water District, and Pueblo West Metropolitan District.

► Description

The Southern Delivery System (SDS) is a regional water storage and pipeline delivery system constructed by Colorado Springs Utilities (CS Utilities) on behalf of the project proponents. The SDS Project delivers existing CS Utilities' water rights, stored in Pueblo Reservoir, through newly-constructed pipelines to treatment and distribution facilities in Pueblo West and in El Paso County for use by project participants. By increasing the delivery capacity of fully consumable water from Pueblo Reservoir to the project participants, SDS also provides for increased reuse and exchange of those fully consumable water rights to meet current and future municipal water demands. Beginning operations in 2016, SDS is designed to help meet the water supply conveyance and management needs of the project participants through 2046.

The project includes construction and operation of the following components:

- Utilization of 42,000 acre-feet of long-term excess capacity storage in Pueblo Reservoir (an east slope facility of the federal Fryingpan-Arkansas project) to store a mix of non-Fry-Ark imported (i.e. transmountain) and in-basin water rights.
- A 53-mile raw water pipeline (66- and 72-inch diameter) and three pump stations that will convey up to 78 million gallons of water per day.
- Bailey Water Treatment Plant providing 50-mgd capacity for municipal uses.
- Phase 2 of SGS includes additional components that are scheduled for implementation when daily demands require SDS use in excess of 20-mgd, which is not anticipated before 2026.

► Key Permits, Environmental Reviews, and Agreements:

- 1041 Permit from Pueblo County (2009).
- Final Environmental Impact Statement (FEIS) and Record of Decision from Bureau of Reclamation to change water conveyance contracts in Pueblo Reservoir (2009).
- Pueblo Flow Management Agreement (initially voluntary, integrated into the 1041 permit).
- Pueblo Low Flow Agreement (integrated into the 1041 permit).
- Colorado Wildlife Commission Fish and Wildlife Mitigation Plan (122.2 plan).
- Pueblo County/ CO Springs Stormwater IGA (alternative path to possible revocation of 1041 permit)(2016).

► Litigation

Colorado Springs Utilities unsuccessfully challenged the applicability of Pueblo County's 1041 regulations to its project. *Colorado Springs Utilities v. Pueblo County*, 147 P.3d 1 (Colo. 2006); Order Granting Mot. Summ. J. Nov. 8, 2007, Case No. 06CV438 Div. B (Pueblo Co Dist. Ct.). Described in more detail in Appendix A.

THORNTON NORTHERN PROPERTIES STEWARDSHIP PLAN

Proponent: City of Thornton

► Description

The City of Thornton owns 18,751 acres of farmland in Larimer and Weld counties. The City acquired the land and associated water rights in 1985 and 1986 to apply the water rights to future municipal use. In 1998, Thornton received its court decree changing from agricultural to municipal use. Thornton plans to develop municipal water supplies from these lands from approximately 2025 to 2065. The City anticipates maintaining only minimal land ownership after that time.

In 2019, the City commissioned development of the Northern Properties Stewardship Plan (NPSP), to "identify the best long-term uses (as well as interim management and ownership transition strategies)" for the City-owned farmland. Foundational work is ongoing and includes: 1) internal planning with City of Thornton representatives, (2) interviews with Larimer and Weld county subject matter experts (SMEs), (3) preliminary landscape analyses, and (4) meetings with individuals and small groups. Ongoing next steps include a regional land use assessment and water optimization study.

► Key Permits, Environmental Reviews, and Agreements:

- Decrees of the Water Court for changes in use from irrigation to municipal.
- 1041 permit for pipeline construction through Larimer County (denied, see below and Appendix C for more information).
- Special use permits in Weld County, which Weld County denied. Thornton subsequently overruled the denial of the special use permits under Colo. Rev. Stat. § 30-28-110(1)(c).[6]
- No federal permits required at this time.

► Litigation

Portions of the infrastructure that will allow Thornton to use its water rights requires a 1041 permit for pipeline construction through Larimer County. The County denied Thornton's permit request and Thornton sued the County in district court. The County's decision was upheld by the District Court and Court of Appeals. Thornton has decided not to appeal to the Colorado Supreme Court and believes the time it would take for such an action is better spent engaging with Larimer County and its community on solutions amenable to the people of both jurisdictions.

[6] C.R.S. § 30-28-110(1)(c)("If the public way, ground, space, building, structure, or utility . . . does not . . . fall within the province of the board of county commissioners . . . the commission's disapproval may be overruled by said body [not within county jurisdiction].")

DIALOGUE PROCESS

The Bridging the Gap dialogue process progressed through three phases: 1) interviews with stakeholders who had participated in the five projects analyzed; 2) an initial convening of interviewees and subject matter experts to discuss common themes; and 3) a second convening to review and endorse this final report.

Interviewees represented a diverse range of interests, including water project proponents, local governments, environmental and community groups, and agricultural interests. A total of 17 interviews were conducted between July 2021 and January 2023. Several interviewees represented multiple projects or interests. Interview questions were tailored for different types of stakeholders and interests represented. The goal was to examine interviewees' past experiences with long-range planning processes that could lead to a water transfer project proposal and the complex permitting and negotiation processes once a project was proposed. See Appendix C for the list of interviewees. See Appendix D for the list of interview and post-interview questions.

Following individual interviews, Bridging the Gap partners compiled and summarized key observations based on trends and points of consensus from interviews. The final summary document was sent to convening invitees to provide background and spur thoughtful discussion with the key observations organized into four topics or themes: project conceptualization, permitting, stakeholder processes, and mitigation.

The first convening, which occurred virtually on April 29, 2022, invited all interviewees and key subject matter experts to discuss and provide feedback on the key observations that arose from the interviews (agenda available here). Participants discussed the key observations in two break-out groups of approximately six individuals representing a mixture of backgrounds and expertise. In their break-out groups, participants prioritized key observations and highlighted points of contention where various perspectives did not find consensus. Participants were also able to provide feedback after the convening.

The second convening occurred virtually on June 6, 2023, where participants discussed and suggested updates to the draft of this report (agenda available here). Participants were divided into two break-out groups to facilitate constructive dialogue prompted by questions aimed at identifying remaining points of disagreement and findings that needed greater emphasis. Participants also suggested communities and audiences that might benefit from presentations about this report, as well as appropriate venues to present the final results. Feedback received during and immediately following the second convening was incorporated into this report, as appropriate.

FINDINGS

Interviews with stakeholders and discussions during the convenings illuminated key findings that can be grouped into four themes:

1. **Planning and community engagement.**
2. **Permitting and negotiated agreements.**
3. **Stakeholder involvement.**
4. **Project mitigation.**

Within each theme, views differed based on the perspective, geographic location, and priorities of the interviewee. This report seeks to memorialize and convey areas of general agreement as well as disagreement.

► Planning and Community Engagement

BTG participants agreed that educating stakeholders and the public on long-range water supply planning and long-range community planning was foundational and highly beneficial. It is especially important, as BTG participants emphasized, for evaluation or planning for water projects.

Planning, education, and engagement efforts can address what some participants stated was a **general lack of awareness, lack of understanding, or general skepticism about the need for a proposed water project**. For example, participants observed that community members that may be served by a proposed water project often have significant gaps in understanding of where their water comes from and are unaware of the tradeoffs or impacts of a new project proposed by their water provider on the environment, economy, or on other communities. Similarly, stakeholders and the public from both sending and receiving communities may be unaware of the existing water management practices that are implemented by water providers to maximize supplies. For instance, some communities and water providers may be approaching the practical, legal, or cost-effective limits of reuse, conservation, and other water management tools.

BTG participants highlighted challenges to engaging stakeholders and the public, such as **confidentiality requirements during negotiations**, but generally agreed that **transparency and engagement could set the foundation for a shared understanding of values, needs, options, existing conditions, and projected conditions** if or when a project were to be approved and constructed. Opposition to a proposed project may remain, but comments generally supported engagement to establish a more comprehensive understanding of the needs for and impacts of the water project alongside the full range of options for community water supply planning.

Participants felt **stakeholder input is most valuable when received early and throughout water supply planning and project proposal development.** Project proponents can engage in dialogues about potential project impacts, both with sending and receiving communities. Water

projects can then consider projected impacts and integrate mitigation measures to address such impacts early in the planning stages of the process. Early engagement can also be helpful in broadening project concepts to make better use of existing systems and provide greater operational flexibility that results in meeting multi-purpose interests and benefits.

Some reflected that **mitigation could have been integrated earlier in the planning processes** for various water projects. Citizen advisory groups that support the development of Integrated Water Resource Management Plans are excellent ways to foster early and meaningful engagement. For instance, having one or more advisory group members from the "sending basin" builds understanding as well as credibility for the process.

Both sending and receiving communities need to **develop long-range plans.** For example, all stakeholders benefit from communities engaging in long-range land use planning that uses water efficiently and strategically as their communities grow and change. For sending communities, long-range plans may address socioeconomic and environmental impacts of proposed water transfers and other water projects. Communities with historic transmountain diversions may focus their planning efforts on the health and sustainability of rivers and watersheds, increased treatment costs due to reduced flows, and the economic ramifications of environmental degradation.[7] Participants noted that communities experiencing losses of irrigated lands due to agricultural-to-municipal transfers should plan for the loss of agricultural production, revegetating and managing the land, and mitigate socio-economic shifts such as unemployment in farm-dependent businesses, reduced tax revenue, and environmental impacts like wind erosion on fallowed lands.[8] Assessments of current conditions, management plans, and local regulations can help identify and prioritize values that may be at risk if a potential water project is proposed and evaluate whether, and under what conditions, mitigation of project impacts is possible.

► Permitting and Negotiated Agreements

Participants generally agreed that **imbalances in resources created disparities among parties in the ability to participate evenly in negotiations**, such as funds to hire external legal and technical expertise, internal staffing, expertise, or political "clout." While some local regulations address this to some extent by requiring that project applicants pay for local governments to hire outside expertise to review project impacts and proposed mitigation strategies, local governments without permitting authority, environmental and community groups, and agricultural interests do not have access to such resources.

Participants held differing perspectives regarding the effectiveness of local, state, and federal permitting and environmental review processes in mitigating project impacts.[9] Some stated that state and federal permitting and

[7] Coley/Forrest Inc., Water and its Relationship to the Economies of the Headwaters Counties, Northwest Colorado Council of Governments (December 2011).

[8] WaterNow Alliance, Alternative Transfer Methods: Flexible & Innovative Water Supply Alternatives, (May 2019) at 6.

[9] 9 See Appendix B for an overview of common federal, state, and local permitting and environmental review processes for water transfer projects, including those mentioned specifically in this section (NEPA, 1041 regulations).

environmental review have had a limited or rigid role in identifying or mitigating local impacts of water transfer projects. Further, a BTG participant indicated that tighter timelines and other changes, especially with environmental review under the National Environmental Policy Act (NEPA), had adversely impacted the development of meaningful mitigation of project impacts. Some remarked that some permitting processes lacked the ability to fully encompass the agreements made during negotiation processes or to address compounding impacts from previous projects. Others expressed that state and federal permitting and environmental review did effectively mitigate local impacts in the projects under discussion.

Much of the Bridging the Gap discussion focused on regulations at the local government level, especially 1041 regulations. Again, BTG participants held differing views. Generally, **participants who emphasized the value of 1041 regulations were from areas impacted by water projects, where those most negative about 1041 regulations were primarily those who had sought a 1041 permit.**

Participants from sending communities and environmental and community groups considered 1041 regulations to be an effective tool for addressing local environmental and socio-economic impacts of a project, and reflected on the elevated role local governments had in project permitting and mitigation of project impacts with 1041 authority in place. Some also noted that, although not uniformly practiced, local 1041 permits can be purposefully crafted to fit with federal 404 permit regulations, allowing for use of similar information, reduced duplication, and better integration of both processes.[10] In the projects examined for BTG, negotiations between a proponent and permitting county reduced litigation over the 1041 permit. Litigation still occurred between Denver Water and Boulder County regarding Gross Reservoir Expansion, and with environmental groups who were not involved in negotiations over permitting for Gross Reservoir Expansion and Windy Gap Firming Project (see Appendix A for more information).

Participants who had sought 1041 permits indicated that uncertainties regarding scope and applicability of the 1041 regulatory process can result in excessive costs, extended deadlines, and mitigation requirements that go beyond addressing the actual impacts of the project; that there is not consistency in local application of 1041 regulations; and that decision makers may not possess expertise in this area. Further, project applicants typically experienced the federal process, when applicable, as extensive and providing significant opportunities for input from sending communities and the public at large, which they felt resulted in permit conditions to address the noted concerns.

Initiatives such as the 2017 Water Supply Planning and Permitting Handbook developed by the State of Colorado identify opportunities for improving the permitting and environmental

[10] For example, the Northwest Colorado Council of Governments Water Quality/Quantity Committee developed a comparison chart of local, state, and federal approval criteria and application materials for water projects, dated July 22, 2016, available at https://www.dropbox.com/scl/fi/ebkfakqjxluq90k3jxp7n/201607022_local_state_fed_permit_comparison.pdf?rlkey=wo2g0vmv jgxew9tm6ept00imr&dl=0.

review processes for better outcomes for project proponents and communities impacted by water projects, and confirms BTG's findings regarding the importance of inclusion of diverse stakeholders in the project planning phase prior to seeking federal permits.

The BTG dialogue confirmed that views about the efficacy of permitting vary across water project proponents and stakeholders from areas where water is coming. There may be future opportunities to identify approaches to project permitting that achieve mutual goals of time and cost efficiency and avoidance or mitigation of project impacts.

Participants highlighted that **negotiated agreements or intergovernmental agreements (IGAs) were effective tools that increased good will between proponents and other impacted stakeholders and led to long-term relationships and commitments that resulted in better outcomes for all.** Several examples derived from the BTG studied projects include:

- The Colorado River Cooperative Agreement (CRCA) between Denver Water and 26 west slope entities served to resolve several existing and potential legal issues in one large agreement. It also provided money and water to headwaters counties that have witnessed degradation of stream systems from historic out-of-basin diversions.
- The Windy Gap Firming Project included several IGAs that addressed mitigation and enhancement of the environment including, for example, a funding agreement to construct a river channel around Windy Gap Reservoir to improve river health.[11]
- The Grand County Learning By Doing Adaptive Management IGAs, executed by project proponents Northern Water and Denver Water and west slope parties, created a "cooperative, iterative and on-going process to maintain, and when reasonably possible, restore or enhance the aquatic environment in the Colorado, Fraser, and Williams For River Basins."[12]
- A Stormwater IGA between Colorado Springs and Pueblo County, which further addressed permit conditions in the Pueblo County's 1041 regulations for the Southern Delivery System project, and committed payments for Fountain Creek stormwater mitigation as well as ongoing adaptive management to determine the use of such funds, helped meet permit conditions and avoid a permit revocation or potential litigation.

In the above examples, IGAs offered enhancements that addressed existing adverse conditions in a community or river system, not just impacts from a proposed project. Participants felt that such agreements contributed positively to the project process and outcomes, and were a potential avenue to avoid or resolve litigation.

[11] As of this final report, construction has been initiated on the "Windy Gap Connectivity Channel" envisioned in the funding agreements: https://coloradosun.com/2022/08/26/colorado-river-windy-gap-dam-fixes-error/.

[12] IGA for the Learning By Doing Cooperative Effort, entered between Northern Water, its Municipal Subdistrict, Grand County, Middle Park Water Conservancy District, and the Colorado River District, executed in 2013. A parallel IGA was also signed with Denver Water and the same west slope parties in 2013.

Participants also noted the long time horizon of some projects, and the need to **record the broader context and details behind elements of the agreement and train incoming staff** in order to reduce the risk that such background information is only retained by the original negotiators of the agreement.

► Stakeholder Involvement

All BTG projects studied included stakeholder involvement to some degree, and communication and collaboration played an important element in project outcomes.

Looking internally at organizational mission and operations, participants shared experiences in which **shifts in organizational or local government culture**, such as senior leadership prioritizing greater transparency and open discussion with external stakeholders during negotiations, led to better outcomes. One such example was the attitudinal shift that let to agreement to engage in adaptive management[13] as a form of project mitigation that involved an ongoing commitment to long-term partnership with other entities to address project impacts and implement enhancements. Even after the project was underway, shifts in culture were also noted to reinvigorate an organization's dedication to honoring the intent behind historic agreements.

Most reflected that **additional time spent on relationship- and trust-building paid off in successes gained during the negotiation process.** It was challenging for parties to a negotiation or permitting process to understand the "other side's" goals, experiences, perspectives, and desired outcomes during negotiations. To address this, one BTG project included facilitated mock negotiations where each party was assigned another party's role in negotiations to help with this relationship-building. The negotiation process itself ultimately led to relationship and trust building; developing shared understanding, interests, and values; and both sides having a vested interest in the outcomes. After reaching a resolution, neither side typically wanted to walk away because of the work they had put into the process to arrive at a fair compromise.

Some permitting and negotiation processes were aided by the ability of reasonably aligned parties to coordinate with one another to **speak with a unified voice.** For example, during permitting and negotiations for the Windy Gap Firming Project, Grand County, the Colorado River District, NWCCOG, and Trout Unlimited provided joint comments to federal agencies and project proponents whenever possible. Grand County also worked to coordinate all of the municipalities, special districts, and other interest groups in the County. This helped avoid the common challenge of addressing a myriad of stakeholders and disparate comments. Moreover, receiving a high volume of uncoordinated perspectives and comments left parties attempting to resolve too many issues, thereby leaving parties in weakened bargaining positions. In some projects, local governments and environmental and community groups submitted joint comments whenever possible to speak with a unified voice. Conversely,

[13] The term "adaptive management," as used herein, is not related to the federal process also termed "Adaptive Management." *See* fn 1.

individuals within a stakeholder group, such as agricultural interests, were sometimes incorrectly assumed to have a shared perspective, which led to shortcutting a robust outreach process.

Parties to a negotiation or permitting process struggled at times to **balance convening confidential negotiations and maintaining or gaining stakeholder trust** in the process. In particular, keeping elected officials and the public apprised of progress and priorities in negotiation was difficult when negotiations needed to be kept confidential due to pending permit applications. Similarly, they noted that the need for confidentiality in the early stages of a proposed project's development meant that potentially impacted communities were placed at a timing disadvantage by not being made aware of proposed projects until later in the process.

Project proponents and local governments serving agricultural communities often **lacked existing relationships or established means of dialogue with farmers and ranchers** in the community to support farming and ranching in the region if the purchase of agricultural water rights was being proposed.

Agricultural to municipal transfers pose further opportunity to **integrate socioeconomic impacts into project negotiations and permitting.** Projects that involved conversion of water rights from agricultural to municipal uses had far-reaching economic, social, and groundwater resource impacts that were not generally addressed through traditional buyer and seller dynamics.

It was noted that when a project proponent purchases water rights from a willing agricultural property owner, neither the project proponent, the local government, nor the agricultural community is in a direct position to broker alternative transfer management approaches that could preserve the most productive agricultural lands and reduce economic impacts to the community resulting from shuttering operations. In some cases, such as the Bessemer Ditch water transfer and the Northern Properties Stewardship Plan, analysis was undertaken after the sale commenced. An increased understanding of these complex dynamics and relationship-building with community members in the areas where water would be taken can help address project impacts before agricultural land and water rights are sold.

► Project Mitigation

BTG participants observed that **project mitigation addresses impacts most effectively if it is flexible and responsive to changing conditions and incorporates a range of scenarios based on a changing climate.** BTG participants shared thoughts about the challenge of mitigating proposed projects, especially given climate change's accelerating impact on rivers and water resources. Mitigation should not be fixed, locking stakeholders into one approach. Instead, the approach needs to be flexible and acknowledge stakeholders' ongoing management relationship where challenges and benefits are shared mutually.

Rather than using models and forecasted impacts to propose mitigation actions, adaptive management[14] brings parties together regularly in an ongoing commitment to ensure that the mitigation actions agreed upon in fact address the actual impacts of a project over a long-term planning horizon. Basing mitigation approaches on locally-developed scientific studies, such as stream management plans or integrated water resource management plans, can be helpful to establish baseline conditions and to meaningfully discuss projected and on-the-ground changes from the baseline as a project progresses.

Some projects studied (Windy Gap, Moffat, SDS) were able to **successfully develop tools that may more effectively address existing environmental problems while mitigating anticipated project impacts.**

Where such projects are not yet constructed, the ability of those tools to address actual project impacts is unknown. Sending communities often already faced environmental degradation from historic water transfer projects or other development practices. These communities desired that the conditions of permitting or negotiated agreements also addressed existing environmental degradation caused by existing projects along with mitigation of the newly proposed project. Many negotiated agreements for water transfer projects or expansions were able to do both to varying degrees.

[14] The term "adaptive management," as used herein, is not related to the federal process also termed "Adaptive Management." *See* fn 1.

CONCLUSION

Bridging the Gap draws from the experiences of prior water transfer projects to bridge the gap in understanding between water suppliers and communities benefiting from, or impacted by, water supply planning that may include a proposed water transfer. Lessons learned from prior water projects are summarized in the report's key findings. In this conclusion, additional commentary is provided aimed at both sending and receiving communities and permitting agencies as to what steps may facilitate and improve communication around water transfer projects. Sonoran Institute also describes some steps it will take to communicate to stakeholders around the report's findings.

For both sending and receiving communities, there is considerable due diligence that should be undertaken that addresses general stakeholder awareness and understanding about the need for any proposed water project, including proposed water transfers.

First and foremost is the need for local long-range planning around water supply and demand. Such planning should consider alternative water management scenarios and their impact on future water supply-demand gaps, as well as outline steps to safeguard existing supplies and reduce demand through water conservation, efficiency, and reuse. Any proposed water supply project, including water transfers, should be considered in the context of all other steps being evaluated and instituted to address future local water supply-demand gaps.

Second, sending and receiving communities should engage in planning that articulates the values of rivers, watersheds, lands, and economic sectors likely to be impacted by any water project. The resulting plans—comprehensive plans, river or watershed management plans, land stewardship plans, or economic and ecological impact analyses, for example—should describe and prioritize local values, identify potential impacts to these values, and explain how these values will be protected.

Third, sending and receiving communities should consider enacting local regulatory measures, such as water-saving codes and standards for new development or 1041 regulations, well in advance of any new proposed project. 1041 regulations should be coordinated with federal and state permit requirements as much as possible.

All of these planning and regulatory processes, if properly designed, offer significant opportunities to educate key stakeholders and the general public on local values, concerns, and context that can inform consideration of, and if approved, adequately mitigate the impacts of future water projects.

Furthermore, the Colorado Water Conservation Board (CWCB) in their 2023 Colorado Water Plan, is committing to the following Agency Actions:

- 1.1: Define, benchmark and institutionalize water-saving communities.
- 1.10: Create a positive discussion space for tough conversations on analyzing transmountain diversion projects in the Technical Update.
- 2.3: Expand the scale of collaborative water sharing agreements.
- 2.4: Streamline collaborative water sharing agreement guidance across agencies.
- 2.5: Support the integration of robust agriculture into local government planning.
- 2.6: Assess the economic opportunities of avoided buy and dry to communities, ecosystems, and recreation.

These actions are consistent with the goal of Bridging the Gap in understanding between water suppliers and communities benefiting from or impacted by water supply planning that may include a proposed water transfer. There is a need for forums and resources for elected officials, water providers, and other key stakeholders around collaborative planning to address water supply-demand gaps. CWCB can play an important role in this regard.

Looking ahead, Sonoran Institute will conduct a series of presentations to local and state officials, including city or county "work sessions," state hearings or advisory committee/board meetings to present findings from the Bridging the Gap report. These presentations will solicit feedback in terms of the types of resources, training, and technical assistance communities may need to both carry out the planning described above and how communities can explore ways to collaborate in addressing water supply-demand challenges.

In closing, Sonoran Institute and our partners for the Bridging the Gap project—Northwest Colorado Council of Governments, Colorado Water Conservation Board, Northern Water, the Colorado River District, and Trout Unlimited—recognize that as Colorado faces greater uncertainty in the reliability of its water supply, communities face a challenge and opportunity to effectively engage in holistic and sustainable water resource management. With proper due diligence and planning, local governments can advance more collaborative approaches and effective engagement to address water supply-demand challenges.

APPENDIX A: PROJECT DESCRIPTIONS

Below are descriptions of the water transfer projects[15] that were studied in the Bridging the Gap project. These descriptions are only for use in summarizing projects for Bridging the Gap and should not be used for other purposes.

For each project, the summary includes the following points:

- Project Proponent
- Project Pescription
- Project Need/Purpose
- Key Permits and/or Negotiated Agreements
- Summary of Projected Impacts
- Summary of Environmental Commitments (if applicable)
- Summary of Related Litigation
- Additional Resources (if applicable)

Quick links to project descriptions:

- Windy Gap Firming Project
- Moffat Collection System/ Gross Reservoir Expansion
- Bessemer Ditch
- Southern Delivery System
- Thornton Northern Properties Stewardship Plan

PERMITS & PROCESSES

For background information on the most common types of federal, state, and local permits and environmental review processes, see Appendix B.

[15] Because SDS was not permitted to store or convey new water rights, instead transferring existing water rights from Pueblo Reservoir to project proponents to fully utilize existing water rights, some interviewees stated they did not consider SDS to be a "water transfer project."

WINDY GAP FIRMING PROJECT (WGFP)

Proponent: Northern Water Municipal Subdistrict

► Description

Windy Gap is a reservoir constructed in 1985 on the western side of the Continental Divide, below the confluence of the Upper Colorado and Fraser Rivers. Because of existing constraints within the Colorado-Big Thompson (C-BT) transmountain diversion system, such as storage capacity in Granby Reservoir and delivery capacity at Adams Tunnel, the original Windy Gap Project was unable to deliver the anticipated yield of water from the 1985 project.

The Windy Gap Firming Project (WGFP) entails construction of a new storage reservoir on the Front Range, Chimney Hollow Reservoir, that would store water from the existing Windy Gap Project's current water rights to improve reliability of the system. The Windy Gap project operated in conjunction with the C-BT system. The additional reservoir will allow Windy Gap facilities to deliver additional water planned under the original 1985 Windy Gap project. The project consists of new reservoir construction, new connections to C-BT East Slope facilities, and continued use of C-BT storage and conveyance systems and other existing pipelines, canals, and diversions to deliver Windy Gap water to the Municipal Subdistrict.[16]

► Project Need/Purpose

According to the WGFP EIS, there are two distinct water user groups benefiting from the Windy Gap Firming Project:

1. **Northern Water Municipal Subdistrict.** WGFP will deliver a firm annual yield of about 30,000 AF of water from the existing Windy Gap Project to meet a portion of the water deliveries anticipated from the original Windy Gap to meet a portion of the existing and future demands of the Project Participants.
2. **Middle Park Water Conservancy District (MPWCD).** WGFP will enable MPWCD to fully utilize 3,000 AF of Windy Gap water supplies to provide water wholesale to water providers and users in Grand and Summit counties. The water providers include towns, water districts, subdivisions, homeowner associations, private individual homeowners, agricultural water suppliers, and ski areas.[17]

► Key Permits, Environmental Reviews, and Agreements

- § 404 Dredge and Fill Permit, including:
  - WGFP 401 Certification (CO Dep't of Public Health and Enviro, 2016)
- §122.2 Fish and Wildlife Mitigation Plan (Colorado Wildlife Commission, June 2011)

[16] WGFP Environmental Impact Statement (EIS) at 1-1.

[17] Two-thirds of MPWCD water sales go to Grand County Water and Sanitation District, Snake River Water District, Summit County, Breckenridge, Fraser, Frisco, Granby, Kremmling, Silverthorne, and Winter Park Water and Sanitation District.

WINDY GAP FIRMING PROJECT (WGFP), *CONT.*

- NEPA Final Environmental Impact Study (FEIS) and Record of Decision (US Bureau of Reclamation)
- Revised Bureau of Reclamation Carriage Contract
- Grand County Conditional 1041 Permit for WGFP (2012)
- WGFP Intergovernmental Agreement (IGA) (2012)
    - Signatories include Northern Water Municipal Subdistrict, Grand County, NWCCOG, the Colorado River District, and Middle Park Water Conservancy District.
- WGFP Learning By Doing Intergovernmental Agreement (2012)
    - Signatories include Northern Water, Northern Water Municipal Subdistrict, Grand County, Middle Park Water Conservancy District, and the Colorado River District. (Note: Denver Water signed a similar IGA with West Slope parties as part of the Moffat Collection System/ Gross Reservoir Expansion.)
    - IGA commits parties to the Learning By Doing Cooperative Effort, an ongoing participation in a cooperative, iterative process to maintain and, when possible, restore or enhance the aquatic environment in the Colorado, Fraser, and Williams Fork River basins upstream of the confluence with the Blue River. The IGA lays out the terms of this collaborative process and the overarching governance structure.
- Grand Lake Clarity MOU (2012)
    - Signatories include Northern Water, the US Bureau of Reclamation, Grand County, Northwest Colorado Council of Governments, and the Colorado River District.
    - Establishes an adaptive management process to evaluate alternatives to improve clarity in Grand Lake (part of the C-BT system and the largest natural lake in Colorado).
- Windy Gap Bypass Funding Agreement (2012)
    - Signatories include Northern Water, Grand County, Trout Unlimited, and the Upper Colorado River Alliance.
    - Northern Water committed $500,000 for engineering and permitting and $2,000,000 for the construction of a bypass channel, for the Colorado River to flow around Windy Gap Reservoir, now called the Colorado River Connectivity Channel. See environmental commitments, below, for more information.

▸ Litigation

- ***Save the Colorado et al. v. U.S. Bureau of Reclamation et al.***, Case No. 21-1036 (10th Circuit) and Municipal Subdistrict, Northern

WINDY GAP FIRMING PROJECT (WGFP), *CONT.*

Colorado Water Conservancy District as Intervenors.

- Environmental groups sued federal agencies over various parts of 404 Dredge and Fill Permit issuance and NEPA Environmental Impact Statement analyses.
- Environmental groups were not successful in US District Court, and the environmental groups appealed to the 10th Circuit.
- The suit was settled in 2021. Northern committed to $15,000,000 staggered payments to be used for "the design, construction and maintenance of projects to improve a) aquatic habitat, b) riparian habitat, or c) water quality" in Colorado headwaters area impacted by WGFP. In exchange, environmental groups filed to dismiss their suit.
- Grand County, NWCCOG, and the Colorado River District filed a joint amicus brief in support of the federal agencies at US District Court level.

▸ Projected Impacts

Projected impacts from WGFP include:

- Reduced streamflows below WGFP, which can result in, for example:
  - Increased stream temperature,
  - Changes to the aquatic habitat and riparian areas, and
  - Reductions in flushing and channel maintenance flows.
- Increased pumping through the CBT system, including through Grand Lake which already suffers from reduced clarity, and concerns about corresponding increases in nutrients in the Three Lakes System.

▸ Environmental Commitments

- Colorado River Connectivity Channel:
  - As part of the WGFP permitting, historical impacts of the original Windy Gap Project were evaluated, including the loss of river connectivity following construction of the original Windy Gap Reservoir. Municipal Subdistrict, which owns and operates the Windy Gap Project, agreed to decrease the reservoir's footprint and construct a connecting channel around the reservoir capable of passing water, fish and sediment, thereby reconnecting miles of the Upper Colorado and Fraser rivers.
  - The groundbreaking for construction of the channel occurred August 23, 2022.
- Northern Water's other commitments to address existing conditions, referred to as "enhancements," include:
  - Curtail or reduce diversions when stream temperature standards are exceeded or during low-flow periods
  - Provide flushing flows of 600 cubic feet per second (cfs) every three years (150 cfs more than the original Windy Gap mitigation)

WINDY GAP FIRMING PROJECT (WGFP), *CONT.*

- Create flushing flows of 1,200 cfs every six years
- Provide $4 million for aquatic habitat restoration below Windy Gap Reservoir administered in a cooperative effort by the Upper Colorado River Habitat Project and Learning by Doing
- Provide funding for improvements to the Fraser Valley Wastewater Treatment Plant to reduce nutrients in the Colorado River and Three Lakes system (including $4 million to date for phosphorous reduction).

MOFFAT COLLECTION SYSTEM/ GROSS RESERVOIR EXPANSION

Proponent: Denver Water

► Description

The existing Moffat Tunnel Collection System comprises the northern portion of Denver Water's raw water collection system. Water from a complex series of tunnels and conveyances directs water from multiple western slope tributaries in the Williams Fork and Fraser watersheds, through the 6.1 mile-long Moffat Tunnel, under the Continental Divide, into South Boulder Creek, and eventually into Gross Reservoir in Boulder County.

The Moffat Tunnel Collection System Expansion Project ("Moffat Project") involves enlargement of Gross Reservoir, and the diversion of additional water from the Upper Colorado, Williams Fork and Fraser watersheds in Grand County with this additional storage capacity.

Project Need/Purpose

The need statement in the Bureau of Reclamation EIS for the project reads:

> *The purpose of the Moffat Collection System Project is to develop 18,000 acre-feet per year of new, firm yield to the Moffat Treatment Plant and raw water customers upstream of the Moffat Treatment Plant pursuant to the Board of Water Commissioners' commitment to its customers.*

Denver Water identifies 4 broad categories of need for the Moffat Collection System/ Gross Reservoir Expansion (from the EIS at p.1-2):

1. **Reliability.** Existing demands for water exceed supplies from existing Moffat Collection System during drought.
2. **Vulnerability.** Water system is vulnerable to manmade and natural disasters because 90% of DW's storage and 80% of DW's water supplies stem from Denver Water's South System (not from the northern Gross Reservoir system).
3. **Flexibility.** Routine maintenance and outages of the transmission, distribution, and water collection systems, especially in the southern system, dramatically affect reliability. Additional storage in Gross Reservoir provides flexibility to respond to those occurrences.
4. **Firm Yield.** Denver Water identified the need for 18,000 acre-feet per year of new near-term firm yield. As stated in the EIS, "this need was identified after first assuming successful implementation of a conservation program, construction of a non-potable recycling project, and implementation of a system refinement program." At p. 1-2.

► Key Permits, Environmental Reviews, and Agreements

See also grossreservoir.org/about-the-project/document-library/

- § 404 permit (US Army Corps of Engineers, 2017), including:

MOFFAT COLLECTION SYSTEM/GROSS RESERVOIR EXPANSION, *CONT.*

  - § 401 Water Quality Certification (Colorado Department of Public Health and Environment, 2016)
  - §122.2 Fish and Wildlife Mitigation and Enhancement Plan (Colo. Parks and Wildlife, 2011)
- NEPA FEIS and Record of Decision (US Army Corps of Engineers).
- Colorado River Cooperative Agreement (CRCA) (2012) and ancillary documents.
  - Signatories include Denver Water and 17 counties, municipalities, water and sanitation districts, irrigation districts, and conservation/conservancy districts on the West Slope.[18] Twenty five additional West Slope partners participated in negotiations, including ski resorts and other local governments.
  - Many commitments in the CRCA address existing conditions in the Colorado and Fraser Rivers. See the summary of environmental commitments, below.
- Learning By Doing Intergovernmental Agreement (2012)
  - Signatories include Denver Water, Grand County, Middle Park Water Conservancy District, and the Colorado River District. (Note: Northern Water signed a similar IGA with West Slope parties as part of the WGFP)
  - IGA comprises ongoing commitment to adaptive management through the Learning By Doing Adaptive Management Committee and outlines in more detail those ongoing commitments.
- Moffat Collection System Project EIS (US Army Corps of Engineers)
- Biological Opinion (US Fish and Wildlife, 2013)
- Grand County Mitigation and Enhancement Coordination Plan (2014)
- US Forest Service Settlement Agreement (2016)
- Federal Energy Regulatory Commission (FERC) Hydropower License Amendment (2020).
- Boulder County/ Denver Water Settlement Agreement in lieu of 1041 Permit (Nov. 2021). Includes $12.5 million for project mitigation in Boulder County.
  - During this project, Boulder County was in litigation and declined to discuss the 1041 permit or settlement agreement.

[18] West Slope CRCA signatories: Eagle County, Grand County, Summit County, Colorado River District, Middle Park Water Conservancy District, Clinton Ditch and Reservoir Company, Eagle Park Reservoir Company, Eagle River Water and Sanitation District, Upper Eagle Regional Water Authority, Grand Valley Water Users Association, Orchard Mesa Irrigation District, Ute Water Conservancy District, Palisade Irrigation District, Mesa County Irrigation District, Grand Valley Irrigation Company, City of Glenwood Springs, and City of Rifle.

MOFFAT COLLECTION SYSTEM/GROSS RESERVOIR EXPANSION, *CONT.*

► Projected Impacts

Projected impacts from the Moffat Project include:

- Reduced streamflows in the Upper Colorado, Williams Fork, and Fraser watersheds in Grand County, which can result in, for example:
    - Increased stream temperature,
    - Damage to aquatic habitat and riparian areas, and
    - Reductions in flushing and channel maintenance flows.
- Various impacts on the East Slope, including for example:
    - Impacts to area surrounding Gross Reservoir during construction of the Gross Reservoir enlargement and from the expanded size of Gross Reservoir.
    - Impacts to South Boulder Creek and wetlands, primarily from increased stream flows as part of delivery system.

Negotiations with west slope entities also focused on both current and future conditions of the aquatic environment without regard to causation" to restore and enhance aquatic resources in Grand County outside of the Moffat Project considerations, referred to as "enhancements."[19] This includes an ongoing commitment to a collaborative adaptive management effort called Learning By Doing Cooperative Effort.

► Environmental Commitments

The following information from Denver Water[20] summarizes mitigation and enhancement projects on both the West and East Slopes. Denver Water estimates it committed to more than 60 projects with a total cost of more than $30 million. Some of the projects include:

- Establishing a 5,000-acre-foot environmental pool, in partnership with the cities of Boulder and Lafayette, which will enhance stream flow in South Boulder Creek during low flow periods.
- Working collaboratively with Grand County through Learning By Doing to "maintain, and, where reasonably possible, restore and enhance the conditions of the aquatic environment in Grand County."
- Participating in significant water improvement and stream restoration efforts, such as the Williams Fork River restoration project.
- Committing $50,000 to stream channelization improvements on the Fraser River.
- Monitoring stream temperatures, water quality, aquatic insects and channel stability in numerous streams on both West and East slopes.

[19] *Moffat Collection System Project: Grand County Mitigation and Enhancement Coordination Plan* (2014) at 7.

[20] From denverwater.org/grossreservoir/environment.

MOFFAT COLLECTION SYSTEM/GROSS RESERVOIR EXPANSION, *CONT.*

- Partnering with the Colorado Department of Transportation, Grand County, the Town of Winter Park and the U.S. Forest Service to to remove road sand to improve stream quality and trout habitat on the Fraser River.

Colorado River Cooperative Agreement enhancements in Grand County, many of which are only made following the issuance and acceptance by Denver Water of permits necessary for the Moffat Project, include for example:

- Collaborative work with Grand County to use Denver Water's system flexibility to benefit the aquatic environment.
- More water in the Fraser and Colorado Rivers in dry years.
- $2 million contribution to water quality measures.[21]
- $1 million for aquatic habitat improvements to be used by Learning By Doing.
- $1 million contribution to the endowment fund for the Upper Colorado River Wild and Scenic Stakeholder Group
- Between 1,000 and 2,000 acre feet of water for use for environmental purposes and any incidental recreational benefit beginning the year the Moffat Project becomes operational.
- Collaborative effort between Denver Water, Colorado Department of Transportation, Grand County and the U.S. Forest Service to modify Denver Water's diversion structure on the Fraser River to allow the removal of road sand.
- Participation in collaborative efforts including Learning By Doing and the Upper Colorado River Wild and Scenic Stakeholder Group.
- Commitment that Denver Water would not use project water to expand passed its current Service Area, and additional conservation and reuse commitments for certain water rights.

▸ Litigation

- **1041 Permit Authority of Boulder County for Gross Reservoir Expansion.** Denver Water filed several cases against Boulder County, questioning its authority to require Denver Water to obtain a 1041 permit before proceeding with Gross Reservoir Expansion.
    - The most recent of those filings occurred in 2021 (*City and County of Denver, Acting by and through its Board of Water Commissioners v. Boulder County,* Case No. 21-cv-01907-RBJ) and alleged that under the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") Order directing Denver Water to proceed with the expansion project preempts

[21] The water quality funds will be allocated and administered by a board consisting of one representative from each of the following entities: Grand County Commissioners, Town of Fraser, Grand County Water and Sanitation District No. 1, Winter Park Water and Sanitation District, Tabernash Meadows Water and Sanitation District, Granby Sanitation District, and Winter Park Ranch Water and Sanitation District.

MOFFAT COLLECTION SYSTEM/GROSS RESERVOIR EXPANSION, *CONT.*

Boulder County's 1041 permit process and requirements.

- **Parties entered into a settlement agreement** which includes $12.5 million in various types of project mitigation in Boulder County and committed to participate in other efforts such as restoration, "climate stabilization," and water conservations. In exchange, Denver Water filed a motion to dismiss its suit.

- *Save the Colorado et al. v. City and County of Denver, acting by and through its Board of Water Commissioners (Denver Water)*, No. 21-155 (10th Circ. 2022). A group of environmental groups sued federal agencies over the issuance of the 404 Permit. The 10th Circuit issued a decision on September 30, 2022 that the legal challenge should remain with the US District Court, not the court of appeals, and thus the legal challenge to permit issuance is poised to return to the US District Court.

BESSEMER DITCH

Proponent: Pueblo Water

► Description

The Bessemer Ditch irrigates approximately 18,000 acres of nationally significant farmland. A group of farmers served by the ditch initiated a sale of water interests, and the City of Pueblo's municipal water provider ("Pueblo Water"), under threat of potentially losing access to this resource to other buyers, determined to purchase the supply. Pueblo Water purchased approximately one third of Bessemer-irrigated farmland, eventually to be permanently fallowed for public drinking water supply.

This water transfer project is noteworthy because of the subsequent efforts to address projected impacts of the water transfer, in particular Rocky Mountain Farmers Union (RMFU) and the Palmer Land Trust efforts to assess alternative water transfer scenarios that would be less impactful to communities along the Bessemer Ditch while ensuring Pueblo Water is still able to utilize its water rights.

► Project Need/Purpose

Pueblo Water purchased water rights along Bessemer Ditch for future municipal water use.

► Key Permits, Environmental Reviews, and Agreements

- Pueblo County 1041 Permit (not yet submitted or reviewed)
- Water Court Decree (2019; Case No. 17CW3050) for changes in use from irrigation to municipal, including a change from irrigation to certain "Changed Uses" and a change from direct flow to storage and subsequent release, change of place of use, and change of point of diversion.
    - See dry up covenant at 40-41.
- Agreement with Bessemer Irrigating Ditch Company (2017).

► Summary of Projected Impacts[21]

- Loss of 30% of irrigated land along the Bessemer Ditch, much of which is focused on critical agricultural production areas.
- Decline in agricultural economy, including inability of farms that did not sell water and agricultural-based industries to remain viable.
- Opportunity to address existing environmental impacts of irrigation in area, including:
    - sedimentation from surface irrigation return flows into rivers and streams
    - high water tables and total dissolved solids (TDS) concentrations (salt, selenium, uranium, arsenic, etc.) in the Arkansas River Watershed
    - loss of contiguity across grassland and riparian corridors

[22] Based on *Navigating Water Sales* at 13-17.

BESSEMER DITCH, *CONT.*

A study commissioned by the Rocky Mountain Farmers Union (RMFU) and the Palmer Land Trust[23] resulted in a plan to improve agricultural, environmental, and economic outcomes considering the pending transfer. The plan, Navigating the Wake of Municipal Water Sales ("Navigating Water Sales"), prepared by Innovative Conservation Solutions, LLC, identifies a management strategy for the water transfer that can improve land use patterns, promote economic opportunity, improve environmental conditions, foster intra-regional cooperation, and advance innovative water management practices that benefit farms and cities while guaranteeing Pueblo Water its full yield of municipal water.

The study identifies critical production areas irrigated by Bessemer Ditch according to 1) soil quality, 2) production capacity, 3) historic productivity, 4) contiguity of production areas, and 5) parcel size, and locations where permanent fallowing can minimize impacts to the agricultural community and maximize ecological gains (called "dry-up candidate areas").

Study recommends preservation of the best farmland by substituting or exchanging water so that dry-up is focused primarily in dry-up candidate areas, and critical production areas are protected. The study also recommends more broadly fallowing strategically and pursuing alternatives to fallowing whenever possible.

Results of the report were integrated into the dry up covenant in the water court decree for use change from agricultural to municipal. The dry up covenant was driven in part by opposers in the water court proceeding called the Bessemer Project Association, a group of Bessemer Ditch interests who also participated in the study.

Note these projected impacts may be much of the focus of project mitigation during permitting so may still be addressed to various degrees. However, permitting for this project has not been completed.

► Summary of Related Litigation - None

► For More Information

- Campbell, Scott et al. *The Economic Impacts of Dry-up on Colorado's Bessemer Ditch: A scenario-based analysis with a review of 1041 requirements, best management practices, and mitigation policy recommendations*, prepared for Palmer Land Conservancy (June 2021).
- Campbell, Scott et al. *Investing in Water Optimization: New Markets for Conservation on Colorado's Bessemer Ditch*, prepared for Harvard University and the Bessemer Project Association in partnership with Palmer Land Trust (March 2020).
- Innovative Conservation Solutions, LLC, *Navigating the Wake of Municipal Water Sales: Alternatives to Improve Agricultural and Ecological Outcomes on the Bessemer Ditch*, prepared for Rocky Mountain Farmers Union (June 2017).

[23] Funding for *Navigating Water Sales* study was provided by the Rocky Mountain Farmers Union Foundation, the David & Lucile Packard Foundation, the Gates Family Foundation, Pueblo County, Joe Woodford, Palmer Land Trust, and anonymous donors.

SOUTHERN DELIVERY SYSTEM

Propontents: City of Colorado Springs, City of Fountain, and Security Water District, collectively the Regional Water Infrastructure Authority (RWIA), and Pueblo West Metropolitan District.

► Description

The Southern Delivery System (SDS) is a regional water storage and pipeline delivery system constructed by Colorado Springs Utilities (CS Utilities) on behalf of the project proponents. The SDS pipeline delivers CS Utilities existing water rights stored in Pueblo Reservoir through newly-constructed pipelines to treatment and distribution facilities in Pueblo West and in El Paso County for use by the project participants. By increasing the delivery capacity of fully consumable water from Pueblo Reservoir to the project participants, SDS also provides for increased reuse and exchange of those fully consumable water rights to meet current and future municipal water demands. Beginning operations in 2016, SDS is designed to help meet the water supply conveyance and management needs of the project participants through 2046. The project includes construction and operation of the following components:

- Utilization of 42,000 acre-feet of long-term excess capacity storage in Pueblo Reservoir (an east slope facility of the federal Fryingpan-Arkansas project) to store a mix of non-Fry-Ark imported (i.e. transmountain) and in-basin water rights.
- A 53-mile raw water pipeline (66- and 72-inch diameter) and three pump stations that will convey up to 78 million gallons of water per day.
- Bailey Water Treatment Plant providing 50-mgd capacity for municipal uses;
- Phase 2 of SDS includes the following additional components: the addition of 30,500 acre-feet of terminal storage at the new Gary Bostrom Reservoir located on upper Williams Creek in El Paso County; the expansion of raw water pump stations and the Bailey Water Treatment Plant to 100-mgd capacity; expansion of CS Utilities treated water distribution system; the addition of a 28,500 acre-foot exchange storage reservoir on Williams Creek and exchange conveyance facilities to transfer exchange water to and from Fountain Creek. Phase 2 is scheduled for implementation when the daily demands require SDS use in excess of 20-mgd, which is not anticipated before 2026.

► Project Need/Purpose

According to the 1041 Permit issued by Pueblo County, the purpose of the SDS project is to fully reuse existing water rights and return flows through recapture and reuse by exchange, as well as provide additional system redundancy and access to existing water supplies owned by the project proponents utilizing Pueblo Reservoir storage and transport up Fountain Creek towards Colorado Springs, Fountain, and Security.

SOUTHERN DELIVERY SYSTEM, *CONT.*

▸ Key Permits and/or Negotiated Agreements

- Pueblo County 1041 Permit (2009).
- Final Environmental Impact Statement (Bureau of Reclamation). Federal register summary, 2008, available here. Record of Decision, 2009.
    - Required because the project involved long-term storage and conveyance contracts from US Bureau of Reclamation, which served as the lead agency for the EIS.
- Pueblo Flow Management Agreement (initially voluntary flow management agreement to work to keep water in the Arkansas River through the City of Pueblo; integrated into the 1041 permit to make mandatory).
- Arkansas River Low Flow Program Agreement (integrated into 1041 permit). MOU between CS Utilities and Pueblo Board of Water Works to contribute to and assist in the maintenance of a storage pool in Pueblo Reservoir to add flow during times of dangerously low flow (at or below 50 cubic feet per second).
- 2016 Pueblo County/CO Springs Stormwater IGA (alternative path to possible revocation of 1041 permit).
    - In 2015, Pueblo County found there was adequate evidence to revoke the SDS 1041 due to violations of conditions mitigating impacts of stormwater flows in the Fountain Creek drainage to Pueblo County. The Pueblo County Board of County Commissioners elected to defer such revocation pending a negotiated resolution. The result is a 2016 IGA outlining Colorado Springs and Colorado Springs Utilities' commitments concerning stormwater management.

▸ Summary of Projected Impacts Addressed in Permitting

- Diminished flows in the Arkansas River through the City of Pueblo. Related impacts include fishery impacts from reduced flows, higher water temperatures, and economic losses with loss of flow through downtown core.
- Flooding, sediment, and erosion issues with increased flows in Fountain Creek.
- Damage to rangeland from construction of 40-mile pipeline.
- Existing water quality issues with aging sewer infrastructure and high flows in Fountain Creek
- Existing impacts from problematic stormwater conveyance systems upstream of Pueblo along Fountain Creek (Colorado Springs area).

Note these projected impacts were much of the focus of project mitigation during 1041 permitting; many of the conditions of the 1041 permit address these impacts.

SOUTHERN DELIVERY SYSTEM, *CONT.*

▸ Summary of Related Litigation

- *Colorado Springs Utilities v. Pueblo County*, 147 P.3d 1 (Colo. 2006). Colorado Springs initiated a lawsuit claiming Pueblo County's 1041 regulations were invalid as applied to SDS.
    - The question before the Supreme Court was whether the lawsuit should move forward in Pueblo County court (as the District Courts determined) or El Paso County court (where Colorado Springs initially filed its claim).
    - Colorado Supreme Court en banc held that venue was proper in Pueblo County under Colorado Rules of Civil Procedure (C.R.C.P.) 98(b)(2).
- **1041 Regulations Apply to SDS Project.** After the above Supreme Court decision, the Pueblo County Court ruled in summary judgment that Pueblo County BOCC properly designated the "efficient utilization of municipal and industrial water projects" as an activity of state interest, and that the 1041 regulations applied to the SDS Project. *Order Granting Mot. Summ. J. Nov. 8, 2007*, Case No. 06CV438 Div. B (Pueblo Co Dist. Ct.)
    - The Regional Water Infrastructure Authority (RWIA) applied for a 1041 permit after the district court decision, and Pueblo County issued a 1041 permit with conditions in 2009.

▸ For More Information

- Stengel, Amy, *Water Projects and Colorado's 1041 Regulations*, Colorado Riparian Association (Sept. 19, 2009)

THORNTON NORTHERN PROPERTIES STEWARDSHIP PLAN

Proponent: City of Thornton

► Description

The City of Thornton owns 18,751 acres of farmland in Larimer and Weld Counties. The City acquired the land and associated water rights in 1985 and 1986 to apply the water rights to future municipal use. In 1998, Thornton received its court decree changing from agricultural to municipal use. Thornton plans to develop municipal water supplies from these lands from approximately 2025 to 2065. The City anticipates maintaining only minimal land ownership after that time.

In 2019, the City commissioned development of a **Northern Properties Stewardship Plan** (NPSP), to "identify the best long-term uses (as well as interim management and ownership transition strategies)" for the City-owned farmland. *NPSP Work Summary* at 3.

Foundational work is ongoing and includes: "1) internal planning with City of Thornton representatives, (2) interviews with Larimer and Weld County subject matter experts (SMEs), (3) preliminary landscape analyses, and (4) meetings with individuals and small groups." *Id.*

Ongoing next steps include a regional land use assessment and water optimization study.

Thornton committed $200,000 to the NPSP project in 2019. The city will use some funds from this initial investment—and a subsequent $75,000 commitment made in 2020—to leverage financial resources that can help underwrite Regional Land Use Assessment and Water Optimization Study costs. Other funders include the Colorado Water Conservation Board, the US Bureau of Reclamation WaterSMART program, and the Colorado Department of Local Affairs.

► Project Need/Purpose

Thornton's original acquisition of land and associated water rights in 1985 and 1986 provided secure water supply for future uses, developing supplies from 2025 to 2065.

The purpose of the NPSP is to "identify the best long-term uses (as well as interim management and ownership transition strategies)" for the City-owned farmland. *NPSP Work Summary* at 3.

In a broader, statewide context, NPSP has the potential to "set new precedents for how more equitable, integrated, land use and water-management practices can be achieved through a Thornton-sponsored, community-driven Regional Land Use Assessment and Water Optimization study." *Id.* at 4.

► Key Permits and/or Negotiated Agreements

- 1041 permit for pipeline construction through Larimer County (BOCC denied permit; currently in litigation).
- Special use permits in Weld County, which were denied. Thornton subsequently overruled the denial, as provided under C.R.S. § 30-28-110(1)(c).[24]

[24] C.R.S. § 30-28-110(1)(c)("If the public way, ground, space, building, structure, or utility . . . does not . . . fall within the province of the board of county commissioners . . . the commission's disapproval may be overruled by said body [not within county jurisdiction].")

THORNTON NORTHERN PROPERTIES STEWARDSHIP PLAN, *CONT.*

- Other future local land use permits TBD as identification of potential future land uses progresses.
- Water Court decree, change of use. (1998)

► Summary of Projected Impacts

The NPSP has the potential to address the following impacts associated with the removal of agricultural production and water from lands in Larimer and Weld Counties:

- Socio-economic impacts from buy and dry.
- Non-point source water quality impairments.
- Better reclamation practices when land is dried.
- Maximizing agricultural production with limited water resources on the best production ground.
- Mitigating and adapting to climate change impacts. Summarized from *NPSP Work Summary* at 4.

Note this project is in progress. These projected impacts continue are much of the focus of this project and thus may be addressed to various degrees.

► Summary of Related Litigation - None

► For More Information

- Innovative Conservation Solutions, THK Associates, and CDR Associates, *Northern Properties Stewardship Plan: 2020 Work Summary and 2021 Work Projects Outline* ("NPLS Work Summary), prepared for the City of Thornton (Nov. 2020).

APPENDIX B: TYPES OF PERMITTING AND ENVIRONMENTAL REVIEW

The following are brief summaries of various federal, state, and local permits and environmental reviews that may be required to develop a water transfer project. The determination of what permits or environmental reviews are based on specific facts of a proposed water transfer and may or may not include the following types of permits.

FEDERAL

► National Environmental Policy Act (NEPA)

NEPA requires federal agencies to assess environmental effects of proposed major Agency Actions such as the issuance of § 404 Dredge and Fill or special use permits for projects originating on federal land. The type of analysis required depends on the severity of the impacts of the agency action. An **environmental assessment (EA)** requires less analysis, while a full **environmental impact statement (EIS)** requires extensive analysis and outreach. The Council on Environmental Quality establishes NEPA regulations consistent with statute.

Environmental review under NEPA is not a permit; the federal agencies are simply required to follow the specific required elements of the assessment including public processes, analysis of the project need, and an evaluation of alternatives to meet the project need.

► § 404 Dredge and Fill Permit

Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into the waters of the United States, including wetlands. No discharge or fill material may be permitted if either a practicable alternative exists that is less damaging to the aquatic environment or the nation's waters would be significantly degraded. Review of a § 404 Permit is considered a major Federal Action requiring environmental review under NEPA.

§ 404 Permits are issued by the Army Corps of Engineers (USACE) with review by the US Environmental Protection Agency (EPA). EPA also has the authority to "veto" a dredge and fill permit issued by the US Army Corps of Engineers under § 404(c) of the Clean Water Act. Most notably, the EPA vetoed Denver Water's Two Forks proposed water project in 1990.[25]

[25] Two Forks was a proposed 539-foot reservoir in Cheesman Canyon, at the confluence of the north and south forks of the South Platte River. For more information, see The Fork Not Taken, a May 10, 2019 retrospective from Water Education Colorado.

► Federal Energy Regulatory Commission (FERC) Hydroelectric License

Water transfer and storage projects that involve a hydroelectric facility require a hydroelectric license. Changes to an existing hydroelectric facility require an amendment to the license. Licensing and amendments are considered a major Federal Action that require environmental analysis under NEPA.

► Biological Opinions under the Endangered Species Act (ESA)

Under Section 7 of the ESA, federal agencies must consult with the U.S. Fish and Wildlife Service on actions that may impact an ESA-listed species. Consultation culminates with the regulatory agency proposing the action issuing a Biological Opinion (BiOp), which helps ensure that their actions do not jeopardize the continued existence of a species or destroy or adversely modify designated critical habitat. BiOps generally include:

- Conservation recommendations to further recovery of the ESA-listed species impacted by a proposed action.
- Reasonable and Prudent measures to minimize harmful effects on the impacted species; and
- Any needed monitoring and reporting necessary to confirm successful implementation.

Various federal actions related to water transfer projects may trigger a BiOp, including for example a FERC or §404 permit issuance.

COLORADO

► § 401 Colorado Water Quality Certification (§ 401 Certification)

Section 401 of the Clean Water Act requires that any project needing a federal license or permit obtain state certification of compliance with applicable water quality standards before the discharge of a pollutant into waters of the United States. The evaluation of water quality impacts must include the construction and operation of the project. For water transfer projects, this is particularly relevant for development proposals that require a Dredge and Fill permit under § 404 of the Clean Water Act ("404 permit"), usually in the context of the construction of reservoirs and dams. Conditions in a § 401 Certification are integrated into a §404 Permit. §401 Certifications are issued by the Colorado Department of Health and Environment.

► Colorado Parks and Wildlife Fish and Wildlife Mitigation Plan (§ 122.2 Plan or Mitigation Plan)

Under C.R.S. § 37-60-122.2, proponents of certain defined water diversion, delivery, or storage projects are expected to mitigate future project impacts on fish and wildlife resources. A proponent for a "water diversion, delivery, or storage facility which requires an application for a permit, license, or other approval" from the U.S. must submit a Fish and Wildlife Mitigation Plan. C.R.S. § 37-60-122.2(1)(b). Statute requires that mitigation measures must be "economically reasonable" and "maintain a balance between the development of the state's water resources and the protection of the state's fish and wildlife

resources." C.R.S. § 37-60- 122.2(1)(a).Colorado Parks and Wildlife (CPW) reviews the Mitigation Plan and forwards its determination to the Colorado Water Conservation Board to either affirm or modify CPW's findings, with a possible review by the Governor before the Mitigation Plan becomes the state's official position. The official state position is then "communicated to each federal, state, or other governmental agency from which the applicant must obtain a permit, license, or other approval."

C.R.S. § 37-60- 122.2(1)(c). The FWMP is not independently enforceable under state law. However, the plan, or components of it, typically become enforceable through a separate agreement such as a memorandum of understanding or intergovernmental agreement between the proponent and CPW.

► Colorado Water Court Proceedings

Users of Colorado water gain water rights through court decrees. Some of the controversies that necessitate adjudication relate to determination of new water rights, changes of water rights, approval of plans to protect senior water rights, findings of reasonable progress, known as diligence determinations, on water construction projects, and approval of exchanges. The amount of available water is determined by combining the physical and legal constraints currently in place.

While water court proceedings generally focus on avoiding injury to senior water rights, there are statutory provisions tailored to addressing socioeconomic impacts from agricultural to municipal changes in water rights. Water courts may require "provisions designed to accomplish the revegetation and noxious weed management of lands from which irrigation water is removed." C.R.S. § 37-92-305(4.5)(a). Water courts may also require mitigation payments to offset reductions in property tax revenues attributable to a "significant water development activity," called a transition mitigation payment, or require a bonded indebtedness payment based on the bonded indebtedness of the property that is to be removed from irrigation at the time of the water court decree. C.R.S. § 37-92-305(4.5)(b)(I)(A-B).

LOCAL REGULATIONS IN COLORADO

► Local Regulations of Areas and Activities of State Interest (1041 regulations)

Colorado House Bill 1041, also known as the Areas and Activities of State Interest Act, was enacted in 1974 and allows counties and municipalities to regulate enumerated areas and activities, including new or major expansions of domestic water treatment systems and municipal and industrial water projects. In accordance with statutory requirements, local governments adopt permit procedures and regulations tailored to protecting the resources and interests of their communities. After a local government designates a matter of state interest in a public hearing, no development in a designated area and no designated activity can proceed without a local government permit.

► Special Use or Other Local Development Review Permit

A county may require a special use permit or other development review permit for elements of a public utility's water transfer project within the county jurisdiction. However, if a county denies a special use permit for another local government, that local government may vote unanimously to overrule such a denial under C.R.S. § 30-28-110(1)(c)("If the public way, ground, space, building, structure, or utility ... does not ... fall within the province of the board of county commissioners ... the commission's disapproval may be overruled by said body [not within county jurisdiction].").

APPENDIX C: INTERVIEWEE AND CONVENING LIST

NAME	ORGANIZATION	PROJECT EXPERTISE	ROLE		
			Project Partner Organization	Interviewee	Convening Participant
Mike Bartolo	Colorado State University Arkansas Valley Research Center	Bessemer Ditch		x	x
Paul Bruchez		Windy Gap Firming Project/ Moffat Collection System			
Scott Campell	Innovative Conservation Solutions	Bessemer Ditch/Thornton Northern Properties Stewardship Plan		x	x
Peter Fleming	Colorado River District	Windy Gap Firming Project/ Moffat Collection System	x	x	x
Tom Gougeon	Denver Water (former)	Moffat Collection System		x	x
Barbara Green	Northwest Colorado Council of Governments	Windy Gap Firming Project/ Moffat Collection System	x		x
Terry Hart	Commissioner (former), Pueblo County	Southern Delivery System/ Bessemer Ditch		x	
Matt Heimerich	Palmer Land Conservancy	Bessemer Ditch		x	x
Emily Hunt	City of Thornton	Thornton Northern Properties Stewardship Plan		x	x
Torie Jarvis	Northwest Colorado Council of Governments	Thornton Northern Properties Stewardship Plan	x		x
Jeff Kahn *Attorney*	Lyons Gaddis	Bessemer Ditch/Thornton Northern Properties Stewardship Plan			x
Frank Kinder	Northern Water		x		x
Waverly Klaw	Sonoran Institute		x		x
Laura Makar	Pitkin County	Southern Delivery System		x	
Rick Marsicek	Denver Water	Moffat Collection System			x
Andy Mueller	Colorado River District	Windy Gap Firming Project/ Moffat Collection System	x		x

NAME	ORGANIZATION	PROJECT EXPERTISE	ROLE		
			Project Partner Organization	Interviewee	Convening Participant
Raini Ott	Northwest Colorado Council of Governments		x		x
Ray Petros	Special Counsel (former), Pueblo County	Southern Delivery System/ Bessemer Ditch		x	
Ed Roberson	Palmer Land Conservancy	Bessemer Ditch		x	
John Shepard	Sonoran Institute		x		x
David Taussig	Grand County	Windy Gap Firming Project/ Moffat Collection System		x	x
Zach Thode	Larimer County Agricultural Advisory Board	Thornton Northern Properties Stewardship Plan		x	x
Esther Vincent	Northern Water	Windy Gap Firming Project	x		x
Alan Ward	Pueblo Water	Bessemer Ditch		x	x
Pat Wells	Colorado Springs Utilities	Southern Delivery System			x
Patti Wells	Denver Water (former)	Moffat Collection System		x	
Mely Whiting	Trout Unlimited	Windy Gap Firming Project/ Moffat Collection System	x	x	x
Eric Wilkinson	Northern Water	Windy Gap Firming Project		x	x
Curtis Mitchell	City of Fountain (former)	Southern Delivery System		x	
Kat Weismiller	Colorado Water Conservation Board				x
Russ Sands	Colorado Water Conservation Board				x
Jeff Drager	Northern Water	Windy Gap Firming Project			x

APPENDIX D: INTERVIEW QUESTIONS

Each interview involved a series of 12 to 15 questions. The majority of interview questions were tailored for four primary stakeholder interests represented: Project Proponent, Local Government, Environmental or Community Group, and Agricultural Interest. There were also several general questions that all interviewees, or all except those representing project proponents (PP), were asked. In addition, interviewers were asked post-interview reflection questions.

GENERAL QUESTIONS

1. (All except PP) How and when did you learn about the project?
2. (All except PP) Did you have the expertise available (in-house or through outside consultants) to perform an independent review of the proposed project and its impacts?
3. (All except PP) Did you enlist assistance from other local agencies, community groups, or professionals to get your concerns addressed? State or federal agencies?
4. (All except PP) Are there ways you wish you'd approached this differently? What barriers prevented you from addressing local concerns?
5. (All) Who else should we be talking to about this project?

INTEREST-SPECIFIC QUESTIONS

▸ Project Proponent

1. How did you identify the need for the project? What was the planning horizon used to determine need?
2. Did the projected need for future water supply take into account conservation, reuse, recycling, ATMs, or other methods to manage or reduce demand?
3. Did the process consider long term climate variability, climate change, future availability?
4. What alternatives were considered that did not require transfer of water from another area of the state?
5. What state, federal, or local permits and approvals were required?

6. With whom and how did you engage in the area from where the water would be taken? (E.g., discussions with elected officials? Conservancy districts? Local districts? Environmental groups? Farmers or ranchers?)
7. How did you assess the impacts of the project to the area from where the water would be taken? Was this done as part of an environmental impact process? Negotiations? Stakeholder meetings? Other?
8. What are the main impacts of the project?
9. How did you develop the mitigation package for project impacts? Was it driven by state, local, or federal concerns? Did the project include "enhancements" to the area from where the water would be taken?
10. Was there litigation in opposition to the project? Did your entity engage in methods to avoid or minimize litigation?
11. Does the project include any on-going adaptive management to address project impacts?
12. Do you think there needs to be a change in Colorado law to remove barriers to negotiations that include areas from where the water is coming?
13. In general, has your entity developed new relationships with the area from where the water is coming as a result of this process? Are they better now than they were before the process for the project? Why/Why not?
14. Were there changes made in the organizational culture of your entity because of the engagement process used for this project? Should there be?

► Local Government (or Other Primary Organization in the Basin of Origin)

1. Did your organization make efforts to engage with the project proponent? If yes, what were they? Were they successful? How would you improve them?
2. Did you have local regulatory authority over the project? If yes, please identify.
3. Did you mount legal challenges to the project? If yes, what were they? Were legal challenges your first choice or was litigation a last resort?
4. Were you involved in the project processes in a formal way (cooperating agency if NEPA or federal permit)? Was that helpful or not? Did you engage with the project proponent throughout the project planning and approval process? How would you do it differently?
5. Did you engage local stakeholders who might be affected by the transfer of water? If no, why not? If yes, what was the stakeholder engagement and who was engaged?
6. How did you identify and prioritize mitigation for the local impacts of the water transfer?

7. Did you have stream management plans, watershed plans, or land use plans in place that could be used to assist in identifying project impacts and proposing mitigation?
8. Does your area engage in water conservation efforts? How do you determine water availability when approving new development in your jurisdiction?
9. Were there commitments made by the project proponent outside of the regulatory process? How did those come about?
10. In general, has your entity developed new relationships with the project proponent as a result of this process? Are they better now than they were before the process for the project? Why/Why not?

▸ Environmental or Community Group

1. Were you invited by the project proponent or any state, local or federal agency to participate in discussions about the project? What was your role?
2. Did you coordinate your efforts with other environmental or community groups?
3. Did you engage with the public either in the area to be served by the project or the area from which the water would be transferred?
4. Did you take an official position in support or opposition to the project, either in court or in comments? When in the process did you take the position?
5. What were your key concerns regarding the transfer of water?
6. Did the final plans for the project provide sufficient mitigation for the impacts of concern to you?
7. What kind of collaborative commitments were made in the process? How are those relationships currently? How have they changed or are different than envisioned?

▸ Agricultural Interest

1. Were you invited by the project proponent or any state, local or federal agency to participate in discussions about the project? What was your role?
2. Did you coordinate your efforts with other community groups or others with shared interests?
3. Did you engage with the public either in the area to be served by the project or the area from which the water would be transferred? How did you communicate agricultural impacts from the project?
4. Was there a formal entity representing agricultural interests? Did that entity take an official position in support or opposition to the project, either in court or in comments? When in the process did that entity take the position? Did you agree with or feel the entity represented your interests?
5. What were your key concerns regarding the transfer of water?

6. Did the final plans for the project provide sufficient mitigation for the impacts of concern to you?
7. What kind of collaborative commitments were made in the process? How are those relationships currently? How have they changed or are different than envisioned?

POST-INTERVIEW REFLECTION QUESTIONS

1. Big picture summary of your impressions from the interview?
2. Key takeaways and lessons learned that might be carried forward to the convening?
3. Commonalities or differences with other case studies that you've noticed?
4. What other questions should we have asked?

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