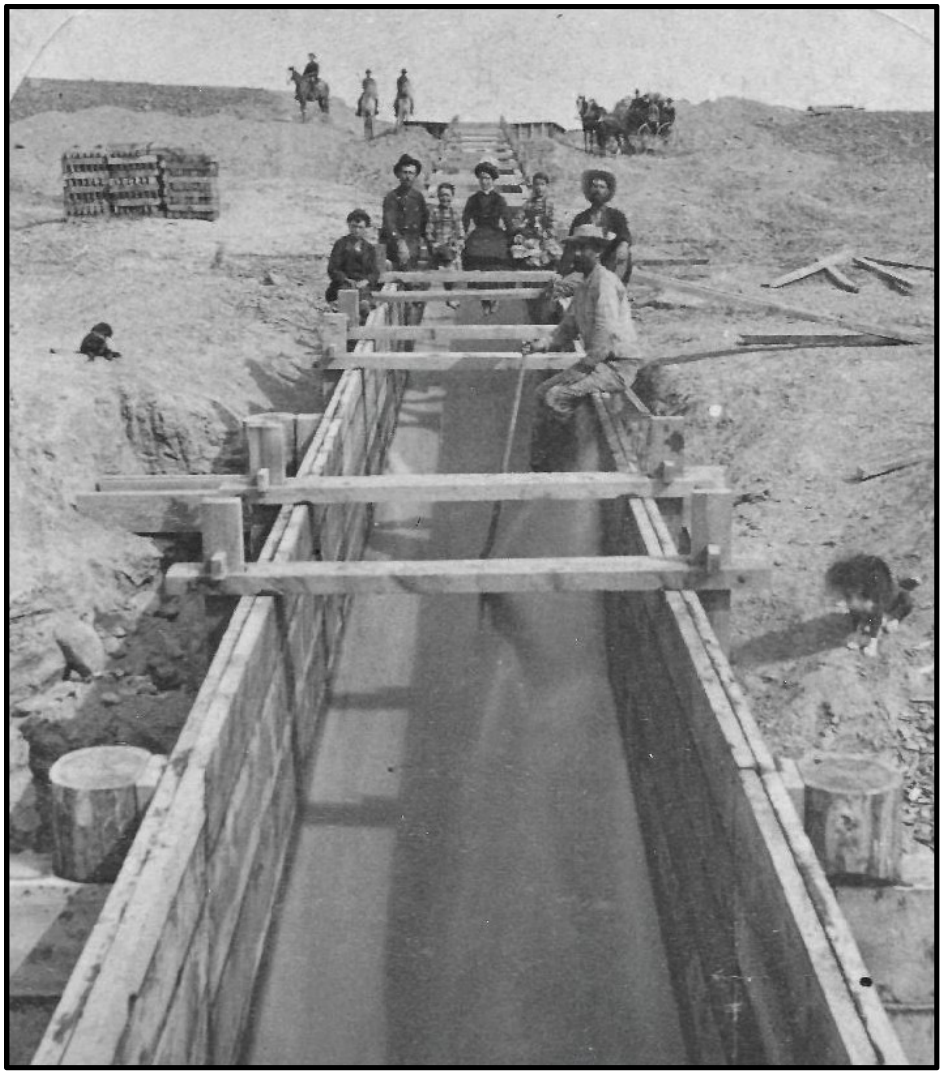

History of the Grand Valley Irrigation Company and its Predecessor Companies and Canals

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ALPINE ARCHAEOLOGICAL CONSULTANTS, INC.

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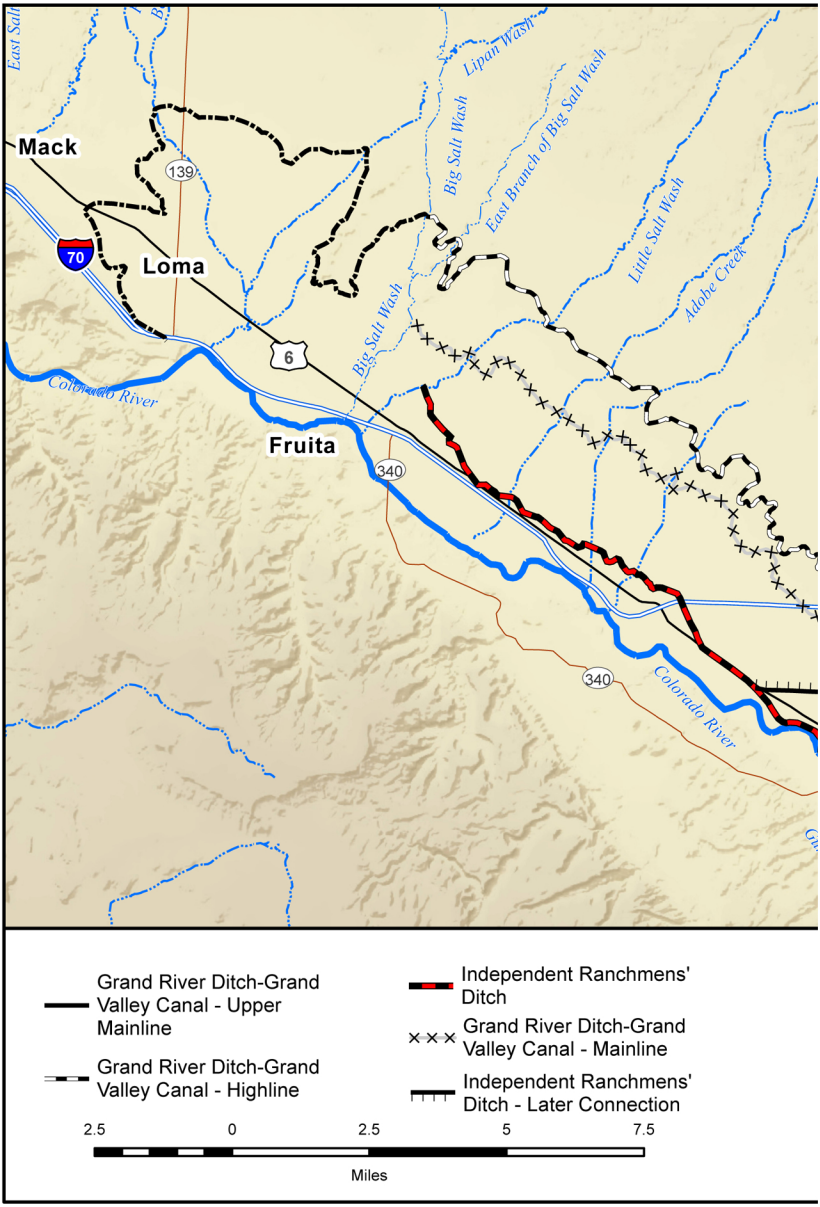
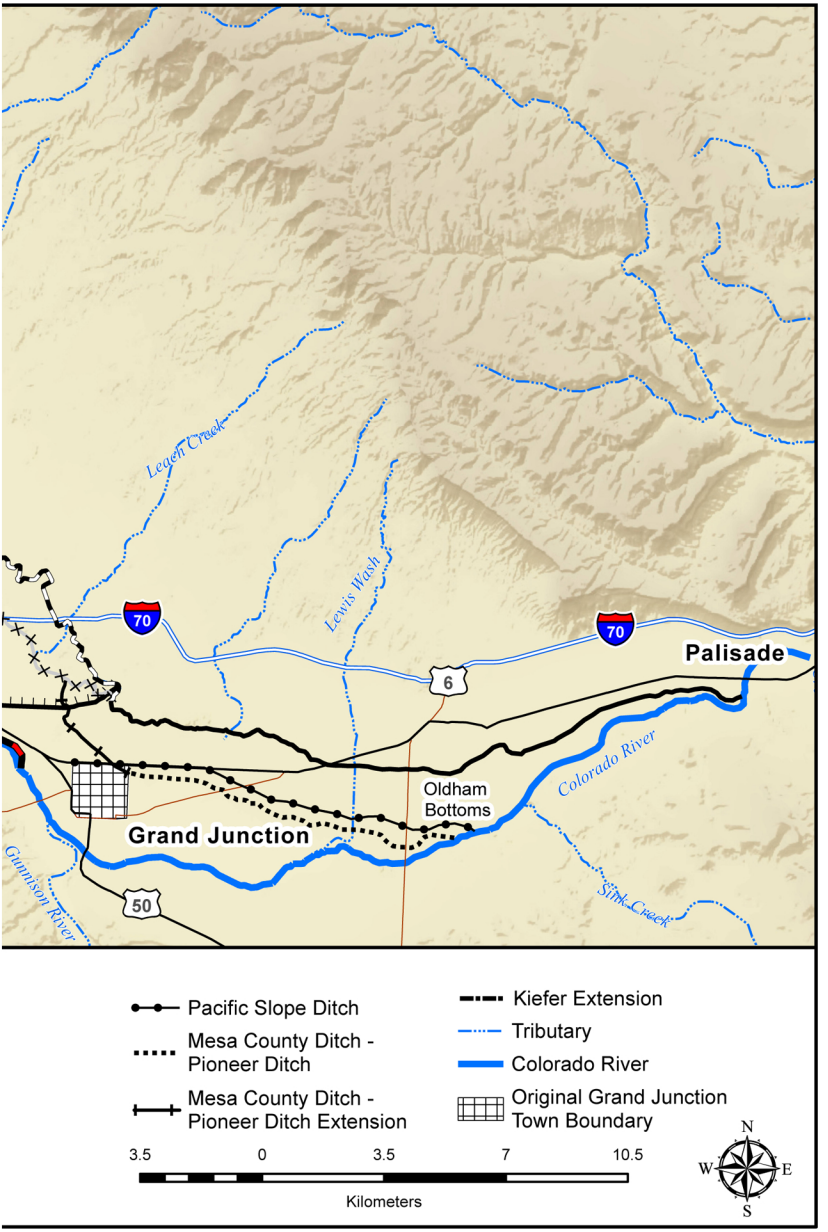


Historic ditches associated with the Grand Valley Irrigation Company.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Silt Creek
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Pioneer Ditch
Mesa County Ditch -
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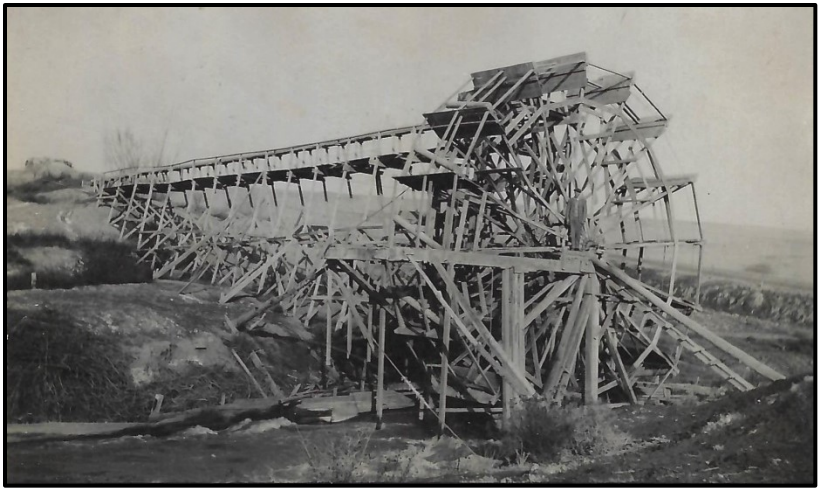
INTRODUCTION

The Grand Valley Irrigation Company (GVIC) is the largest and longest-operating mutual ditch company in the Grand Valley of western Colorado. Established in 1894, the GVIC manages a complex system of irrigation ditches and canals that run nearly the full length of the northern side of the Grand Valley from Palisade on the east to Mack on the west. The current irrigation system represents a consolidation of several early irrigation ditches that date to the early 1880s and made large-scale agricultural settlement of the Grand Valley successful. The main canal of the system is the Grand Valley Canal (originally known as the Grand Valley Ditch), comprised of the Upper Mainline Canal and Mainline and Highline laterals. Incorporated into the system are the Pioneer Ditch/Mesa County Ditch, Pioneer Extension Ditch, the Independent Ranchmens' Ditch, and Kiefer Extension Ditch. The history of these early canals and ditches incorporates optimistic foresight, industrial-scale construction requiring immense outlay of capital from outside investors, financial difficulties, and, finally, local control of the irrigation system through the GVIC. The impetus for the preparation of this history was improvement work on the GVIC's Highline Canal, but it is not possible to tell the history of that portion of the system in isolation because of it being a component of the larger irrigation system.

OPPORTUNITIES AND CHALLENGES IN IRRIGATING THE GRAND VALLEY

The Grand Valley is distinctly different from other areas of the western United States because of the productivity of the land, available water, and the variety of crops grown, as described by a 2011 Master's thesis by Joshua L. Becker (2011). The Grand Valley was in an enviable position to have the abundant water of the Colorado River directly available for irrigation; however, this beneficial location had its limitations, too. Because water flows downhill, a limiting factor in how much land could be converted to agriculture was the elevation at which water could be taken from the river. The lower end of the canyon where the Colorado River enters the Grand Valley near Palisade was the first and highest point where water could be taken from the river. The location limited the potential acreage that could be irrigated to land that was lower in elevation than the point where water was diverted. This was of minor consequence to the initial settlers of the valley because there was plenty of good land to settle upon, but later settlement on higher-elevation lands on the northern margin of the Grand Valley and on places like Orchard Mesa required technological innovations to enable water from the Colorado River to serve those lands. In some cases, water wheels were used to lift water above the level of ditches to serve land that was slightly above an existing ditch.

Later, pumping plants were installed to lift water even higher, such as is still used by the Orchard Mesa Irrigation District to irrigate Orchard Mesa. Still later, the Grand Valley Project of the Bureau of Reclamation diverted water within the canyon and transported it through the Government Highline Canal that required tunnels to be built through previously impenetrable canyon sides. Because of these innovations, water became available to irrigate higher-elevation farmland on the northern edge of the Grand Valley and previously unserved lands in the Mack and Loma areas, nearly to the Utah border.



A wooden water wheel designed and constructed by John A. Wellington to take water from the Grand River Ditch in 1896. The 34-foot-diameter wheel lifted water 30 feet to irrigate Wellington's land on what was known as Wellington Heights above the canal east of 12th Street just below Patterson Avenue (on file at the GVIC, Grand Junction).

INITIAL SETTLEMENT OF THE GRAND VALLEY

The removal of the Ute Indians from most of western Colorado in September 1881 opened large expanses of potentially arable land in the Grand Valley to Euroamerican settlement where the newly formed town of Grand Junction was situated at the confluence of the Gunnison and Colorado rivers. Settlers swooped in and took up choice lands along the Colorado River and began attempts to divert water from the river onto nearby acreages. Water was abundantly available from the Colorado and Gunnison rivers, which were largely untapped and completely unfettered by dams with nearly all of the water continuing westward into Utah and beyond. Small groups of farmers joined together to build the first irrigation ditches. Most of these early ditches—the Pacific Slope Ditch, mostly to provide the fledgling town of Grand Junction with

drinking water; the Pioneer Ditch, and the Grand Valley Ditch—reached limited numbers of small farms by early 1882. To fully take advantage of the available land suitable for agriculture and the abundance of water in the Colorado River, a more highly capitalized and ambitious water-distribution system was needed. Irrigated agriculture on large scales was nothing new to Colorado, having been carried out on the eastern plains over the previous two decades. During its initial settlement, the Grand Valley was difficult to access, so the initiation of irrigation expertise had to await the arrival of the Denver & Rio Grande Railroad (D&RG) in November 1882, which was built from Gunnison by way of the new towns of Montrose and Delta along its route. In 1883, the line was extended westward to Salt Lake City, essentially making the line a transcontinental connecting route. Because the Grand Valley had the longest growing season in the state, abundant water availability, and a large valley of fertile land, it did not take long for visionary water developers to seize the opportunity and develop a complex irrigation system to serve the area (Becker 2011).

GRAND VALLEY DITCH

The first official appropriation of water from the Colorado River to irrigate the Grand Valley was on August 22, 1882, for the Grand Valley Ditch. The ditch had earlier origins, having initial construction done by William and Elihu [Elisha] S. Oldham, and John F. Biggles. The initial water right of 520.8 cubic feet per second (cfs) for the current Grand Valley Canal is from that original ditch and the water appropriated for other ditches that were incorporated into the system in the 1880s. The Oldhams were brothers that homesteaded adjacent claims at what became Oldham Bottoms on the northern side of the Colorado River just south of Clifton. Their sister, Margaret Oldham, also homesteaded an adjacent claim, and Biggles homesteaded a claim on the

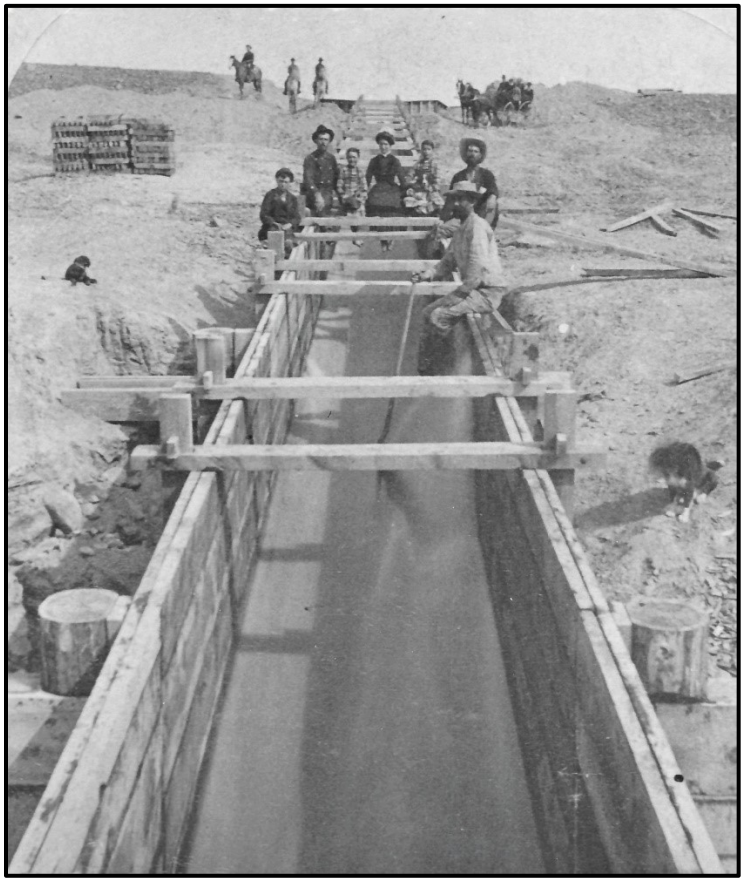
eastern end of Oldham Bottoms. The Oldhams arrived in the Grand Valley in October 1881 and conceived of what they called the Grand Valley Ditch to carry water to their homestead claims in Oldham Bottoms and beyond. As was typical of initial ditch construction efforts, it was a cooperative venture using their own labor and limited capital, so it served very limited amounts of land. They took up a collection from their neighbors to have a route surveyed and installed a headgate where the current headgate of the Grand Valley Canal is situated just south of Palisade (Davidson 1986:4–5; *The Avalanche-Echo* [Glenwood Springs], March 28, 1907:7; *Palisade Tribune*, March 5, 1915:1).

Although planned to go farther, the primitive ditch did not extend much beyond Oldham Bottoms. The Oldhams, Biggles, and William F. Cline, a farm laborer that resided with the Oldhams, sold a controlling interest in the Grand Valley Ditch to Matt Arch in late 1882, which included their four primary water rights of 150 statutory inches of water each, or 40.3 cfs of water for a total of 161.2 cfs. By February 10, 1883, three of the original four water rights were owned by William Oldham, Elihu Oldham, and William Cline, with the final water right divided in half among John Biggles and Barney K. Kennedy (Mesa County Clerk's Office, Deed Book 10, Pages 2–3). Arch was a rancher on Tomichi Creek east of Gunnison, who saw the agricultural potential of the Grand Valley and had a larger vision for its agricultural development. He was determined to build a canal through the Valley's length to make agriculture succeed. He changed the name of the ditch from the Grand Valley Ditch to the Grand River Ditch and formed the Grand River Ditch Company on January 8, 1883 with amended Articles of Incorporation signed on February 27, 1883. Arch was the president, and the former owners served as the board of directors. The new company offered $200,000 in capital stock in $10 shares to finance the construction (Davidson 1986:6; Grand Valley Irrigation Co. 2008).

The original headgate for the Grand River Ditch constructed in 1883 (on file at the GVIC, Grand Junction).

Arch teamed up with John F. Dailey, formerly a grading contractor for the D&RG, who probably did most of the earthwork on the canal. Work began immediately on the 25–30-foot-wide and 3–4-foot-deep canal. Above the town of Grand Junction, 17 miles from the headgate, the canal reached a difficult spot in early February 1883 where the direct line required considerable work to proceed. To temporarily avoid the problematic spot, the canal was divided, and the main line of the canal was dropped 30 feet in elevation by way of a chute so that it could expeditiously continue westward through more hospitable terrain. This drop was subsequently known as the "Great Drop" (*Gunnison Review-Press*, February 3, 1883:1). The upper route, initially known as the Highline, subsequently known as the Fruita Lateral, and now known as the Grand Junction Irrigation Highline Canal, was completed later. The most important objective at the time was to construct the canal as far west as possible in the shortest amount of time so that the most land could be served for the 1883 irrigation season.

By March 1883, the company had not fully subscribed the company shares and was out of money, so Arch made arrangements through Gunnison attorneys Stephen R. Pratt and Franklin S. Johnson to secure financing. The Grand River Ditch Company executed a Deed of Trust to Johnson, which noted that contractors on the canal had already performed $62,500 of work and were entitled to receive a total of $75,000 when construction was completed.



A wooden flume conveys water down the big drop below the division of the Highline and Mainline laterals of the Grand River Ditch about 1883 (on file at the GVIC, Grand Junction).

The company authorized the issuance of 150 bonds at $500 each with an interest rate of 10 percent per year to cover the $75,000 construction cost on March 5, 1883. Capitalization through the sale of bonds was to investors outside the area who hoped to recoup their investment through interest payments on the bonds that they purchased. Investors had to have faith that companies building irrigation systems would succeed in completing their projects and that farmers utilizing the water would be able to pay for the water that they needed to raise crops. Investors were counting on projects enabling farmers to flourish individually and that their success would enable the irrigation companies to pay their indebtedness, with regional prosperity being the result.

The bonds of the Grand River Ditch Company were sold to Theodore C. Henry on March 30, 1883. Henry, formerly of Abilene, Kansas, sought investment opportunities in Colorado and had moved to Denver where he formed the Colorado Loan & Trust Company. To oversee his investment in the canal and other properties in the Grand Valley, Henry appointed William E. Pabor as the local manager of his subsidiary Grand Junction Loan & Trust Company (*Gunnison Review-Press*, April 9, 1883:1; April 25, 1883:1; *Denver Tribune*, April 5, 1883:4). Pabor had a strong interest in seeing the canal completed for its full length, as he was the developer of the new town of Fruita. Successful irrigation of the land in its vicinity was necessary for the town to develop. With the fresh influx of money, Arch moved forward with the canal. In order to speed up the construction, a construction company operated by the Crandall family of Springville, Utah, was hired; they had considerable experience grading railroad lines. With much fanfare, water from the Colorado River was opened into the canal through its headgate on May 16, 1883, heralding a new era of agriculture in the Grand Valley (Davidson 1986:10-14; *Gunnison Review-Press*, May 19, 1883:6; *Fort Collins Courier*, May 24, 1883:3).

A pile driver is used to construct flumes along the canal routes (on file at the GVIC, Grand Junction).

Having completed the construction as far as he was financially able, Arch sold all of his interest in the canal to the Colorado Loan & Trust Company in early July 1883 (*Gunnison Review-Press*, July 13, 1883:4).[1] The Grand River Ditch was able to carry water to some farmers with the work done by Arch, but required a considerable amount of immediate work to finish and make sound. Control of seepage was nearly as costly as the original construction and required puddling to seal cracks to prevent great water loss. Areas of the canal settled and required extensive reworking and rebuilding to stabilize the canal banks. All of these costs fell onto the Colorado Loan & Trust Company, which passed them on to the farmers that subscribed for water. The high cost of water was disgruntling to the farmers, but considered necessary by Henry, who needed the canal to be profitable as a business venture. To finance upkeep and repairs, Henry, as the Colorado Loan & Trust Company, arranged additional financing from the Travelers' Insurance Company, amounting to $85,000 on December 1, 1883, and consolidated the debt with a new mortgage for $200,000 on November 1, 1884 (Davidson 1986:17; Mead 1902). Henry bundled the debt of the Grand River Ditch with additional debt to the Travelers' Insurance Company for other investment ventures he was involved in. These included the Del Norte Land & Canal Company (now known as the Rio Grande Canal) for $400,000, the Citizen's Ditch Company in

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[1] Arch continued his association with Theodore C. Henry and the Colorado Loan & Trust Company during the initial construction of what was the forerunner of the Montrose & Delta Canal in the Uncompahgre Valley, again with John Dailey. Soon thereafter, Dailey started work on a canal for hydraulic mining at Dallas on the upper Uncompahgre River. Arch took on other irrigation projects, including the Arch Ditch from Tomichi Creek to irrigate land near Doyleville and a large project to irrigate land near Delta from the Gunnison River (*Gunnison Review-Press,* September 19, 1883:1; November 3, 1883:1; December 8, 1883:6; May 13, 1886:4; *White Pine Cone* April 12, 1889:4; *Delta Independent,* March 29, 1890:3; July 1, 1890:1).

the San Luis Valley for $200,000, and the Uncompahgre Canal Company in the Uncompahgre Valley for $200,000. As a result of the restructuring of his loans, Henry was indebted to the Travelers' Insurance Company for $1,000,000, all of which used his various ditch company holdings as collateral. The situation that Henry found himself in was not unusual for early irrigation schemes in Colorado and elsewhere, but it put him and the Grand River Ditch Company in considerable financial jeopardy. With the financing from the Travelers' Insurance Company, Henry was able to complete the Mainline and Highline (Fruita) lateral canals from the divider to Big Salt Wash (Davidson 1986:17).

CONSOLIDATION OF DITCHES UNDER THE GRAND RIVER DITCH COMPANY

In early 1886, the Pioneer Ditch/Mesa County Ditch, Pioneer Extension Ditch, and the Independent Ranchmens' Ditch were consolidated as elements of the Grand River Ditch. This was a natural and logical progression in providing reliable irrigation water in the valley. It also became a logistical necessity because, as was typical of early ditches on the large rivers of western Colorado, spring runoff wreaked havoc on headgates. The headgates for the Pioneer Ditch/Mesa County Ditch and the Independent Ranchmens' Ditch were washed out by high water during the 1886 spring runoff. Rather than rebuilding individual headgates on the river, the ditches were consolidated and served through the single surviving large headgate of the Grand River Ditch. With the reconfiguration, it appears that the Pioneer Extension Ditch ceased to be used, probably superseded by the Independent Ranchmens' Ditch and the Mainline of the Grand River Ditch (Davidson 1986:18). The Pacific Slope Ditch, the initial water supply for the town of Grand Junction is included in the historical narratives below, as it was tied to the Pioneer Extension Ditch, which received its water from the Pioneer Ditch/Mesa County Ditch.

PIONEER DITCH/MESA COUNTY DITCH

Construction of the Pioneer Ditch was started on March 1, 1882, by the initial settlers along its 6.75-mile-long route to serve agricultural land adjacent to the Grand Junction townsite. It was quickly completed on April 20, making it the first ditch finished in the valley. Its headgate was washed out by high water in early May and was replaced by Frank Whitson. The Pioneer Ditch Company was formally incorporated on January 31, 1884, by Thomas B. Crawford, Benjamin F. Jay, M. W. Whitehead, John B. Duckett, and John Davis with $50,000 of capital stock in $10 shares. This was probably done so that the shareholders in the ditch could arrange financing for maintenance and repairs, as the company mortgaged the ditch to the Travelers' Insurance Company on February 8, 1884 (Mesa County Clerk's Office, Deed Book 10, Pages 240–241; Davidson 1986:4–5; *Gunnison Daily Review*, May 9, 1882:2; *Grand Valley Star* [Grand Junction], March 11, 1893:8). That same day, an identical Articles of Incorporation document was prepared for the Mesa County Ditch Company with the same officers and capitalization, but a slightly different headgate location. The two companies and ditches shared a common ditch once their initial diversions from the Colorado River joined. Despite two companies having been formed, the Mesa County Ditch Company was clearly the superior. Plans were immediately made to extend the ditch westward for 27 miles through the entire lower Grand Valley, but this optimistic idea was never realized. Soon after incorporating, the ditches' headgates on the Colorado River washed out, probably prompting the investors to become further indebted to the Travelers' Insurance Company on May 21, 1884, for repairs and maintenance (Davidson 1986:3, 15–16; *Gunnison Review-Press*, February 22, 1883:4; December 21, 1883:2).

PIONEER EXTENSION DITCH

The Pioneer Extension Ditch Company was incorporated on December 15, 1883 with capital stock of $100,000 in $10 shares. Trustees were A. A. Miller, W. A. Rice, P. Sullivan, O. D. Russell, William Nims, and R. F. Carey. Some work on the Pioneer Extension Ditch seems to have taken place from the end of the Pioneer Ditch/Mesa County Ditch on the eastern boundary of Grand Junction at 12th and Teller on what is the western end of Lincoln Park. In 1886, the Pioneer Ditch/Mesa County Ditch was realigned and enlarged from 12 feet wide to 24 feet wide to carry the additional water for the Pioneer Extension Ditch. The Pioneer Extension Ditch Company agreed to pay half of the cost for a new headgate at the existing location at Oldham Bottoms to allow the additional water to enter the ditch (Mesa County Clerk's Office, Deed Book 14, Pages 161–163). By the time the extension ditch was completed, it was 13 miles long from the headgate and terminated at the Grand River Ditch beyond the divider below its "Great Drop." Although initially planned to irrigate farmland throughout the valley, it was also contemplated for industrial water power because of the terrain through which it passed, but it was never used for that purpose.

Looking west along the Pioneer Extension Ditch westward from the crossing of 12th Street probably about 1900 (on file at the GVIC, Grand Junction).

The Pioneer Extension Ditch looking west from 7th Street about 1900 (on file at the GVIC, Grand Junction).

The Pioneer Extension Ditch near 5th Street, probably near the eastern side of Sherwood Park in the 1910s (on file at the GVIC, Grand Junction).

PACIFIC SLOPE DITCH

The Pacific Slope Ditch took its water from the Colorado River just upstream of the Pioneer Ditch in Oldham Bottoms and ran on a course slightly higher in elevation. The Grand Junction Town Company was the impetus behind its construction, as it was envisioned as the water supply for the town in addition to providing for some irrigation. In early April 1882, the company finished negotiations for the construction of the ditch by funding half of the $6,000 cost from donations by local businessmen and half by the Town Company, resulting in its incorporation on April 5, 1882. The ditch route was surveyed by George A. Comstock of the D&RG. To facilitate its construction, the Pacific Slope Ditch Company was formed with George A. Crawford as president, J. A. Layton as vice president, R. D. Mobley as treasurer, and M. L. Allison as secretary. O. D. Russell was the superintendent of the project. Crawford was the president of the Town Company, Layton had a grocery and general merchandise store, Mobley was the Justice of the Peace, Allison had a saloon in Gunnison, and Russell was in the general merchandise business. Work on the 9.5-mile-long Pacific Slope Ditch was started on March 20, 1882, and completed by July 1 with small lateral ditches that carried water along Main, Colorado, and Rood streets. Plans were made to enlarge the ditch to carry sufficient water to plant trees along the streets of Grand Junction. An unfortunate side-effect of running water in ditches along the streets was that the ditches were not well constructed and the streets became quagmires (*Gunnison Daily News-Democrat*, April 10, 1882:1; July 11, 1882:2; *Gunnison Daily Review*, June 28, 1882:1; *Gunnison Review-Press*, February 22, 1883:4; Davidson 1986:5-6). The initial use of the Pacific Slope Ditch as the water supply for the town was superseded by a pumped water system installed by the D&RG in 1883 for their use, which they extended to town. Water was pumped from the Gunnison River and crossed in a pipe supported by the railroad bridge that crossed below the Gunnison River's confluence with the Colorado River. Once on the northern side of the river, the pumped water continued into town in a buried pipe

(Mesa County Libraries 2019; *Grand Junction News*, May 12, 1883:3; November 17, 1883:3). The pumped water system evidently resulted in the abandonment of the Pacific Slope Ditch. Still, the Pacific Slope Ditch Company made an agreement with the Pioneer Extension Ditch Company on May 1, 1884 to ensure the availability of water to the town from the Pioneer Extension Ditch as it traveled through the town boundaries (Mesa County Clerk's Office, Deed Book 23, Pages 458-459). It seems from this document that the Pacific Slope Ditch Company transferred its water to the Pioneer Extension Ditch Company without specifying an amount of water but with the understanding that they could take as much mater as was needed for town use so long as it did not diminish the amount of water intended to irrigate land beyond the town.

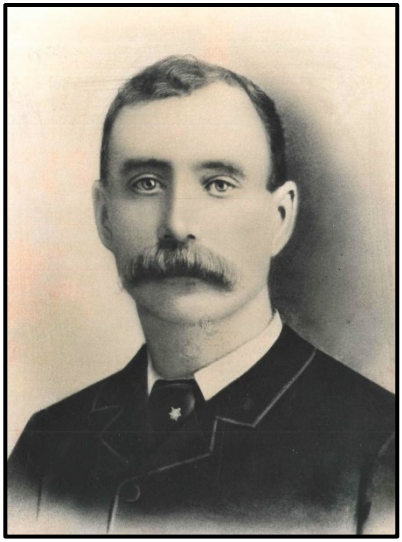
INDEPENDENT RANCHMENS' DITCH

The Independent Ranchmens' Ditch was initiated in late December 1882 and largely completed in 1884 in order to bring irrigation to the western part of the Grand Valley. Initially called the Ranchmens' Ditch under the organization of the Ranchmens' Ditch Company on December 13, 1882, the Independent portion of the name was added in defiance of those that thought the group should support the ditches already under construction instead of developing a ditch of their own. The Independent Ranchmens' Ditch Association was incorporated on April 30, 1883, evidently after acquiring the water rights of Harry Sutton, a settler who homesteaded at what became Fruita. The destination of the canal was land in the vicinity of the planned town of Fairview. Fairview failed to materialize, and Fruita superseded it. The company filed a statement on July 6, 1883, delineating the entire route of the ditch and described it as 20 feet wide and 2 feet deep with a capacity of 79.2 cfs (Mesa County Clerk's Office, Deed Book 10, Pages 65-69). To finance maintenance and construction of the canal, they took out loans from the Travelers' Insurance Company on November 30, 1883 and May 17, 1884.

FINANCIAL WOES AND SUBSEQUENT OWNERSHIP CHANGES

The Travelers' Insurance Company had become the main financier of the Grand River Ditch through the Colorado Loan & Trust Company and was the mortgage holder on the Pioneer Ditch/Mesa County Ditch and the Independent Ranchmens' Ditch. With the consolidation of these ditches in 1886, the Travelers' Insurance Company had a large stake in irrigation in the Grand Valley, along with interests in other land development schemes there. The huge debt that the irrigation companies had acquired was too large for them to handle, and the Travelers' Insurance Company forced the Grand River Ditch Company into receivership in 1888. The outcome was that the assets of the ditch companies were initially placed in the hands of Frank C. Goudy as trustee, who attempted to increase the capacity of the system to accommodate water for an additional 15,000 acres of land. The Grand River Ditch Company remained insolvent, and its assets were sold at a public auction to the Travelers' Insurance Company and placed into the hands of a new company, the Grand Valley Canal Company, which was incorporated on October 23, 1888. From that change in ownership, the former Grand River Ditch became known as the Grand Valley Canal, the name it retains today. The farmers that utilized the water from the ditch system were alarmed at the state of affairs because the canal system was operated by an entity intending to profit from the sale of water. The farmers had no actual ownership of the water and, consequently, paid very high prices for it. In order to shore up the system, Travelers' Insurance Company brought in Walter Graves of Monte Vista to serve as the engineer for the Grand Valley Canal (Mesa County Clerk's Office, Deed Book 1, Page 320; Deed Book 2, Page 195; Deed Book 7, Page 288; Deed Book 20, Pages 379, 383, and 387; Deed Book 23, Page 362; Davidson 1986:18–21; *Grand Valley Star* [Grand Junction], June 7, 1890:5; Mead 1902).

Because of earlier transactions conveying title in the ditches to the Travelers' Insurance Company from the Colorado Loan & Trust Company and the Grand River Ditch Company, the final foreclosure sale was considered to have been a sale by the Travelers' Insurance Company to itself, and its legality was questioned by the Colorado Loan & Trust Company. The illegality of the sale was confirmed by the Second District Court of Colorado in July 1892, so the new trustee for the company, Frank W. Loveland, was ordered to resell the assets of the Grand River Ditch Company. This time, the farmers that utilized the system organized themselves ahead of the sale with the formation of the Grand Valley Irrigation Company (GVIC). They arranged for John P. Brockway to purchase the holdings of the old company as an individual for $40,000. The new company had arranged for $70,000 in bonds to finance their new operation, so retained $30,000 over the cost of the purchase to put toward maintaining and improving the system. The sale was held on April 3, 1893, and the GVIC was formally incorporated on January 29, 1894. The final execution of deeds transferring the holdings from the Grand Valley Ditch Company to Brockway and from Brockway to the GVIC took place on February 10, 1894. The new company was a mutual ditch company, whereby the users of the water were owners of the water and the irrigation system. This changed the water from being a commodity controlled by an outside entity to one they owned as shares tied to the land it irrigated. As owners, they collectively took on the responsibility of maintenance and improvement of the canal system through the GVIC. The operation of the GVIC has continued in this manner to the present day (Davidson 1986:23-24; *Grand Valley Star* [Grand Junction], July 16, 1892:7; March 18, 1893:2; Mesa County Clerk's Office, Deed Book 7, Page 536; Deed Book 4, Page 256; Mead 1902; Newell 1904).




J. S. O'Neil (left), first superintendent, and W. S. Wallace (right), first secretary of the GVIC, 1894–1909 (on file at the GVIC, Grand Junction)

FRUITA AND THE KIEFER EXTENSION DITCH

The town of Fruita was founded by William E. Pabor on May 13, 1884. He was also the prime force in the incorporation of the Fruita Town & Land Company on October 16, 1885, which was the entity that developed the town and sold town lots. Necessary to the success of the town was bringing irrigation water to the nearby agricultural lands. Pabor's early involvement with the development of the Grand River Ditch and later involvement with the Independent Ranchmens' Ditch were key to bringing water to the western portion of the Grand Valley. The Fruita Town & Land Company financed themselves through investment by the Travelers' Insurance Company. When the town company could not pay their debts, Travelers' Insurance Company forced its reorganization, resulting in the incorporation of the Fruita Improvement Company on March 7, 1887 (Mesa County Clerk's Office, Deed Book 20, Pages 442–443). Seeing room for greater real estate development, Joseph P., Benjamin F., and

Frank D. Kiefer incorporated the Cleveland Town & Mercantile Company on August 9, 1890, and established the town of Cleveland on 160 acres on the eastern side of Fruita (Mesa County Clerk's Office, File No. 106). The Kiefers went about selling town lots and nearby agricultural land in hopes of outcompeting Fruita as the most prominent town west of Grand Junction. The Kiefers also depended on the Independent Ranchmens' Ditch for water to the agricultural land they offered for sale. The upstart town did not sit well with the promoters of Fruita and, after considerable wrangling, Cleveland was absorbed into Fruita when Fruita was incorporated as a town on April 12, 1894. This did not stop the Kiefers from continuing their real estate development in the western Grand Valley. On November 27, 1894, Benjamin and Frank Kiefer incorporated the Fruita Canal & Land Company with $100,000 capital in $10 shares. Their plan was to purchase water from the GVIC, utilize additional unused water that reached the end of the Highline Lateral of the Grand Valley Canal, and transport it to unirrigated land northwest of Fruita in the vicinity of Loma and Mack. It is probably from that time that the Highline Lateral of the Grand Valley Canal was informally referred to as the Fruita Lateral. Construction of what became known as the Kiefer Extension Ditch from the end of the Highline Lateral took place over a period of five years and went hand-in-hand with settlement and sale of land along its 16-mile length (Grand Valley Irrigation Co. 2008; Mead 1902).

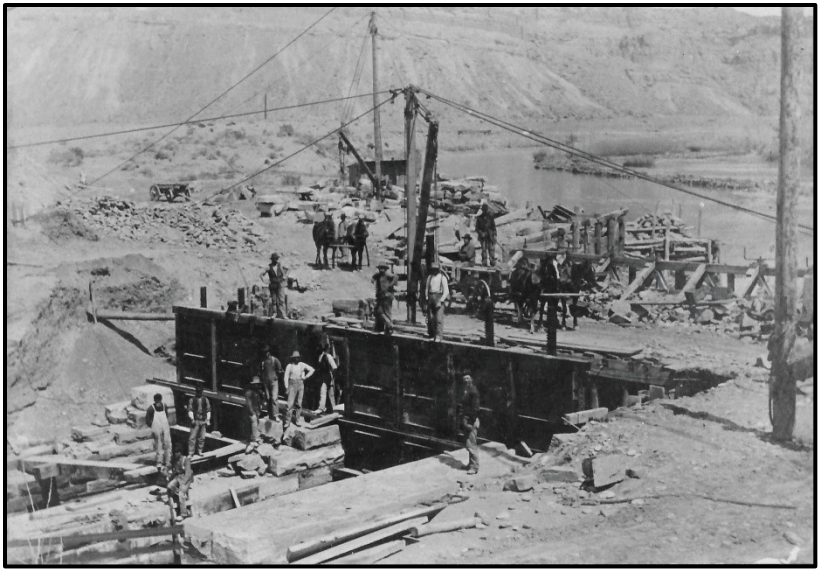
A major development in the settlement of land in the western Grand Valley took place with the entry of the Colorado Sugar Manufacturing Company in 1899. The company was incorporated in Denver by John F. Campion, J. R. McKinnie, Charles Boettcher, Charles M. Cox, Charles E. Mitchell, and George W. Trimble on January 6, 1899. They quickly demanded a concession from Grand Junction and other local communities in the form of deeds donated to the company for 1,500 acres of land on which they planned to plant sugar beets.

This demand was met by the January 20, 1899, deadline, and the company went forward with plans to build a 350-ton-per-day capacity sugar beet processing plant in Grand Junction that was ready for the fall harvest that year (*Herald Democrat* [Leadville], January 6, 1899:1; *Daily Sentinel* [Grand Junction], January 23, 1899:4). The concession was considered a small price to pay, as the ready market provided by the sugar plant for beets grown by local farmers and the influx of farmers and workers to grow beets on the new company's land was considered a boon to the Mesa County economy. It was also expected that the plant would result in new land being put into agricultural production, stimulating land investment and immigration to the area. The new plant began operation in November 1899 and farmers were encouraged to bring their beets to the plant for purchase (*Daily Sentinel* [Grand Junction], November 10, 1899:1; *La Junta Tribune*, December 2, 1899:6). After the first season, the company announced that it planned to send Boettcher to Germany to find 1,000 farm families to move to the Grand Valley to grow sugar beets. It was expected that this influx of immigrant farmers would require the irrigation of an additional 10,000 acres of land. The water for the irrigation of this new farm land was planned to come through the Kiefer Extension Ditch and required an enlargement of the Grand Valley Canal. The GVIC agreed to do the enlargement, but John P. Brockway, who had facilitated the sale of the canal to the GVIC in 1894, objected to the cost of the enlargement being charged to the shareholders of the irrigation company. After a court battle, judgement was made in favor of Brockway and the shareholders. Despite the court battle, enlargement of the Grand Valley Canal was completed in 1901 at a cost of $6,000 (*Daily Sentinel* [Grand Junction], February 16, 1901:2; March 7, 1901:2; April 6, 1901:4; Mead 1902). In the meantime, the sugar company was reorganized under the same name, but without its prominent financial backers. Looking to expand the production of sugar beets, the company made purchases of 2,000 acres near Loma and 2,500

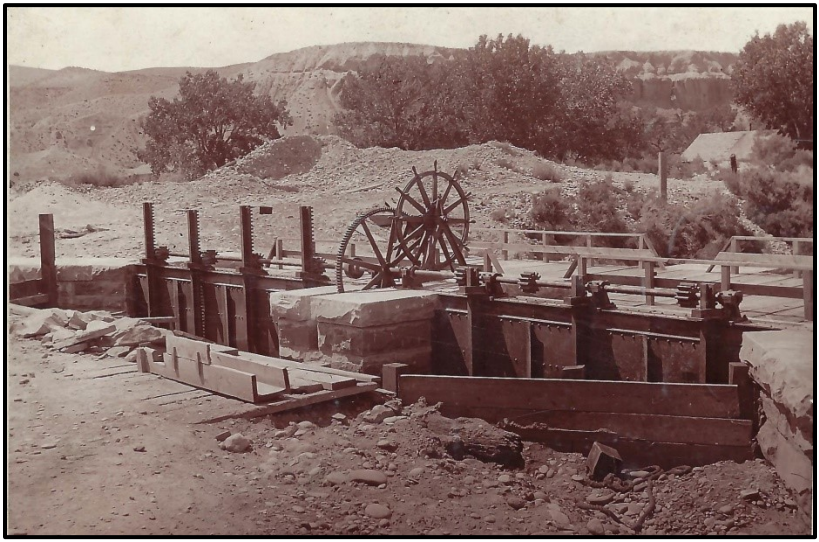
acres west of Fruita in time for the 1901 growing season (*Daily Sentinel* [Grand Junction], December 5, 1900:1; April 6, 1901:4; May 7, 1901:1). Water for irrigation of those lands certainly came from the Kiefer Extension Ditch, and demand continued. An additional 119.47 cfs was appropriated from the Colorado River by the GVIC on April 26, 1914, for delivery through the canal system. The Kiefer Extension Ditch continued as a private irrigation system until January 1979 when it merged with the GVIC to better utilize water resources (Grand Valley Irrigation Company 1994; Grand Valley Irrigation Co. 2008).

LATER IMPROVEMENTS TO THE GRAND VALLEY CANAL

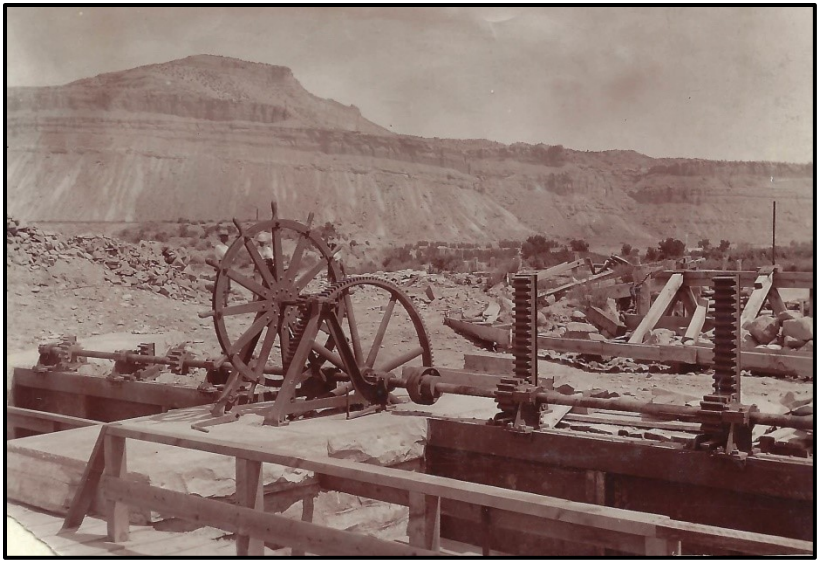
During the winter of 1900–1901, the original wooden diversion headgate of the Grand River Ditch on the Colorado River was replaced by a stone and steel headgate. The work was done by local contractor, John J. Lumsdem, who was awarded the $13,700 contract in late November 1900. He used stone from the Peach Blow Quarry along the Frying Pan River and transported the stone to Grand Junction by railroad. The GVIC accepted the new headgate as complete on May 6, 1901 (*Daily Sentinel* [Grand Junction], November 27, 1900:1; February 5, 1901:4; April 19, 1901:4; May 7, 1901:4). In 1935, the original wooden structure that divided the flow of the Upper Mainline into the Highline and the Mainline lateral canals was replaced with a concrete divider structure controlled by a large radial gate and a concrete flume. The replacement allowed the canal to continue functioning as it was originally designed. Additional upgrades to the divider in 1988 and 1989 did not substantially alter its characteristics. These alterations were restricted to replacing a portion of the concrete retaining wall on the southeastern side of the canal, placement of a concrete-slab bridge across the flume portion of the outlet into the Mainline, and installation of a steel-plate gate and expanded-metal footbridge over the Highline portion of the canal (Horn 2013).



The Grand River Ditch headgate under construction in 1900 (on file at the GVIC, Grand Junction).



The Grand River Ditch headgate upon completion in 1900 (on file at the GVIC, Grand Junction).



Detail of the gate lifting mechanism of the Grand River Ditch headgate upon completion in 1900 (on file at the GVIC, Grand Junction).

Through time, irrigation canals, like the Grand Valley Canal, are subject to ongoing maintenance, including replacement of headgates and other elements that periodically wear out. Replacement of canal components is routine and enables the delivery of water to users to take place as the system was originally designed. Although somewhat enlarged in 1901 from its original 1883–1884 size, the Grand Valley Canal has remained consistent in appearance for more than 120 years with the only real change being the installation of the replacement divider in 1935, which is now more than 85 years old. In recent years, the Bureau of Reclamation has been tasked with reducing the amount of salts being introduced into the Colorado River from all sources, including irrigation throughout the western slope of Colorado. Their Colorado River Basinwide Salinity Control Program has identified water in canals and ditches as a conveyor of salts originating from naturally occurring selenium emanating

from Mancos shale.[2] The Bureau of Reclamation has teamed up with private canal and ditch companies, including the GVIC, to take steps to reduce the amount of selenium being carried by their canals and ditches. Lining of canals that pass through Mancos shale has been the primary means of reducing selenium in the waterways. In the case of the Grand Valley Canal, polyvinyl chloride (PVC) and concrete liners have been installed on long stretches of the canal system. Piping of smaller distribution elements has also taken place. Not only has this reduced the amount of salt picked up by the water conveyed in the canal and its laterals, it has reduced seepage, resulting in water savings that make water use more efficient. Lining has changed the appearance of the formerly all-earthen canal system, but this has not changed the shape, configuration, or purpose of the canals (Horn 2008; 2013; Millward and Horn 2012; Pfertsh 2005).

Highline Lateral Flume No. 5 (on file at the GVIC, Grand Junction).

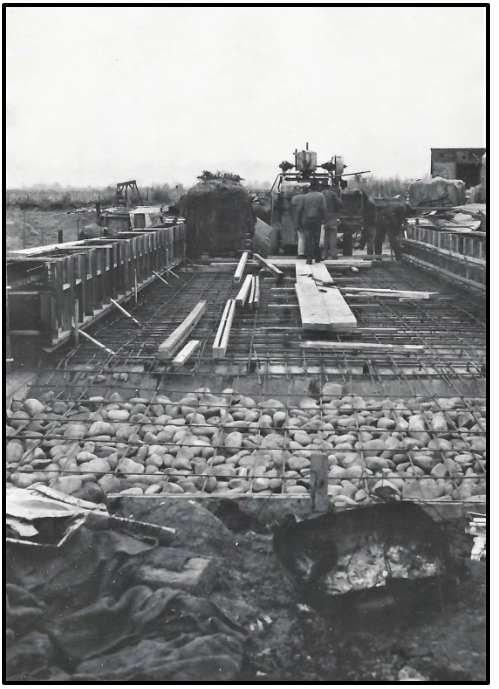
[2] Mancos shale is ancient seafloor sediment that is the most common geologic formation of the Grand Valley.

Replacement of Main Line Lateral Flume No. 5 near 24 and J roads at Pritchard Wash, probably in the early 1960s (on file at the GVIC, Grand Junction).

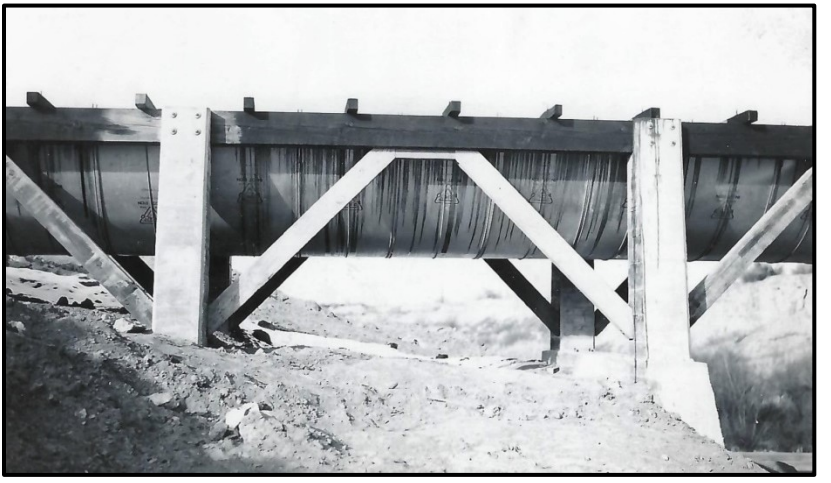
Replacement work underway of Highline Lateral Flume No. 10 across Little Salt Wash, in 1947 (on file at the GVIC, Grand Junction).

Replacement work underway of Highline Lateral Flume No. 10 across Little Salt Wash, in 1947 (on file at the GVIC, Grand Junction).

Replacement work underway of Highline Lateral Flume No. 10 across Little Salt Wash, in 1947 (on file at the GVIC, Grand Junction).



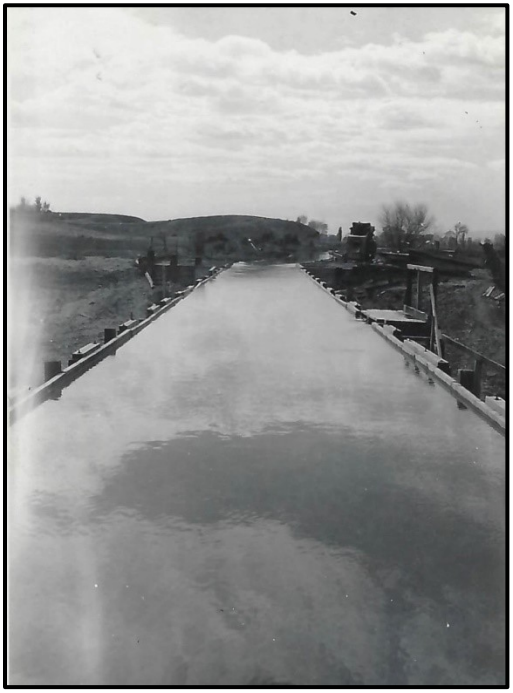
Replacement work underway of Highline Lateral Flume No. 10 across Little Salt Wash, in 1947 (on file at the GVIC, Grand Junction).



Completed replacement of Highline Lateral Flume No. 10 across Little Salt Wash, constructed in 1947 (on file at the GVIC, Grand Junction).

Completed replacement of Highline Lateral Flume No. 10 across Little Salt Wash, constructed in 1947 (on file at the GVIC, Grand Junction).

Highline Lateral Flume No. 12 that was replaced by a concrete structure in 1959 (on file at the GVIC, Grand Junction).



Highline Lateral Flume No. 12 that was replaced by a concrete structure in 1959 (on file at the GVIC, Grand Junction).

Main Line Lateral Flume No. 13 (Borlands Flume) that was replaced in 1951 (on file at the GVIC, Grand Junction).

Turn to view.

Highline Lateral Flume No. 14 that was replaced by a concrete structure in 1951 (on file at the GVIC, Grand Junction).

Highline Lateral Flume No. 14 that was replaced by a concrete structure in 1951 (on file at the GVIC, Grand Junction).

Highline Lateral Flume No. 14 that was replaced by a concrete structure in 1951 (on file at the GVIC, Grand Junction).

Repair work being done on the Grand River Canal headgate in 1952 (on file at the GVIC, Grand Junction).

Newly completed concrete Rice Flume at Carpenter Wash on the Main Line in 1956 (on file at the GVIC, Grand Junction).

Relocation of the Mesa County Ditch (on file at the GVIC, Grand Junction).

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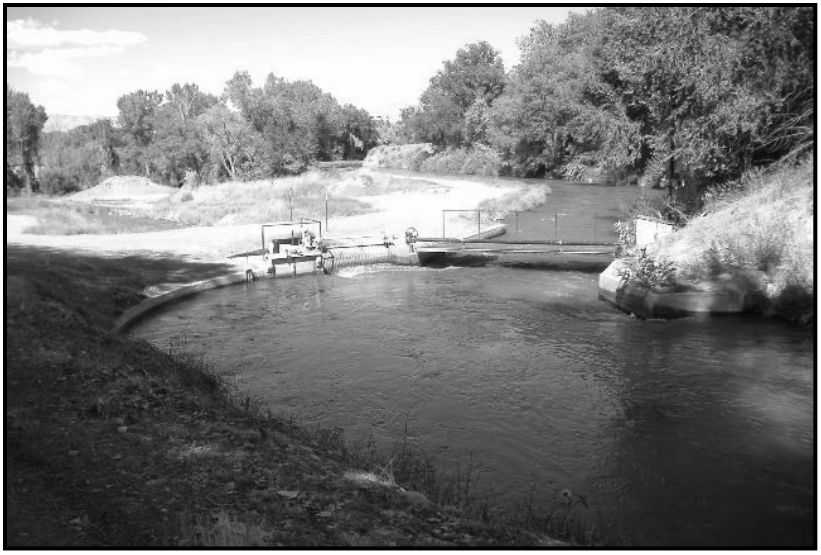

Grand Valley Canal Divider showing the Upper Mainline Canal carrying water to the right into the Highline Lateral and gates regulating flow into the Mainline Lateral to the left (Alpine Archaeological Consultants, 2008).

BENEFITS OF IRRIGATION TO THE AGRICULTURE IN THE GRAND VALLEY

In 1894, the GVIC delivered water to 45,000 acres of land and was the largest supplier of water in the northern part of the Grand Valley. The Kiefer Extension provided water for another 10,000 acres of land by 1901. The Bureau of Reclamation's Grand Valley Project, completed in 1917, provided water to an additional 12,000 acres of land in 1921, which grew to a high of just over 34,000 acres of land in 1965.

Fruit growing has been a major agricultural pursuit in the Grand Valley since the 1880s, with peaches and pears as the primary crop, but apples, nectarines, and cherries adding to the production (Becker 2011). Many acres have been devoted to potatoes, sugar beets, and alfalfa. Farms in the Grand Valley have typically been smaller in size, as compared to other irrigated farmland in the western United States, largely because of the

productivity of the fruit orchards. It is possible to make a living from a small acreage of orchards, so a considerable amount of land in the Grand Valley has been divided into plots of only 10 or 20 acres in size. The ability of fruit to become a marketable commodity was facilitated by the D&RG upon its arrival in Grand Junction in 1882. It initially provided an outlet to eastern markets and, with its extension to Salt Lake City in 1883, provided access to western markets. This was further facilitated by conversion of the railroad lines in and out of Grand Junction from narrow gauge to standard gauge in 1890 resulting in larger rail cars being put into use.

The high productivity of fruit production has resulted in comparably higher land values per acre than elsewhere in the western United States. Historically, labor has been more family dependent, and farmers have been able to share labor at a higher frequency than elsewhere. As a result, local labor has proved sufficient for most farm operations. Elsewhere in the western United States, large acreage farms have relied more on hired labor, and corporate farming is less prevalent in the Grand Valley than other places.

Orchards and farms in the Grand Valley in 1908 (on file at the GVIC, Grand Junction).

The abundance of irrigation water being applied to farmland throughout the valley has resulted in a need for drainage systems. Salt saturation from the underlying Mancos shale created problems in many areas that were solved only by utilizing salt-tolerant crops. Valley-wide salinity drainage systems began to be installed by the Bureau of Reclamation in 1917. Coddling moth decreased apple production by over 30 percent by the 1920s, and pear production declined after 1930. In addition to agriculture, the Grand Valley's economy benefited from energy sectors of coal, oil, uranium, and oil. Still, water has seen few competing demands beyond that of agriculture. In addition, Grand Junction quickly grew to be a regional commercial center. In recent years, the mild climate and outdoor lifestyle has drawn people to the area wishing to depart heavily urbanized areas, such as the Colorado Front Range and California. Urban and commercial growth has increased the use of water for those sectors, but agriculture is still the major water user and continues to be served by efficient historical water distribution systems.

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