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Consultants in Natural Resources and the Environment

Historical Overview of the North Fork Farmer's Ditch
North Fork Farmer's Ditch Bureau of Reclamation WaterSMART Project
Delta County, Colorado

Prepared for—
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History of the North Fork Farmer's Ditch

The North Fork Farmer's Ditch is 12.38 miles long with the diversion structure located approximately 2.7 miles northwest of Paonia, Colorado. The North Fork Farmer's Ditch extends along the northwestern side of the North Fork of the Gunnison River (North Fork) Valley and borders the lower slopes of Pitkin Mesa, Stucker Mesa, Sunshine Mesa, and Powell Mesa before it ends near the intermittent drainage of Short Draw north of Hotchkiss, Colorado.

The headgate for the North Fork Farmer's Ditch is located in the SE ¼ of NW ¼ of NW ¼ of Section 28, Township 13 South, Range 91 West of the 6th Principal Meridian in Delta County, Colorado (Figure 1 and Figure 2). Colorado Division of Water Resources (2024) records indicate that the North Fork Farmer's Ditch has an appropriation date of March 21, 1896; an adjudication date of April 12, 1901; a previous adjudication date of June 17, 1889; and ditch Priority Number 34. According to the initial filing statement for the irrigation ditch (State of Colorado 1890), construction for the North Fork Farmer's Ditch began in July 1888. The filing statement for the water rights was signed on January 27, 1890 with W.T. Hawley, E.F. Edwards, Geo. H. Merchant, A.S. Stratton, Henry Knowles, W.S. Coburn, R.E. Love, E.L. Timmin, Harrison Wood, A.M. Hotchkiss, and O.F. Morrison being subscribers of the statement. At that time, the ditch was stated to be 4 feet (ft) 11 inches wide at the top and bottom, 2 ft deep, and had a carrying capacity of 32.04 cubic ft of water per second. Based on the 1890 plat, the North Fork Farmer's Ditch was approximately 6.47 miles long at that time.

Figure 1. Headgate for North Fork Farmer' Ditch.

Figure 2. Headgate and Diversion Dam for North Fork Farmer's Ditch.

Archival research indicates that many of the original claimants of the North Fork Farmer's Ditch were early settlers in Delta County, many of whom helped to develop the agriculture of the region and established some of the first productive orchards in the valley. Watson S. Coburn was a veteran of the

Civil War, who, at the age of 44, moved to the Paonia-Hotchkiss area, where he established an orchard on his ranch and lived out the rest of his life on the ranch (Colorado Genealogy 2024). In 1909, R.E. Love sold his ranch to Colorado Springs investors; his ranch was claimed to have one of the best orchards in the valley (Braidwood, ed. 1909). George H. Merchant established North Fork and Anthracite, Inc. in the valley to build a railroad in Delta and Gunnison Counties (Robinson, eds. et al. 1896), was elected as county assessor in Delta County, and played a long-term role in the early days of the North Fork Farmer's Ditch Association management (Merchant 1919). While Andrew Monette Hotchkiss does not appear to have lived in Delta County during the later years of his life, he is the first-born son of Enos T. Hotchkiss, the latter of whom is the namesake for the town of Hotchkiss, Colorado. The initial claimants of the North Fork Farmer's Ditch played a crucial role in the agricultural development of the region.

Figure 5, attached, depicts the full length of the ditch as it is recognized on modern U.S. Geological Survey (USGS) topographic maps (USGS 1965a, USGS 1965b, USGS 1965c), along with the associated land patents for the original claimants of the North Fork Farmer's Ditch. While many of these patents are located along the ditch line depicted in the 1890 filing statement plat, the land patents for Oren F. Morrison, Andrew Monette Hotchkiss, and Harrison Wood are located near Hotchkiss, several miles from the end of the ditch, as depicted on the 1890 plat. This indicates that the full length of the ditch may have been constructed during the early 1890s shortly after the initial claim for the North Fork Farmer's Ditch filing statement was signed. Alternatively, the construction of extension or lateral ditch lines may have been used to reach these early claimants before the entire ditch line, as recognized in the present day, was completed. The early ownership of these lands is also portrayed in the named topographic features or settlements along the North Fork on USGS topographic maps. At the location of the Robert E. Love land patent, the nearby drainage is named Love Gulch. A short distance south, the small community of Coburn is depicted on the map (USGS 1965c), which also includes Coburn Road. Watson S. Coburn's land patent bordered the Robert E. Love patent along the lower valley.

In the decree for the 1901 adjudication (State of Colorado 1901), the ditch was claimed by the North Fork Farmer's Ditch Association, and the ditch was stated to be 7 miles long, had a carrying capacity of 26.8 cubic ft per second, and irrigated 912 acres of land. At that time, the North Fork Farmer's Ditch had Priority Number 21. In a letter and supplemental statement from George H. Merchant to the Colorado State Engineer, dated December 12, 1919, Merchant identified himself as one of the original claimants for the ditch and provided a clarifying statement that the North Fork Farmer's Ditch Association had taken over the ditch water rights according to the 1901 adjudication (Merchant 1919).

In a 1930 decree (Omvig 2023), there is evidence that the ditch was enlarged and that the work for the enlargement was commenced on June 1, 1890 (prior to the 1901 adjudication). In this document, the ditch is stated to be 8 miles long, 6 ft wide at the bottom, 8 ft wide at the high water line, and approximately 2 ft deep. The carrying capacity is documented to be 35 cubic ft per second, and a total of 1,185 acres were under irrigation. The North Fork Farmer's Ditch was designated as Priority Number G-25, which was to date from April 1, 1898.

In 1952, water specialists from the Farmers Home Administration (FmHA) visited Grand Junction for a conference and to discuss financing options for improvements to various irrigation systems. This four-day conference included an "in-the-field" tour of several water facility projects and installations in Delta County that had already been financed by the FmHA since the enactment of the Water Facilities Act of 1937. These projects included several irrigation systems in the county, of which the North Fork Farmer's Ditch was included (The Daily Sentinel 1952:10). This suggests that several of the concrete structures for the ditch were built sometime from 1938 to 1952. During documentation of another segment of the North Fork Farmer's Ditch (5DT20793), one concrete structure exhibited an inscription on the concrete that reads "1965," which suggests some improvements had been made along the irrigation ditch after the early 1950s (Omvig 2023).

While some archival sources state that the North Fork Farmer's Ditch extended up to 8 miles long, three of the early claimants (Harrison Wood, Oren Morrison, and Andrew Monette Hotchkiss) patented land near the town of Hotchkiss and at the far western extent of the North Fork Farmer's Ditch, as it is recognized in the present day. The full length of the ditch is depicted on both the 1965 Hotchkiss, Colorado USGS 7.5-minute quadrangle map (USGS 1965d) and 1950 aerial imagery (Nationwide Environmental Title Research 2025); the ditch measures 12.38 miles long on those maps (Figure 3 and Figure 4). It is possible that either lateral or extension ditch lines provided irrigation to the patented lands further west sometime prior to 1950, before the main ditch line was expanded to the currently recognized length.

Figure 3. North Farmer's Ditch near the diversion structure.

Figure 4. North Fork Farmer's Ditch further downstream of diversion structure.

According to the *North Fork of the Gunnison River Irrigation Management Plan* (J-U-B Engineers, Inc. 2017:34), the North Fork Farmer's Ditch "supplies irrigation water to river lowlands on the north side of the North Fork and to the Hanson Mesa area just northeast of Hotchkiss, CO. The upper end (in the river lowlands) is governed by a separate board than the lower end (Hansen Mesa area). The governing body for the lower end is known as the North Fork Farmer's Ditch Extension. Grass pasture, corn, and small grains are common along the entire ditch while some vineyards and fruit are grown on the Extension." As of 2017, a total of 965.87 acres of land was being irrigated by the North Fork Farmer's Ditch (J-U-B Engineers, Inc. 2017:34).

Local Canal History

The North Fork is a major tributary of both the Gunnison River and the overall Colorado River Basin in western Colorado. From the headwaters in the West Elk Mountains, the North Fork extends west from the confluence of Muddy Creek and Anthracite Creek for 35.5 miles until it reaches the confluence of the Gunnison River. The Gunnison River confluence is located north of Fruitland Mesa and the Gunnison Gorge National Conservation Area and 8 miles southwest of Hotchkiss, Colorado. The terrain through this area is highly variable, which includes narrow mountain valleys near the headwaters and broader river lowlands and fertile mesas from Paonia to the confluence with the Gunnison River. According to the *North Fork of the Gunnison River Irrigation Management Plan* (J-U-B Engineers, Inc. 2017), the North Fork contains fertile soils and a climate suitable to a wide variety of agricultural production, which would not be practical without sustainable irrigation systems throughout the valley and the upper mesas.

Along the North Fork, a total of 12 agricultural river diversions serve many of the ranchlands and farms in the surrounding region.

J-U-B Engineers, Inc. (2017) divided the North Fork into eight variable length reaches that denote each of the diversions along the length of the river, starting at the headwaters at the eastern end. No diversion exists along the Upper North Fork reach, which consists of the initial 7.13 miles of the river (Reach 1). This is likely due to the narrow mountain valley terrain that exists along this portion of the river, which is not conducive to agricultural production or gravity-fed irrigation system development. The Fire Mountain to Stewart section (Reach 2) is 4.4 miles long and includes three irrigation diversions: Fire Mountain Canal, Carrol Ditch, and Lennox Ditch Pump. The initial appropriation dates for each of these diversions are September 14, 1896 for the Fire Mountain Canal; February 28, 1888 for the Carrol Ditch; and May 5, 1884 for the Lennox Ditch Pump (Colorado's Decision Support Systems 2025). The Stewart to North Fork Farmer's section (Reach 3) is 2.1 miles long and includes one diversion, the Stewart Ditch, which has an initial appropriation date of June 1, 1882. The North Fork Farmer's to Paonia section (Reach 4) is 1.78 miles long and includes two diversions: the North Fork Farmer's Ditch and Feldman Ditch. The Feldman Ditch has an initial appropriation date of April 1, 1900. The Paonia to Short section (Reach 5) is 4.69 miles long and includes three diversions: the Paonia Ditch, Monitor Ditch, and Sheperd and Wilmott Ditch. The initial appropriation dates for each of these diversions are March 2, 1883 for the Paonia Ditch; February 16, 1883 for the Monitor Ditch; and March 5, 1884 for the Sheperd and Wilmott Ditch. The Short to Vandeford section (Reach 6) is 4.47 miles long and includes one diversion, the Short Ditch, which has an initial appropriation date of November 18, 1889. The Vandeford to Smith and McKnight section (Reach 7) is 1.68 miles long and includes one diversion, the Vandeford Ditch, which has an initial appropriation date of January 1, 1883. The Lower North Fork section (Reach 8) is 9.24 miles long and includes one diversion, the Smith and McKnight Ditch, which has an initial appropriation date of June 1, 1896 (Colorado's Decision Support Systems 2025).

While the other 11 diversions off the North Fork are variable in length and overall size, several of these irrigation systems supply water to the lower valley, either on the opposite side of the river from the North Fork Farmer's Ditch or the other ditches that supply water to farms or ranches do not have a vested interest in the North Fork Farmer's Ditch. The Fire Mountain Canal is a major diversion that has an average annual diversion of more than 45,000 acre-ft. While this canal is located on the northern edge of the valley and directly upslope of the North Fork Farmer's Ditch for much of its length, the bulk of the land irrigated by the Fire Mountain Canal is located on Rogers Mesa, west of Hotchkiss (J-U-B Engineers, Inc. 2017).

Many of the other major diversions along the North Fork are located on the opposite side of the river from the North Fork Farmer's Ditch and irrigate agricultural lands from Bowie to Hotchkiss and on lands further to the southwest. Many of these ditches mirror the alignments of the Fire Mountain Canal and the North Fork Farmer's Ditch and border the upland mesas on the opposite side of the river. These ditches include the Stewart Ditch, Paonia Ditch, Short Ditch, and Smith and McKnight Ditch.

Smaller irrigation ditch systems located on the northwestern side of the North Fork irrigate agricultural lands along and directly adjacent to the North Fork Farmer's Ditch. These ditches include the Feldman Ditch, Monitor Ditch, Sheperd and Wilmott Ditch, and Vandeford Ditch. The other diversions denoted along the North Fork, Carrol Ditch, and Lennox Ditch Pump are located further upstream and do not extend down to the diversion point for the North Fork Farmer's Ditch.

Summary

The North Fork Farmer's Ditch is 1 of 12 diversions located on the North Fork of the Gunnison River, of which the more prominent irrigation systems include the Fire Mountain Canal, Stewart Ditch, North Fork Farmer's Ditch, and Short Ditch. While the Fire Mountain Canal and North Fork Farmer's Ditch provide irrigation waters to the northern side of the valley and upper mesas, the Stewart Ditch and Short Ditch extend across broad areas along the southern side of the valley.

The North Fork Farmer's Ditch is one of the oldest active diversions on the North Fork with senior water rights that predate many of the other diversions along the river (J-U-B Engineers, Inc. 2017; Thompson 2018), which provides vital irrigation for many of the farms and ranches in the valley into the present day. While the irrigation ditch was initially constructed in 1888, subsequent water rights decrees indicate that the ditch was expanded, and diversion structures were repaired or replaced through the history of the North Fork Farmer's Ditch. Archival sources indicate that the ditch was enlarged in 1890 with additional improvements to the diversion structures primarily taking place sometime from 1938 to 1952. While archival sources indicate that the irrigation waters from the North Fork Farmer's Ditch supported several orchards in the lower valley during the 1890s and early 1900s, modern agricultural records indicate that the entire ditch line consists of agricultural lands with grass pastures, corn, and small grain production predominantly observed. Additional vineyards and fruit are grown on the North Fork Farmer's Ditch Extension around Hansen Mesa.

The Western Slope Conservation Center planned improvements to the existing diversion structure and the associated agricultural ditch along the North Fork of the Gunnison River in 2024 and 2025. Improvements consist of installing multiple natural channel elements, such as rock riffle crests, augmented with new diversion structure technologies for improved water efficiencies and control. The technologies include pneumatic bladders that would be programmed to automatically rise and fall in line with detected flow rates in the river channel and gates that can be controlled automatically. A redesigned headbox also would be installed to reduce bedload and debris from entering the ditch, control the quality of flow diverted, and provide a return for periodic flushing operations. These features would further increase diversion functionality and water use efficiencies while reducing ditch maintenance and associated river channel disturbances. Installation of the headbox would also increase safety for ditch operators as the modified infrastructure would provide walkways and access points that are currently absent from the diversion structure. Finally, a riffle rundown would be installed adjacent to, and downstream of, the redesigned diversion, which would consist of a structured and secured assemblage of boulders and alluvium that would provide a reduction of peak hydraulic forces and be optimized to reduce obstacles for fish passage and decrease navigational safety obstacles.

The North Fork Farmer's Ditch itself would be further improved by piping approximately 0.15-mile of the existing earthen ditch channel directly downstream from the diversion headgate. The remaining 0.15-mile length of the ditch would be left open but would be lined with concrete or an impermeable synthetic material. Reducing seepage losses in the ditch, in parallel with the installation of the rehabilitated diversion structure, would increase base flows in the North Fork of the Gunnison River. The ditch turnout structure would also be rehabilitated with the installation of a concrete headwall and two vertical sluice gates, which also would be automated, assisting in water delivery efficiency.

Attachments
Figure 5. Topographic Map of the North Fork Farmer's Ditch.

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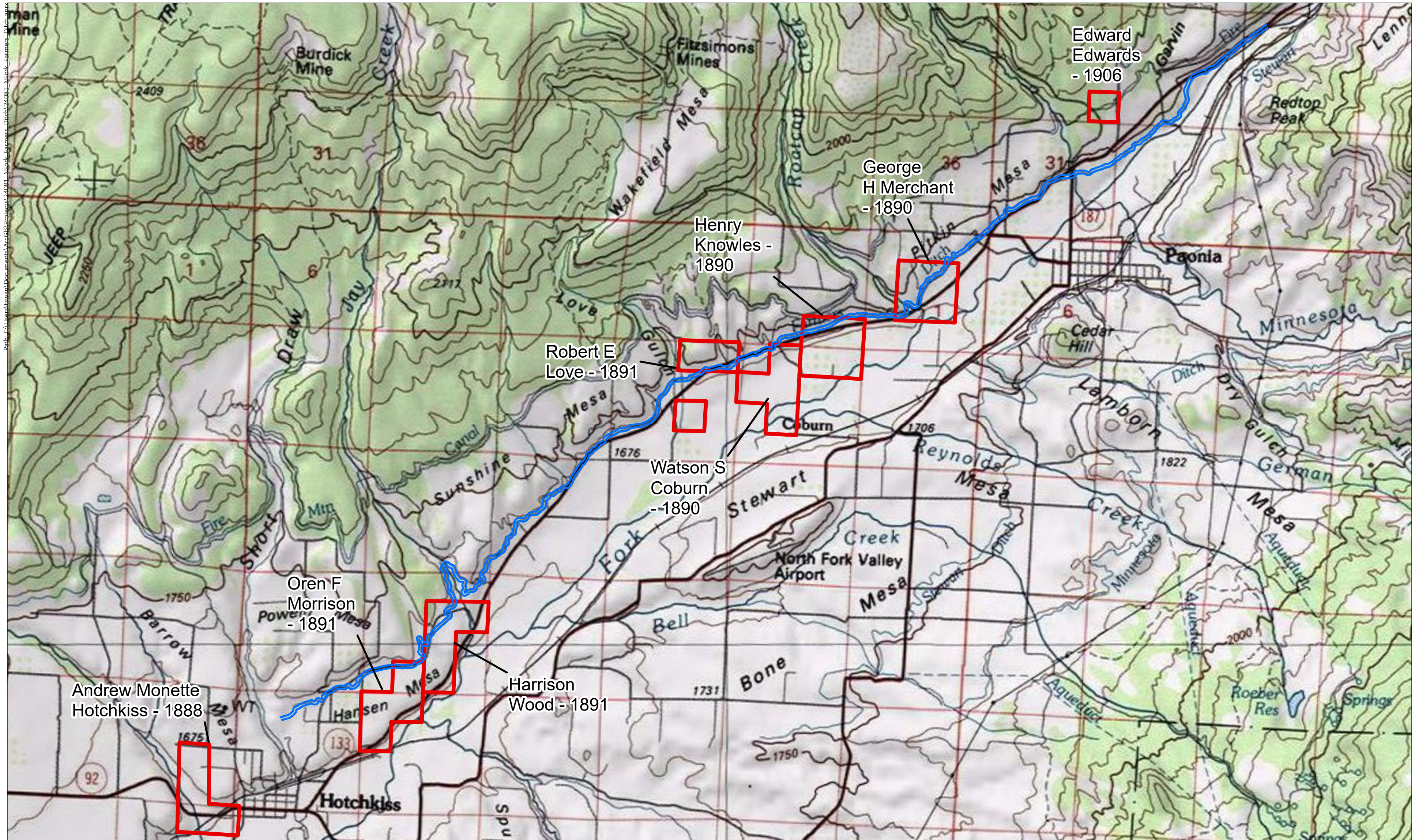

Historical Overview of the North Fork Farmer's Ditch

North Fork Farmer's Ditch Bureau of Reclamation WaterSMART Project, Delta County, Colorado

Sections 28, 29, 31, and 32, T13S, R91W; 6th PM
Section 36, T13S, R92W; 6th PM
Sections 1, 2, 9-11, 16, 17, 19, 20, and 30, T14S, R92W; 6th PM
USGS Bowie, CO; Paonia, CO; and Hotchkiss, CO Quadrangles (1:24,000; 1965)
Delta County, Colorado

North Fork Farmer's Ditch
Associated Land Patents

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0 1 2 Miles
1:75,000

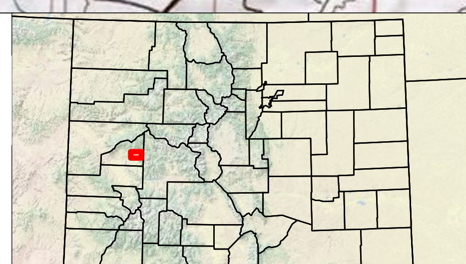

Figure 5
Topographic Map of the North Fork Farmer's Ditch

Prepared for: Bureau of Reclamation
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ERO Resources Corp.