

Appendix I: The Past, Present, and Future of Transmountain Diversion Projects

Early Projects

When the U.S. Geological Survey, led by Ferdinand V. Hayden, arrived in Colorado in 1869 for its third summer of surveying in the Rocky Mountains, the expedition found ditch and canal construction already underway on the Front Range.¹ A decade before, prospectors had discovered gold near Pikes Peak, precipitating Colorado's first gold rush.² Subsequent gold strikes bolstered the rush of young "Argonauts" from eastern cities to the Colorado Territory.³

While the young territory's mineral prospects ebbed and flowed, cities like Denver, Golden, and El Paso (today's Colorado Springs) continued to grow along the Front Range, building around the merchants who had come to make a living "mining the miners."⁴ Beyond the early entrepreneurs and prospectors, many of Colorado's early settlers had a strong agrarian ethic, and with the rapidly developing nearby markets, farming quickly became established in the fertile prairies flanking the Rockies.⁵

To meet their growing water needs, Colorado's early settlers formed ditch companies to build and operate canal and reservoir works along the Front Range.⁶ While irrigation allowed the formerly barren prairie to flourish, the limited natural water supplies quickly became apparent to Colorado's new inhabitants.⁷ Even before the extended drought of the early 1890s, the South Platte and the Arkansas were already considered over-appropriated.⁸

With no water left for additional development, farms and cities turned to transmountain diversions of water from the West Slope as a means to augment the limited natural water supplies on the Front Range. Not only was the West Slope far less populated, but its precipitation was far more abundant.⁹ In 1890, in the mountains of what would eventually become Rocky Mountain National Park, the Larimer Ditch Company began work on a massive earthen channel designed to divert a portion of the headwaters of the Colorado River over La Poudre Pass for irrigation in the Cache La Poudre Valley (see Figure 1).¹⁰ By October of 1890, with the first eight miles of digging complete, the "Grand Ditch" began to transfer water across the Continental Divide.¹¹

In the subsequent years, the Grand Ditch was extended to become a 14.3-mile scar across the face of the Never Summer Range, allowing for the diversion of up to 17,685 acre-feet of water each year to the Front Range.¹² Yet the Grand Ditch, with an average grade of less than 0.2 percent, represented the easiest and most accessible of the feasible transmountain diversion projects.¹³ As the following decades proved, only gravity stood in the way of farmers and cities seeking to divert the flow of streams on the West Slope to the Front Range and Eastern Plains.

Between 1880 and the early 1930s, water users on the Front Range turned to ditch companies and other private entities for the development of transmountain diversion projects.¹⁴ Like the Larimer County Ditch Company (which eventually sold its rights in the Grand Ditch to the Water Supply & Storage Company), farmers and other agricultural interests were the main force behind many of these early projects.¹⁵ Similarly, in 1917 a group of farmers in the Arkansas River Basin formed the Twin Lakes Reservoir and Canal Company, for the purposes of building and operating the Independence Pass



Figure 1. Japanese and Mexican workers dug mile after mile of the Grand Ditch using only picks and shovels (circa 1904). (Fort Collins Museum)

Transmountain Diversion Project. Today, that project diverts up to 39,292 acre-feet of water annually from the headwaters of the Roaring Fork River to the Arkansas River Basin.¹⁶

The Colorado-Big Thompson Project

By the 1930s many of the easier transmountain diversions were already built, and further development required increasingly elaborate and costly projects.¹⁷ At the same time, the first summers of the Dust Bowl scorched the plains, ruining nearly \$47 million of crops in the eastern half of Colorado.¹⁸ The growing sense of urgency among farmers spurred Colorado to push for federal support of a major transmountain diversion project that would divert water from the headwaters of the Colorado River to the South Platte River Basin.¹⁹ While the proposal initially generated stiff opposition from West Slope and environmental interests, in 1937 Congress authorized the Bureau of Reclamation to build the Colorado-Big Thompson (C-BT) Project.²⁰

With 12 reservoirs, 35 miles of tunnels, and 95 miles of canals, construction of the C-BT Project would take nearly two decades. Project water was first diverted from Grand Lake to the East Slope in 1957, through the 13.1-mile Alva B. Adams Tunnel underneath Rocky Mountain National Park and the Continental Divide. Today, the C-BT is Colorado's largest transmountain diversion project, diverting approximately 213,000 acre-feet of water on average each year from the headwaters of the Colorado River to the South Platte River basin. Altogether the project provides supplemental water to thirty cities and towns and allows for the irrigation of roughly 693,000 acres of land in northeastern Colorado.

One of the issues that had to be resolved before Congress would authorize the C-BT Project was the potential impacts to water users on Colorado's West Slope.²¹ While the West Slope was sparsely populated, agriculture was already well established, thanks largely to the earlier construction of two major irrigation projects by the Bureau of Reclamation.²² West Slope residents had no intention of standing by as the headwaters of the Colorado River were diverted to the Front Range, initially demanding acre-foot for acre-foot compensation for any water taken from the Colorado River.²³ Eventually the two sides of the divide reached a compromise in the form of Green Mountain Reservoir, a component of the C-BT Project that was built as compensatory storage for existing and future West Slope water demands.²⁴ With a capacity of approximately 153,000 acre-feet, Green Mountain Reservoir provides enough storage to satisfy senior water rights in the Colorado River Basin, as well as an additional 20,000 acre-feet of water that the Bureau of Reclamation contracts out to West Slope water users.²⁵

Later Compensatory Storage Projects

With the agreement brokered for the C-BT Project as a model, in 1943 the Colorado General Assembly amended the Water Conservancy Act to make compensatory storage a requirement for any project exporting water from the Colorado River Basin that is owned or operated by a water conservancy district.²⁶ In the following decades, this compensatory storage requirement served as the foundation for the construction of additional transmountain diversion projects, both federal and nonfederal. In 1962 Congress authorized the construction of the Fryingpan-Arkansas Project, after West Slope interests and the Southeastern Colorado Water Conservancy District agreed to the construction of Ruedi Reservoir as the compensatory storage component of the project. Likewise in 1970 the Municipal Subdistrict for the Northern Colorado Water Conservancy District was permitted to construct the Windy Gap Project (a major expansion of the C-BT Project) after the Subdistrict agreed to provide financial support for the construction of Wolford Mountain Reservoir.²⁷

However since the Water Conservancy Act only applies to water conservancy districts, just three of the nearly thirty transmountain diversion projects in Colorado are subject to the compensatory storage requirement (*see*

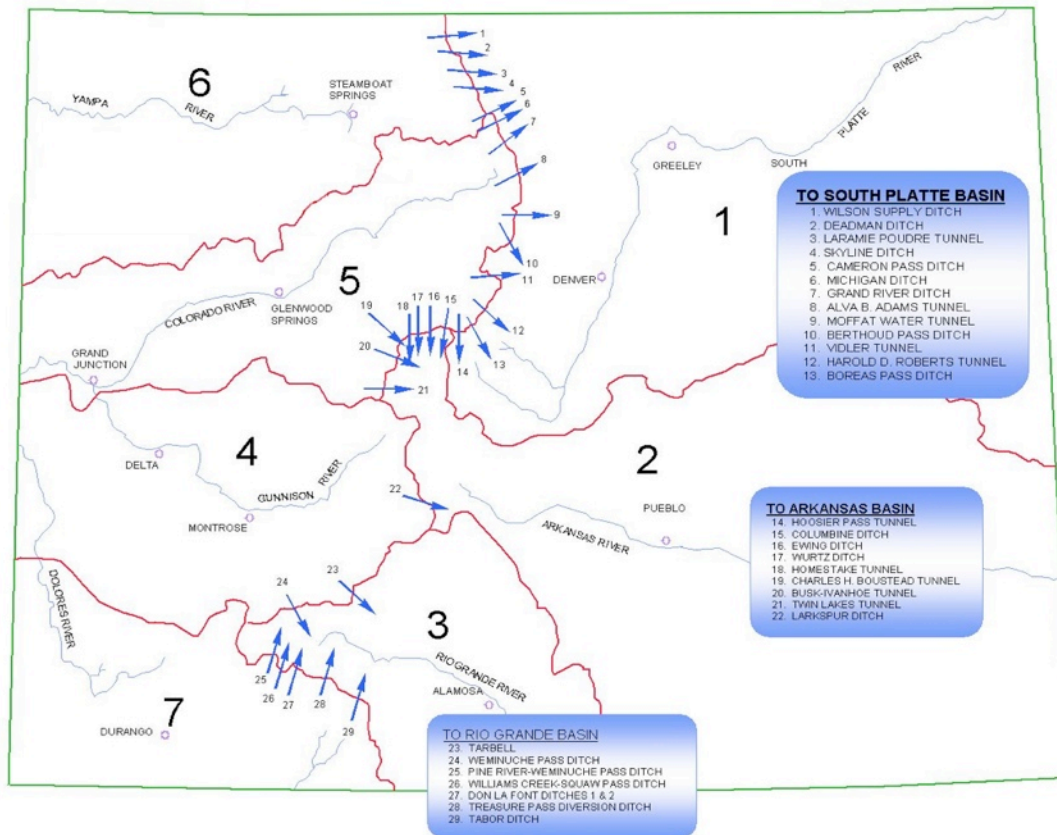


Figure 2. Transmountain diversions in Colorado. The only diversions subject to the compensatory storage requirement are those through the Adams Tunnel (8) (C-BT and Windy Gap projects) and the Boustead Tunnel (19) (Fryingpan-Arkansas Project). (State Engineers Office)

Figure 2).²⁸ The concept of compensatory storage is also increasingly limited as a tool for negotiation between East and West Slope water interests.²⁹ One of the main reasons for the diminished interest in compensatory storage is the reduced demand for additional water storage on the West Slope.³⁰ Numerous reservoirs on the West Slope already provide for the storage of spring runoff, and the availability of other feasible reservoir sites is limited.³¹ Moreover, the West Slope is transitioning from a mining and agricultural based economy to one increasingly centered around tourism and second-home ownership, both of which value the environmental and recreational benefits provided by maintaining instream flows.³²

The Two Forks and Homestake II Projects

The potential roadblock that environmental and recreational interests pose to additional transmountain diversion projects was demonstrated by the relatively recent defeat of two major water supply projects for the Front Range. In 1990, after nearly fifty years of planning and more than \$40 million spent on various feasibility studies, the Environmental Protection Agency (EPA) vetoed Denver Water’s Two Forks Project, based on the potential impact to fisheries, wildlife, and recreational values.³³ Two years later, after more than two decades of fierce litigation, local interests in Eagle County also successfully defeated the Homestake II Project, again based on environmental concerns, in particular, the potential impacts to wetland areas in the recently-formed federal Holy Cross Wilderness Area.³⁴

Both the Two Forks and Homestake II projects were ultimately defeated because their proponents failed to account for the impacts associated with transmountain diversions on environmental and recreational values in the basin-of-origin. While local environmental and recreational interests will never be paramount to the need to ensure

Figure 3. Population growth on the Front Range in the 20th century.

adequate water supplies for the growing Front Range, no longer can East Slope water providers simply make supply planning and development decisions based solely on cost alone.³⁵

Yet the demise of the Two Forks and Homestake II projects represented more than just an increased emphasis on environmental and recreational interests. To fully understand the implications of these two projects, it is necessary to consider how they fit within the larger story of Colorado water law.

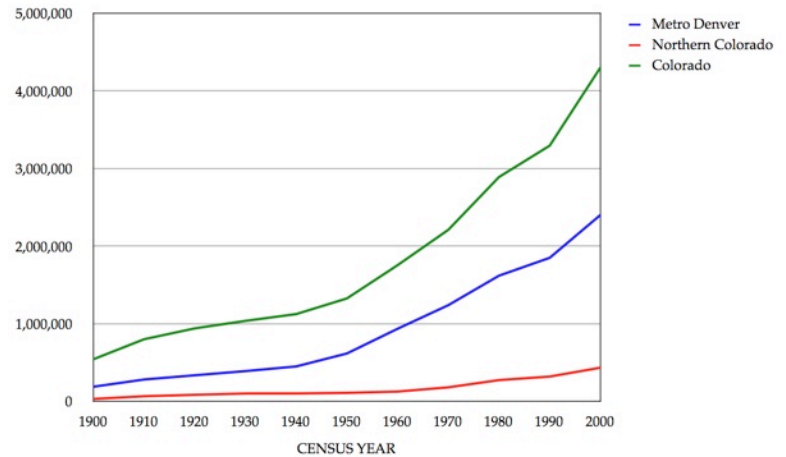
Colorado's unique approach to water law was originally tailored for mining and irrigation purposes. Yet for most of the twentieth century, as Colorado grew from a rural territory to an increasingly metropolitan state, water laws were refashioned to support nearly unlimited urban growth.³⁶ For example, in 1939, when the City of Denver sought judicial decrees for its West Slope water rights on the Fraser and Williams Fork rivers, the Colorado Supreme Court developed an exception to the traditional anti-speculation rule, thereby allowing municipalities to obtain conditional rights based on reasonably anticipated future water demands.³⁷ Similarly in 1969 the Colorado General Assembly enacted a statute that provides that foreign water, once diverted from its natural basin of origin, can be used to extinction, thereby making such water largely exempt from the prior appropriation system and allowing major water supply project developers to realize the maximum value of "developed" water through re-use and re-application.³⁸ As a result of these and other similar decisions and enactments, Front Range water providers were able to secure vast amounts of West Slope water for diversion to the East Slope.³⁹

The demise of Two Forks and Homestake II reversed the course of water supply planning and development in Colorado, particularly for water providers on the Front Range. Eagle County's defeat of the Homestake II Project demonstrated the new found permitting power of local interests over proposed transmountain diversion projects.⁴⁰ With the authority conferred to counties and municipalities in House Bill 1041, Front Range water providers could no longer steamroll West Slope interests in developing additional transmountain water supplies.⁴¹ Today, local permitting has the potential to pose as significant a hurdle for proposed transmountain diversion projects as any federal and state levels of review.

Changing Water Supply Responsibilities on the Front Range

If Homestake II represented the decentralization of permitting authority over transmountain diversion projects, the demise of the Two Forks Project represented the decentralization of the planning authority over such projects, particularly with respect to Denver Water. Prior to EPA's veto of the Two Forks Project, suburban areas growing up around the City of Denver would often elect to be annexed into the city in order to obtain water supplied by Denver Water, and even areas that avoided annexation would still contract with Denver Water for their water supplies.⁴² As the population on the Front Range exploded in the latter half of the twentieth century (see Figure 3), water planning was increasingly centered around Denver Water.

In the wake of the Two Forks veto, it became clear that Denver Water could no longer take responsibility for the water supply future of a rapidly expanding Denver metropolitan area.⁴³ As Denver Water's board of directors finally concluded, there were too many political, legal, and economic constraints, and too few opportunities to



Metro Denver comprises Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties. Northern Colorado comprises Larimer and Weld counties. (Metro Denver Economic Development Corporation)



Figure 4. In March of 2009, workers began pouring the foundation for the 10 million gallon Robertsdale Tank, a key component of the Prairie Waters Project. (Aurora Water)

develop significant new water supplies, for Denver Water to continue to plan for potentially unlimited population growth.⁴⁴ In 1993 Denver Water announced that it would no longer enlarge its service area, instead drawing a defined service area boundary.⁴⁵

Denver Water's decision to limit its service area had widespread implications for other water providers on the Front Range. Most importantly, the decision meant that booming suburban areas excluded from Denver Water's service area would be forced to find water supplies for themselves, without the option of relying on Denver Water's senior conditional West Slope water rights.⁴⁶ Without

identifiable sources of water to meet projected future demands, Front Range communities have had to scramble to develop additional water projects, a challenging and expensive task in Colorado today. The City of Aurora, for example, is close to completing the \$754 million Prairie Waters Project, which will recycle used water from the South Platte River in order to boost the city's water supplies by some twenty percent (see Figure 4).⁴⁷ Similarly, the Parker Water and Sanitation District has begun construction on the Rueter-Hess Reservoir, with an expected capacity of roughly 77,000 acre-feet of water, some of which is expected to be recycled (though the district has yet to identify the source for a large portion of the reservoir's capacity).⁴⁸ These projects represent not only groundbreaking water conservation and reuse projects, but also the available options for municipalities seeking additional water in Colorado's ever-tightening water supply.⁴⁹

The Two Forks veto also forced Denver Water to revise its overall strategy for developing additional transmountain water supplies. Not only did Denver Water recognize the need to pursue water projects in an environmentally responsible manner, but more importantly, it decided not to undertake any future transmountain diversion projects without first securing the cooperation of effected West Slope entities.⁵⁰ The need for such a cooperative approach to future water supply projects has since been recognized by other Front Range water providers.⁵¹ Today water interests on the Front Range recognize that new transmountain diversion projects will only be built if they are mutually beneficial to both sides of the Continental Divide.⁵²

The Windy Gap Firming Project, Moffat System Expansion and Other Current Project Proposals

The negotiations surrounding the two most recent transmountain diversion proposals – the Municipal Subdistrict's Windy Gap Firming Project and Denver Water's Moffat System Expansion – demonstrate the level of cooperation required for such projects to survive beyond the conceptual stage. First, both projects follow the implementation of progressive water conservation measures on the East Slope, a step that West Slope interests have demanded occur before additional diversions are even considered.⁵³ Likewise, both projects employ existing facilities and infrastructure and previously decreed conditional water rights, which West Slope interests have also demanded.⁵⁴

Yet the most important part of the Windy Gap Firming Project and Moffat System Expansion are the potential West Slope benefits currently being proposed as part of the projects. The Municipal Subdistrict and Denver Water have teamed up to offer a package of West Slope mitigation measures that would compensate for the impacts associated with both projects.⁵⁵ These measures include voluntary bypasses for transmountain diversion structures, as well as financial support for improved wastewater treatment and stream habitat restoration in the upper Colorado River Basin.⁵⁶ Currently, West Slope interests are reviewing the proposal and negotiations are far from complete.⁵⁷

Yet the process that is unfolding promises a new chapter in water supply development for Colorado. As one Grand County commissioner said in reaction to the proposal, “Maybe West Slope and East Slope can work together for the good of Colorado.”⁵⁸

The potential for additional transmountain diversions is a reality that West Slope interests must be prepared for. According to the most recent state estimates, Colorado’s population is expected to nearly double by 2050, requiring between 830,000 and 1.7 million acre-feet of additional water to meet municipal and industrial needs.⁵⁹ In addition to these “consumptive” demands, the Basin Roundtables are currently working to identify the “nonconsumptive” water needs (i.e., environmental and recreational needs) within their respective basins.⁶⁰ The Interbasin Compact Committee (IBCC) is attempting to identify a range of water supply development scenarios that can meet the state’s consumptive and nonconsumptive needs, and the various approaches rely on a mix of conservation, agricultural transfers, and new water supply development.⁶¹

Three major transmountain diversions are the current focus of planning efforts related to the Interbasin Compact Process – the Colorado River Return, the Yampa Pumpback, and the Flaming Gorge Pipeline.⁶² The Colorado River Return, also known as the “Big Straw,” would pump water from the Colorado River at the state border back up the mainstem of the Colorado River to the Continental Divide, somewhere near Avon.⁶³ One route for the proposed pipeline would transect the Roaring Fork Valley, crossing through the Four-Mile Creek area.⁶⁴ The Yampa Pumpback would divert water downstream of Craig, pump the water upstream and through the North Platte River Basin, to be discharged into the Poudre River and the South Platte River Basin.⁶⁵ Finally, the Flaming Gorge Pipeline would carry water from the Green River and the Flaming Gorge Reservoir (in southwestern Wyoming) to Colorado’s Front Range.⁶⁶

The IBCC is currently trying to develop a better idea of the feasibility of each project and the degree to which they could help address Colorado’s long-term water needs. The IBCC discussions could potentially lead to the authorization of one or more of these projects. The Interbasin Compact Process provides a structured means by which opposing interests can be identified and negotiations initiated at an early stage – to ensure that project proposals are not derailed. Thus, while transmountain diversion projects have never been more complicated or expensive, they also are again attainable. West Slope water interests must be vigilant to ensure that any future transmountain diversions are in the best interests of both the West Slope and the State of Colorado as a whole.

¹ See Cyrus Thomas, "Agriculture of Colorado," reprinted in Ferdinand V. Hayden, *Preliminary Field Report of the United States Geological Survey of Colorado and New Mexico*, Govt. Printing Office, 133-155 (1869).

² Carl Ubbelohde, Maxine Benson, and Duane A. Smith, *A Colorado History*, 56-62 (7th ed., Pruett Publ. Co. 1995)

³ *Id.* at 65-66. (Two gold strikes that generated much of the attention were at Gold Hill, near the present-day City of Boulder, and Gregory Gulch, near Blackhawk.)

⁴ *Id.* at 60, 62.

⁵ See Thomas, *supra* n. 1 at 142 (noting that, as of 1869, roughly one-fifth of Colorado's population was engaged in farming, "But the one must draw the other – those who mine must eat – and the heavy expense of bringing food from the States is working out its own cure. The necessity for moving forward the agricultural interests of the country are being felt and acted on.") See also Thomas, *supra* n. 1 at 154 (estimating that Colorado's crop of 1869 included 675,000 bushels of wheat, 600,000 bushels of corn, 550,000 bushels of oats and barley, and 350,000 bushels of potatoes and other vegetables, which, when the hay and dairy product were included, had a potential market value of not less than \$3.5 million).

⁶ *Id.* at 150 (noting that the practice of forming mutual ditch companies was widely employed, as it greatly reduced the cost of irrigating large areas of previously undeveloped lands).

⁷ *Id.* at 140 (noting that "The troublesome factor in the great problem of the development of the agricultural capacity of the vast western plains is the supply of water. Furnish this, and the 'Great American Desert' of old geographers will soon become one mighty field of flowing grain. Furnish this, and the few other minor impeding factors will soon be eliminated.")

⁸ See e.g., Frederick Haynes Newell, "Report on agriculture by irrigation in the western part of the United States at the Eleventh Census: 1890," U.S. Census Office (1894) (describing annual river calls on the Arkansas River, in Chaffee County (p. 104) and Fremont County (p. 110), as well as annual river calls on the South Platte River, in Jefferson County (p. 114)). See also Dick Wolfe, "Surface Water and Ground Water Administration in Colorado: Water 101," State Engineers Office (Feb. 24, 2004) (available at <http://water.state.co.us/pubs/presentations/wateradmin101.pdf>).

⁹ Colorado is still grappling with what is commonly referred to as the "80-20" problem, which refers to the fact that roughly 80 percent of the state's population resides on the East Slope, where only 20 percent of the state's precipitation falls.

¹⁰ Phyllis J. Perry, *It Happened in Rocky Mountain National Park*, Morris Book Publishing Co., 36 (2008). See also C. W. Buchholtz, *Rocky Mountain National Park: A History*, Colo. Assoc. Univ. Press (1983).

¹¹ Initially the ditch was called the "Grand River Ditch," but the name was changed in 1907, when the name of the Grand River was changed to the Colorado River.

¹² *Id.* at 37.

¹³ The 14.3 mile-long Grand Ditch runs east from Baker Creek, at an elevation of about 10,300 feet, to La Poudre Pass, at an elevation of 10,179 feet, an average grade of less than 0.2 percent.

¹⁴ The first transmountain diversion in Colorado occurred near Fairplay in 1860. Built for mining purposes, the ditch was shortly abandoned after local placer mining played out. The earliest transmountain diversion still in operation is the Ewing Ditch, constructed in 1880, which diverts water from the headwaters of the Eagle River to the Arkansas River Basin.

¹⁵ Perry, *supra* n. 11 at 36.

¹⁶ Roaring Fork Watershed Plan, "The State of the Roaring Fork Watershed Report," § 2.2.3 (Nov. 2008) (available at <http://www.roaringfork.org/sitepages/pid175.php>.)

¹⁷ Peter D. Nichols, Megan K. Murphy, and Douglas S. Kenney, "Water and Growth in Colorado: A Review of Legal and Policy Issues," Natural Resources Law Center, Univ. of Colo. School of Law (2001).

¹⁸ Robert Autobee, “Colorado-Big Thompson Project,” Bureau of Reclamation History Program (1996) (available at http://www.usbr.gov/projects/Project.jsp?proj_Name=Colorado-Big%20Thompson%20Project&pageType=ProjectHistoryPage)

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* (The roadblock in Congress was Representative Edward T. Taylor, from Glenwood Springs, who was a member of the House Appropriations Committee and the former chair of the House Committee on Irrigation of Arid Lands.)

²² The Bureau of Reclamation completed the Uncompahgre Project in 1912 and the Grand Valley Project in 1917, allowing for the irrigation of tens of thousands of acres in the Grand, Gunnison, and lower Uncompahgre valleys.

²³ See R. Autobee, *supra* n. 18. See also Steven Schulte, “HB 1177: Water War and (or) Peace?,” *Colo. Water*, 7 (Aug. 2005).

²⁴ This agreement was memorialized in the congressional authorization for the C-BT Project, known as “Senate Document 80.” The complete title of Senate Document 80 is “Synopsis of Report on Colorado Big Thompson Project, Plan of Development and Cost Estimate, prepared by the Bureau of Reclamation, Department of the Interior, 75th Congress, First Session, June 15, 1937.”

²⁵ Erik Kuhn, “Green Mountain Contracting Policy,” Memo to Board of Directors, Colo. River Water Conserv. Dist., Oct. 8, 2009 (available at <http://www.crvcd.org/media/uploads/20091020gm.pdf>).

²⁶ Colo. Rev. Stat. § 37-45-118(b)(II) (Lexis 2008) (requiring that the facilities of a water conservancy district must be designed, constructed, and operated in such manner that present appropriations and prospective uses of water within the Colorado River Basin “will not be impaired nor increased in cost.”)

²⁷ In 1979, the Colorado Supreme Court ruled that the Windy Gap Project had to comply with the Water Conservancy Act. *Colo. River Water Conserv. Dist. v. Mun. Subdist., N. Colo. Water Conservancy Dist.*, 610 P.2d 81 (Colo. 1979). The decision led to the 1980 Azure-Windy Gap Agreement whereby the proposed Azure Reservoir would serve as the compensatory component to the Windy Gap Project. In 1982, the Municipal Subdistrict proposed building a major pumpback project to satisfy its obligation to build the Azure Reservoir. After the Colorado River Water Conservation District, the Middle Park Conservancy District, and Grand County objected, the parties agreed to an Azure-Windy Gap supplemental agreement, whereby the Municipal Subdistrict provided the River District with \$10.2 million for the construction of Wolford Mountain Reservoir. See Erik Kuhn, “Historical Perspective for 2007,” *Colo. River Water Conserv. District* (Jan. 16, 2007).

²⁸ The three transmountain diversion projects subject to the compensatory storage requirement are the C-BT Project, the Windy Gap Project, and the Fryingpan-Arkansas Project.

²⁹ Nichols *et al.*, *supra* n. 17 at 42-43.

³⁰ This trend is not, however, certain to continue. While significant growth is projected for the Front Range, the West Slope, along the Colorado River mainstem in particular, is actually expected to grow at a faster rate. Municipalities, even more so than farms, require a high degree of certainty in their water supplies, necessitating water storage systems that can continue to provide a steady supply of water during droughts and the lower winter flows. Likewise, snowmaking often requires water during lower winter flows, which can also drive the demand for additional water storage. Yet, while the need for additional storage capacity is possible in the future, there is no *currently foreseeable* demand to justify new compensatory storage projects (see subsequent endnote).

³¹ The three main compensatory storage reservoirs – Green Mountain, Ruedi, and Wolford Mountain – have excess capacity that is currently not under contract. The total amount of uncontracted water for each of these reservoirs is as follows: Green Mountain Reservoir, 10,289 acre-feet; Ruedi Reservoir, 16,700 acre-feet; and Wolford Mountain Reservoir, 20,000 acre-feet. This water is reserved for the future needs of the West Slope, and its availability counteracts any proposed additional compensatory storage.

³² N.W. Colo. Council of Govts., “Job Generation in the Colorado Mountain Resort Economy: Second Homes and Other Economic Drivers in Eagle, Grand, Pitkin, and Summit Counties,” (Jun. 2004) (available at <http://www.nwc.cog.co.us/index.php/resources/nwccog-reports-studies/>)

³³ U.S. Env'tl. Protec. Agency, Region VIII, "Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act," (Mar. 1990) (EPA based its decision on the fact that "Construction and operation of the project would have unacceptable adverse effects on fishery areas (including spawning and breeding grounds), wildlife, and recreation areas. Furthermore, the record demonstrates the existence of practicable, environmentally less damaging alternatives to the proposed project.")

³⁴ See *City of Colo. Springs v. Bd. of Co. Commrs.*, 895 P.2d 1105 (Colo. App. 1994).

³⁵ Denver Water, "Water for Tomorrow: An Integrated Water Resource Plan," 4 (Feb. 2002) (noting that "In the era before environmental regulation, Denver Water's planning consisted largely of turning to the structural project that was least costly and highest-yielding to meet increased water demand") (available at <http://www.denverwater.org/SupplyPlanning/Planning/FutureWaterSupply/IntegratedResourcePlan/>).

³⁶ Dan A. Tarlock and Sarah B. Van de Wetering, "Growth Management and Western Water Law: From Urban Oases to Archipelagos," 5 *Hastings W.-N.W. J. of Env'tl. L. & Policy* 163, 172 (1999).

³⁷ *City and Co. of Denver v. Sheriff*, 105 Colo. 193, 202 (Colo. 1939) (holding that "it is not speculation but the highest prudence on the part of the city to obtain appropriations of water that will satisfy the needs resulting from a normal increase in population within a reasonable period of time.")

³⁸ Colo. Rev. Stat. § 37-82-106 (Lexis 2009). For a detailed history of the development of this provision, see *City of Thornton v. Bujou Irrigation Co.*, 926 P.2d 1 (Colo. 1996).

³⁹ See P. Nichols, *supra* n. 17 at 39-40.

⁴⁰ For further discussion, see section on House Bill 1041 and the Homestake II dispute in the main body of this report.

⁴¹ See Geoffrey M. Craig, "House Bill 1041 and Transbasin Water Diversions: Equity to the Western Slope or Undue Power to Local Government?," 66 *U. Colo. L. Rev.* 791 (1995).

⁴² Denver Water, *supra* n. 35 at 2.

⁴³ *Id.* at 2-3.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ See Ed Marston, "Ripples grow when a dam dies," *High Country News* (Oct. 31, 1994) (quoting Chips Barry, Manager for Denver Water, on the changes to his organization's water policy in the wake of the Two Forks veto: "We won't solve the water supply problem for the Front Range. North Douglas County (Castle Rock, Parker, et al) doesn't have a water supply, and we're not going to provide one.")

⁴⁷ See *Prairie Waters Project website*, "Project Overview," (2007) (available at <http://www.prairiewaters.org/>).

⁴⁸ See U.S. Army Corps of Engrs., Omaha Dist., "Supplemental Environmental Impact Statement: Rueter-Hess Reservoir Expansion" (Nov. 2007).

⁴⁹ See e.g., Bruce Finley, "Parker water board recall fails," *Denver Post* (Dec. 17, 2009).

⁵⁰ Denver Water, *supra* n. 35 at 8.

⁵¹ See George Sibley, "Colorado's Water for the 21st Century Act: Finally doing the right thing?," *Headwaters*, 7 (Spring 2009).

⁵² For a current example of such negotiations, see Tonya Bina, "Grand County hopes to benefit from Front Range water-firming projects," *Sky-Hi Daily News* (Jan. 15, 2010).

⁵³ See Mun. Subdist., “Facts: The Windy Firming Project,” 1 (2009) (available at <http://www.chimneyhollow.org/Press.aspx>). Also see U.S. Army Corps of Engrs., Omaha Dist., “Draft Environmental Impact Statement: Moffat Collection System Project,” ES-2-4, 6 (Oct. 31, 2009) (available at <https://www.nwo.usace.army.mil/html/od-tl/eis/moffat-deis-docs.html>).

⁵⁴ *Id.* Regarding the West Slope’s position on transmountain diversion projects, see Colo. River Water Conserv. Dist., “Existing Transmountain Diversion Projects” (Jul. 15, 2008); see also Colo. River Water Conserv. Dist., “Transmountain Water Diversions” (Apr. 16, 2008) (both documents available at http://www.crwcd.org/page_9).

⁵⁵ Mark Jaffe, “Colorado water war ends in deal,” *Denver Post* (May 1, 2009) (despite the article’s intimation, no deal has yet been struck). See also Denver Water, Citizens Advisory Comm., “CAC Minutes for Meeting of May 21, 2009” (May 21, 2009) (noting that the agreement is not yet formalized).

⁵⁶ *Id.*

⁵⁷ Color. River Water Conserv. Dist., “Minutes: Third Quarterly Meeting of the Board of Directors of the Colorado Water Conservation District,” 2-3 (July 21-22, 2009).

⁵⁸ As quoted in Jaffe, *supra* n. 55.

⁵⁹ Colo. Water Conservation Bd., “Draft Report – State of Colorado 2050 Municipal and Industrial Water Use Projections,” §§ 2.2 and 5.2 (Jun. 2009) (available at <http://cwcb.state.co.us/IWMD/COsWaterSupplyFuture/CosWaterSupplyFuture.htm>).

⁶⁰ Colo. Rev. Stat. § 37-75-105(2)(c) (Lexis 2008).

⁶¹ See Colo. Water Conservation Bd., “Draft Report – Strategies for Colorado’s Water Supply Future” § 1.2.2 (2009)

⁶² *Id.* at § 4.1.1.2.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*