Sanpete Project

Wyndham E. Whynot
Bureau of Reclamation
1994

Table of Contents

Sanpete Project

Citizens of Ephraim and Spring City Utah were facing tough times in the 1930s. Not only did the yearly water shortage occur, but the Great Depression further impacted the price of agricultural goods and livestock, the mainstay's of the region's economy. Previously, some enterprising individuals considered bringing water over the divide to meet the needs of the towns, but these enterprises were too costly and they were abandoned. The decision to create the Public Works Administration to put people back to work and to increase construction offered a way for Utah to build a number of public water projects, including the Sanpete project which would bring water from across the divide and improve the lives of some residents of Sanpete Valley.

Project Location

The Sanpete project is located in Sanpete Valley in central Utah, between the Wasatch and Gunnison plateaus of the Grand River Basin. Ephraim and Spring City are located approximately fifty miles south of Provo and east of the Wasatch range. Additional towns in the Sanpete Valley which also needed a larger water supply included Mount Pleasant, Moroni, and Fairview. Ephraim and Spring City tunnels are located about 10,000 feet above sea-level, with Ephraim about 16 miles east of its tunnel; and Spring City Tunnel is 12 miles north of Ephraim Tunnel and 13 miles east of Spring City. In 1930, Spring City's population numbered 992 persons, while Ephraim had 1,966 persons. Since farming had already reached the limits of irrigation, any increases were delayed until additional sources of water could be discovered or transported into the area.[1]

Historic Setting

Native American settlement of the Sanpete Valley consisted of the Sanpits band of the Ute tribe. This particular group did not adopt a horse-riding pattern and generally subsisted on

---

1. E. O. Larson to R. F. Walter, Chief Engineer, Denver, ltr, 23 February 35, RG 115, Office of the Chief Engineer, Denver, General Correspondence files, (Straights), Box 620, Straights, Preliminary Investigations Utah May 1934 - December 1935, 37-O folder, NARA, Denver; E. O. Larsen, *Report on Sanpete Division, Salt Lake Basin Investigations, Utah: Vol. 1, Project Reports*, RG 115, Department of Interior, Bureau of Reclamation, May 1933, 51; Bureau of Reclamation, *Annual Project History, Sanpete Project, 1936-39*, RG 115, 34.

small game. Exploration of the area by non-indigenous people included the Francisco Atanasio Dominguez-Silvestre Velez de Escalante expedition of the 1770s, Jedidiah Strong Smith during the 1820s, and John C. Fremont in 1843-1844. Initially American fur trappers and mountain men roamed the area, but during the late 1840s, the Mormons began arriving in Utah.[2]

Mormon colonization of the region occurred when the Ute Chief Wakara (Walker) invited them to settle in the valley. About fifty families moved to an area around the San Pitch river in June 1849. The Deseret legislature created Sanpete county in December, but later reduced its size in February 1852. Early friendship quickly turned sour as the Indians came to believe they had made a mistake by encouraging Mormon settlement there. As tensions increased during the 1850s, simple harassment turned to intermittent warfare and ultimately led to the Utes participating in the Black Hawk war until 1868, during which time Mormon settlers fled the valley.[3]

After hostilities ended, the Mormons began resettling the Sanpete Valley in 1868. Early farmers relied on irrigation to provide sufficient water for their crops. Simple irrigation systems, which used water from the San Pitch river and its tributaries, served the regions irrigation needs fairly well until the turn of the century. Increased settlement resulted in overdevelopment of the region which taxed the river past its limits. Realizing the importance of finding additional sources of water, citizens around Ephraim and Spring City looked for solutions. Investigations indicated the best choice would be to bring water across the Great Basin Divide.[4]

Surplus water on the eastern side of the Wasatch Range could provide a sufficient amount of water to encourage modest population growth and to stabilize agriculture production in parts of the Sanpete Valley. However, the only way to transport to Ephraim and Spring City was to tunnel through the mountain range. Several early attempts to construct tunnels were made. The Murray Tunnel, which was to be 4200 feet long and was east of Ephraim, was

2. Warren L. D'Azevedo, ed., *Handbook of North American Indians: Great Basin*, Vol. 11, (Washington DC: Smithsonian Institution, 1986,) pp. 340, 501-3.
3. *Ibid*., pp. 508-9; Dept of Interior, Bureau of Reclamation, *Annual Project History Sanpete Project*, 1936, p. 33., RG 115, Bureau of Reclamation, Engineering & Research Center Project Histories, San Luis - Savage 1948-51 #1, Box 159, NARA, Denver.
4. Dept. of Interior, Bureau of Reclamation, *General Information Circular Sanpete Project, Utah*, 1 May 1948, RG 115, Engineering & Research Center Project Reports, 1910-55, Box 762, NARA, Denver.

abandoned after only 400 feet had been excavated. This unsuccessful effort did not dissuade additional efforts, as the Larson Irrigation Company built the Larson Tunnel north of the Murray site. Although the company successfully burrowed its way across the divide, an improper gradient resulted in a less than adequate water flow.[5]

The city of Ephraim controlled distribution of irrigation water from Cottonwood Creek until around 1919, after which the Ephraim Irrigation Company took over in 1920. The Horseshoe Irrigation Company eventually assumed control of irrigation efforts for Spring City. These stock companies acquired numerous water rights and ultimately controlled the majority of the available water for these villages. Realizing they needed to acquire additional water to properly irrigate their region, the companies looked to the Bureau of Reclamation for assistance. This resulted in several investigations to determine the feasibility of bringing water from the eastern side of the Wasatch Range across the divide to Sanpete Valley.[6]

Reclamation investigators examined the possibility of building two small reservoirs at Black Hill or the Freeman-Allred site to provide supplemental irrigation for Spring City, but concluded neither site was suitable. Although storage dams could be build on the sites, the reservoirs would be extremely small and not cost effective. Engineer E.O. Larson believed the Freeman-Allred site would be feasible only if built "as an emergency relief project or other work project," but not under the terms of a general reclamation repayment contract.[7]

Studies of the three planned divisions; Gooseberry, Ephraim Tunnel, and the Black Canyon or Spring City division, showed that they could provide supplemental irrigation. Estimates indicated the Gooseberry Division would only supply additional water to 11,500 acres of the 20,000 acres under irrigation near Fairview, Moroni, and Mt. Pleasant. The Ephraim Division could provide supplemental irrigation for 6,500 acres, and the Spring City Division

---

5. Dept. of Interior, Bureau of Reclamation, *Report on Sanpete Division Salt Lake Basin Investigations Utah*, vol. 1, May 1935, RG 115, Engineering and Research Center Project Reports, 1910-55; Box 762, NARA, Denver, p. 36.
6. Department of Interior, Bureau of Reclamation, *History of the Acquiring of Canal and Water Rights in Cottonwood Creek*, RG 115, Engineering & Research Center Project Reports, 1910-55, Box 763, pp. 2-4; *Report on Sanpete Division Salt Lake Basin Investigation Utah*, vol. 1, p. 47.
7. Dept. of Interior, Bureau of Reclamation, *Brief Report on Revised Plan for Spring City Division Sanpete Project Utah* by E. O. Larson, February 1935, RG 115, Engineering & Research Center Project Reports, 1910-55, Box 762, NARA, Denver, 7-8.

would only supply additional water to 1,500 (excluding 1,000 acres under the Gooseberry Division) of the 6,778 acres under irrigation.[8]

Water for Spring City and Ephraim would be moved through Wasatch Range by a system of small feeder canals and two tunnels which exited into either Ephraim or Oak Creeks, which were used by area residents to irrigate their lands. Since these two divisions only needed small feeder canals and the tunnels to provide supplemental irrigation for the region, costs would be kept down. Use of Civilian Conservation Corps assistance would save an estimated $8,000 on the Project. Only two obstacles stood in the way, water rights and the irrigation company charters.[9]

Water rights for the project were designated in the repayment contracts. Rights to water diverted from Cottonwood Creek filed after 1912 were "on the basis of equal priority for both tunnels." However, each division could divert water on claim prior to 1912, as well as purchase these rights from other owners. Investigators believed this solution made each division "equally feasible." Both irrigation companies amended their charters to allow a repayment contract with the federal government to be signed. The Horseshoe Irrigation Company signed the final repayment contract in May 1935.[10]

Project Authorization

Utah fared quite well under the PWA. At least five proposed reclamation projects, including Sanpete, were studied and considered for funding. Roosevelt approved the Sanpete Project, consisting of the Spring City and Ephraim Divisions, on November 6, 1935, under the provisions of the National Industrial Recovery Act of 1933. When Sanpete received approval Reclamation considered the Gooseberry Division too complicated and costly to construct at that time. Reclamation later considered Gooseberry as an independent project in the 1940s, and recommended as part of the Colorado River Storage Project in the 1950s, was never

8. *Report on Sanpete Division Salt Lake Basin Investigations Utah*, p. 4-5.
9. Reclamation, *Project History Sanpete Project 1936-1939*, vol. 1, (1936) pp. 20, 22, 25; Reclamation, *Project History Sanpete Project 1936-1939*, vol. 1, (1937) p. 25.
10. Dept. of Interior, Bureau of Reclamation, *Brief Report on Revised Plan for Spring City Division Sanpete Project Utah*, February 1935, RG 115 Engineering & Research Center Project Reports, 1910-55, Box 762, NARA, Denver, p. 7; Reclamation, *Project History Sanpete Project 1936-1939*, vol. 1, (1936) pp. 12, 32; Bureau of Reclamation, *Annual Project History Sanpete Project 1987-1990*, RG 115, 27.

constructed.[11]

Construction History

Although approved as a single project, the Sanpete Project consists of two separate units, Ephraim Tunnel and Spring City Tunnel, which operate independently of each other. Some of the water draining into Cottonwood Creek on the eastern side of the Wasatch Range is fed via small feeder canals into both of Sanpete's tunnels where it goes through the mountain range, exiting into either Ephraim Creek for delivery to Ephraim or Oak Creek for Spring City.[12]

Work on the Sanpete Project was conducted in two phases, the first involved the construction of the Ephraim Tunnel, the other the Spring City Tunnel. Private contractors and the Civilian Conservation Corps built both divisions. Since neither division depended upon the other, companies were allowed to bid on each tunnel either separately or jointly. Government specifications imposed specific restrictions on labor, including wage limits and the standard Federal ban on Mongolian labor.[13]

Bids for Ephraim Tunnel were initially too high, so the government re-advertised the contract. The Morrison-Knudsen Company then won the contract for the Ephraim division with a bid of $162,434. Their offer to construct the Spring City division, as well as both tunnels was rejected by the government. The company received notice to proceed on the Ephraim Tunnel on September 3, 1935.[14]

In an attempt to keep construction costs low, Project Engineer Larson sought the assistance of Civilian Conservation Corps forces to excavate the feeder canals for both divisions.

---

11. R. F. Walter to Elwood Mead, ltr, 8 August 1934, RG 115, Office of Chief Engineer, Denver, General Correspondence file, Straights, 1906-42, Sanpete - Sun River, Box 620, straights, Preliminary Investigations Utah, May 1934 - Dec 1935, folder 37-O; *Project History Sanpete Project 1936-1939*, vol. 1, (1937) pp. 10-1; Department of the Interior, Water and Power Resources Service, *Project Data* (Denver: Government Printing Office, 1981), 1129; Department of the Interior, Bureau of Reclamation, "Report on Price River Basin Investigations--Utah," *Project Reports*, RG 115, box 423, 51; Department of the Interior, Bureau of Reclamation, "Gooseberry Project Utah: Recommended as a participating Project in the Colorado River Storage Project," *Project Reports*, Region 4, Salt Lake City, January 1953, box 423, 1.
12. U.S. Bureau of Reclamation, *Water and Power Resources Service: Project Data*, (Washington DC: Government Printing Office, 1981,) pp. 1131.
13. Department of Interior, Bureau of Reclamation, *Schedules, Specifications, and Drawings: Spring City Tunnel*, spec. 747, 1937, pp. 8-9; Department of Interior, Bureau of Reclamation, *Schedules, Specifications, and Drawings: Ephraim Tunnel and Spring City Tunnel*, spec. 602, 1934, pp. 8-9; *Project History Sanpete Project 1936-1939*, vol. 1, (1936) pp. 11-2, 20.
14. *Annual Project History Sanpete Project*, 1936, pp. 7-8, 12; Cecil Jacobson, "Construction of Ephraim Tunnel," *The Reclamation Era*, December 1938, p. 242.

After reaching an agreement regarding CCC assistance, camp DBR-6 was established August 13, 1934, to house the workers. However, on October 20, they were transferred to work on the Ogden River Project. Summer Camp BR-6 was started July 23, 1935, to provide workers for the Sanpete feeder canals leading to the Ephraim Tunnel. Civilian Conservation Corps forces excavated the South Feeder Canal running from Sealey's Creek and Beck's Feeder Canal from Beck's Creek to the Ephraim Tunnel entrance prior to the Morrison-Knudsen Company began working on the Tunnel.[15]

Morrison-Knudsen began construction operations on September 30, when it started excavating Ephraim Tunnel. The tunnel was to be roughly 7,200 feet long with a six and one-half foot high horseshoe shaped cross section. It penetrated through shale and limestone formations. Initially the construction focused on the outlet end, where the contractor's decision to use a 24-inch gauge track in the tunnel slowed progress for the first 1500 feet. The mine cars made for crowded conditions in the tunnel. Tunneling operations speeded up after the contractor changed to an 18-inch gauge track which increased the space available for work inside the tunnel. The contractor averaged eighteen linear feet of excavation per day.[16]

A heavy snowfall during the winter of 1935-1936, resulted in the suspension of tunneling operations on January 30, 1936. Excavation on the outlet end of Ephraim Tunnel resumed on May 28th and began on the inlet end on July 15th. Both ends continued tunneling towards each other, finally meeting on November 22, 1936. Inspections of the tunnel indicated the need to add either a concrete lining or timbering to prevent sloughing. By termination of the contract on February 15, 1937, Morrison-Knudsen had "concrete-lined 398 linear feet in the vicinity of the fault zone by working from both ends."[17]

The government terminated the contract for Ephraim Tunnel on February 15, 1937, with a change order to the contract, when unforeseen and unspecified conditions stopped delivery of needed materials to the construction site. This change released the contractor and turned the

---

15. *Project History Sanpete Project 1987-1990*, vol. XV., p. 27; *Project History Sanpete Project 1936-1939*, vol. I, pp. 7-8.
16. Jacobsen, "Construction of the Ephraim Tunnel," p. 242; *Project History Sanpete Project*, 1936, p. 8.
17. Jacobson, "Construction of the Ephraim Tunnel," p. 242; *Project History Sanpete Project*, 1936, p. 8.

work of lining the tunnel over to Reclamation. At this time the Ephraim Tunnel was capable of handling diversions for the 1937 irrigation season. During July, water was diverted through the tunnel for the first time.[18]

During August 1937, the Morrison-Knudsen Company turned its camp and buildings over to the government. The remaining work would be accomplished by force account in the fall and winter. After the facilities were fixed up, Reclamation forces moved in. Civilian Conservation Corps enrollees hauled equipment to the tunnel, and built the two feeder canals. Reclamation forces installed 1,335 linear feet of permanent timbering in the tunnel and lined 428 linear feet with concrete during the fall, thus completing this phase of the project in December 1938.[19]

Advertisements for the Spring City Tunnel were issued in early 1935 at the same time bids were requested for Ephraim Tunnel. Bids were opened on July 8, 1935. The government believed the low bid of $172,487.50 for Spring City Tunnel was too high, and the government re-advertised the contract under specification 747, on August, 23, 1937, for the Spring City Tunnel only. After reviewing eleven bids, the government decided to accept Dan Teters & Company's bid of $128,235. Dan Teters & Company received notice to proceed on November 8, 1937.[20]

Dan Teters & Company began excavation of the Spring City Tunnel outlet portal during November 1937, and by the end of the year had complete 13% of the project. Inspectors believed this rate of progress would ensure completion of the tunnel before the March 1940 termination date. Cecil Jacobsen, Assistant Engineer on the Ephraim Tunnel, optimistically reported the Spring City Tunnel "will probably be completed prior to the 1939 irrigation season." This prediction failed to materialize due to several problems; and water was not diverted until the fall of 1941.[21]

---

18. *Project History Sanpete Project*, 1936, p. 8; Jacobson, "Construction of the Ephraim Tunnel," p. 242.
19. Jacobson, "Construction of the Ephraim Tunnel," pp. 242-3; *Project History Sanpete Project*, 1937, pp. 25-6.
20. *Project History Sanpete Project*, vol. 1, 1936-9, 1937 p. 7, 11, 19.; 1938, p. 10.
21. Jacobson, "Construction of the Ephraim Tunnel," p. 243; *Project History Sanpete Project 1987-1990*, vol. 15, p. 29; *Project History Sanpete 1936-1939*, vol. 1, (1937) p. 28.

While construction on the Spring City Tunnel outlet portal continued during early 1938, complaints about the company reached the Bureau of Reclamation. An anonymous letter charging the Dan Teters Company with violating wage and labor laws arrived at Reclamation's office in Salt Lake City, Utah, during late March 1938. "An employee on project" stated the company was forcing its men to work more than eight hours per day and that other employees were receiving less than the required minimum wage in order to keep their job. The Salt Lake office directed associate engineer M. S. Ross, to investigated the complaint. Ross discovered that Mr. Donald Madison, who's work was unsatisfactory and who was let go, wrote the letter. With one exception, the charges were either misleading or patently false; Ross did find out that the company violated the eight-hour law. Larson informed the Commissioner of Reclamation of the violations and stated the company had been fined $75.00[22]

The contractor also experienced additional difficulties in acquiring skilled labor. Although a number of miners were on relief and reemployment roles, few were skilled in machine mining, additionally, a shortage of chuck tenders existed. This problem was exacerbated when qualified individuals quit without advance notice or when unqualified workers were let go. Unable to find eligible workers from the area, the company asked permission to seek employees from other regions within Utah. Utah's employment bureau and the Bureau of Reclamation authorized the company to hire persons for these position without obtaining prior clearance.[23]

Civilian Conservation Corps forces also began working on the feeder canals for the Spring City Tunnel. They excavated the Cedar Creek Feeder Canal and Brough's Fork Feeder

---

22. Anonymous to Bureau of Reclamation, ltr, no date, RG 115, Office of Chief Engineer, Denver, Straights, 1906-42, Sanpete - Sun River, Box 496, Straights, Labor Provisions on PWA Project: Sanpete, fldr 31-M, Letter is signed "An employee on project," which a later investigation proved to be Mr. Donald W. Madison; M. S. Ross to E. O. Larson, ltr, 11 April 38, RG 115, Office of Chief Engineer, Denver, Straights, 1906-42, Sanpete - Sun River, Box 496, Straights, Lab Prov on PWA Project: Sanpete, fldr 31-M; E. O. Larson to Commissioner, ltr, 14 April 1938, RG 115, Office of Chief Engineer, Denver, Straights, 1906-42, Sanpete - Sun River, Box 496, Straights, Lab Prov on PWA Project: Sanpete, fldr 31-M.

23. Josepw S. Mayer to Dan Teters Company, ltr, 16 April 1938, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, fldr 31-M Straights, Labor Prov on PWA Projects, Sanpete ; E. O. Larson to R. F. Walter, Chief Engineer, Denver, ltr, 20 April 1938, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, fldr 31-M Straights, Labor Prov on PWA Projects, Sanpete; R. F. Walter, Chief Engineer, Denver, to E. O. Larson, ltr, 21 April 1938, RG 115, Office of Chief Engineer, Denver, Gen Corres, Straights, 1906-42, Box 496, fldr 31-M Straights, Labor Prov on PWA Projects, Sanpete.

Canal during 1938. In addition, CCC crews enlarged the existing Reeder Ditch, which was in use while waiting for completion of the tunnel.[24]

Excavation of the Spring City Tunnel inlet portal began in June 1938. Workers continued tunneling from both ends until August when work on the outlet end was terminated. Thereafter, construction continued from the inlet portal. Just as it appeared the tunnel would be holed through, a new problem arose.[25]

Construction of the Spring City Tunnel was briefly delayed from September 10, 1938 to September 12, 1938, when workers on the graveyard shift called for a strike. After persuading the day shift to join in, two men went to the main camp to encourage the employees to strike. All work stopped as a majority of the workers protested, and pickets were established. It appeared that few individuals even knew a strike was planned. An informal committee went to discuss their demands with Mr. Teters, but he refused to negotiate at that time and informed the workers that anyone who wanted to work should come back on the 12th.[26]

Realizing the employees' demands were quite minor, Mr. Teter, was willing to bargain, but wanted to ensure the talks would bind the entire work force. Representatives of the International Union of Mine, Mill and Smelters Workers arrived on the 12th to open discussions. The major issues for the strike were a demand for an eight hour day, permission to live away from the company camp, and an increase in wages. Talks went quickly as Teter conceded almost every point and agreed to establish a "closed shop." By four o'clock that afternoon work was resumed.[27]

The company also agreed it would obtain all of its employees from Local Union #448 in Provo, Utah. Although the Utah State Employment Service refused to clear or refer any workers for the project during the strike; the short duration of the strike and the contract made this threat

---

24. *Project History 1936-1939*, (1937), p. 27 (1938), pp. 21, 23, 25.
25. *Project History Sanpete Project 1987-1990*, vol. 15, p. 28.
26. M. S. Ross to Construction Engineer Provo, Utah, memo, 4 October 1938, RG 115, Office of the Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Sanpete - Sun River, Box 496, folder 31-M Straights, Labor Provision on PWA Projects Sanpete, NARA, Denver.
27. *Ibid*., *Contract with the International Union of Mine, Mill and Smelter Worker*, no date, Spring City, Utah, signed by Dan Teters, Arthur Ashby, & E. M. Wilden, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, folder 31-M Straights, Labor Provision on PWA Projects Sanpete.

irrelevant. Teters informed the Bureau of Reclamation that all future requests for workers would be handled by the union.[28]

Excavation operations resumed on the tunnel. On September 13, workers punched their way through the remaining rock. The contractor then began concrete lining of the sides and the arch; leaving the invert unlined to provide additional working room. By December, only 1050 linear feet of concreting remained. After the Federal Government terminated Dan Teters & Company's contract was terminated on February 10, 1939, Reclamation resumed operations on Spring City Tunnel by force account. Reclamation forces completed the remaining work by the end of September 1939.[29]

Post-Construction History

Although the tunnels worked as intended, plans to expand the Sanpete project simmered throughout the 1940s and 1950s. Studies of the previously considered Freeman-Allred reservoir to supplement the Spring City Division indicated, as in the earlier investigations, that costs would outweigh the possible benefits. Plans to implement the Gooseberry Division were examined in 1951 and again in 1959, but, again it was considered too expensive, especially in regards to obtaining water rights from the Price river.[30]

Ephraim Irrigation Company was responsible for maintaining and operating the Ephraim Tunnel, while the Horseshoe Irrigation Company managed the Spring City Division. The companies met their financial obligations, making their payments on time, with the Ephraim Irrigation Company making its final payment in 1979, and Horseshoe Irrigation in 1980.[31]

Several unexpected problems arose over the years. Although the tunnels were built to

---

28. True E. Robbins to Dan Teters & Co., ltr, 12 September 38, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, folder 31-M Straights, Labor Prov on PWA Projects, Sanpete; True E. Robbins to Dan Teters & Co., ltr, 12 September 38, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, folder 31-M Straights, Labor Prov on PWA Projects, Sanpete; Teters to E. O. Larson, ltr, 13 September 38, RG 115, Office of Chief Engineer, Denver, General Correspondence, Straights, 1906-42, Box 496, folder 31-M Straights, Labor Prov on PWA Projects, Sanpete; *Contract with the International Union of Mine, Mill and Smelter Workers.*
29. *Project History Sanpete Project 1936-1039*, (1938), pp. 6, 25. *Project History Sanpete Project 1936-1939*, vol. 1, (1939) p. 8.
30. Elwood Mead to B. W. Dalton, ltr, 12 October 1933, RG 115, Office of Chief Engineer, Denver, General Correspondence, file, Straights, Box 620, Straights, Prelim. Invest. Utah October 1933 - April 1934, folder 37-O; *Project History Sanpete Project 1983*, vol. 11, p. 3.
31. *Project History Sanpete Project 1983*, vol. 11, p. 4; *Project History Sanpete Project 1987-1990*, vol. 15, pp. 30-1.

shift water across the divide, at times, the companies did not need the additional water. The tunnel's efficiency was clearly demonstrated during the 1980s when Sanpete County endured several years of flooding. Although more than enough rain fell on the western part of the Great Basin divide, the tunnels brought in even more water from the eastern side, thus causing even worse floods. In 1984, it was necessary to close the Ephraim Tunnel to limit the devastation. One morning three men from the Ephraim Irrigation Company flew up to close the tunnel gates in a Utah National Guard helicopter. They expected the chopper to return for them, but it never did. A small plane attempted to drop the men food and sleeping bags, but high winds in the mountains prevented it from completing the task. Finally an Emery County Search and Rescue team got the men down at 3:00 a.m. the next morning.[32]

As Utah underwent a series of floods and droughts during the 1970s and 1980, it became important to manage water usage. Realizing they needed additional water, the Horseshoe and Ephraim Irrigation companies worked out a water exchange and storage agreement with Emery Water Conservancy District, in which "early season water would be stored in Joes Valley reservoir to replace late season Cottonwood water diverted through the tunnels." This contract resulted in the exchange of about 100 acre feet per division per year.[33]

Settlement of the Project

Construction of this project played an important role in increasing settlement of the areas around Spring City and Ephraim though both towns remain near their 1930 populations. Spring City had fewer residents in the 1980s than in 1930. Supplemental irrigation helped to stabilize agricultural production. Unfortunately, agricultural development has outstripped the water resources available from within and outside of the Sanpete project.[34]

Uses of Project Water

Water from the project is used almost exclusively limited to livestock and agriculture.

---

32. *Ibid*.; *Project History Sanpete Project 1983*, vol. 11, pp. 6, 15; *Project History Sanpete Project 1984*, vol. 12, p. 14.
33. Dept. of Interior, Bureau of Reclamation, *Project History Sanpete Project*, 1987-90, vol. XV, RG 115, Eng. & Res. Ctr., Project Histories, 1911-91, Box #149, San Pete Project, 1987-90 folder, p. 30.
34. *Project History Sanpete Project 1983*, vol. 11, pp. 3-4.

Although alfalfa, hay, barley, and grain production benefitted from the project, these crops were usually grown to feed the farmer's livestock. Increased alfalfa and grain production had a direct impact on livestock production.[35]

Initial increases in crop values were directly related to supplemental irrigation from the project. However, severe losses and fluctuations occurred during the floods and droughts of the 1970s and 1980s. Although the overall average during the 1980s included six years of decline, the Spring City division crops values wildly swung between a low of $148 per acre to a high of $225 an acre.[36]

Economically the most important animals in the Sanpete Valley have been sheep and turkeys. Previously, farmers were forced to make tough decisions on whether or not to sell their sheep during winter, especially when feed prices were increasing, in order to avoid economic hardship. However, as forage production stabilized, area stockmen were able to increase their herds and to sell their sheep when prices were higher. Poultry production, especially turkeys, has grown at a tremendous rate over the years.[37]

Although some attempts at using project water for industrial or power generating purposes have been made, these efforts have failed. However, Ephraim did install a 1--inch PVC culinary water system pipe through the tunnel in 1988.[38]

Conclusion

As one of the smallest reclamation projects built during the Great Depression, Sanpete is often overlooked. It lacks the glamour of Hoover Dam or the economic and social impact of the Colorado-Big Thompson Project. However, Sanpete did provide supplemental irrigation for farmers and ranchers around Ephraim and Spring City, and has been doing so for over fifty years. Continued agricultural development has taxed the water supplies to such a degree that Sanpete can no longer meet the demands of the region. Still, the Sanpete Project was successful.

---

35. *Ibid*., p. 3.
36. *Project History Sanpete Project 1987-1990*, vol. 15, pp. 7-8.
37. *Project History Sanpete Project 1983*, vol. 11, p. 3.
38. *Project History Sanpete Project 1987-1990*, vol. 15, p. 19a.

Bibliography

Primary Sources

Manuscript Collections

RG 115, Department of Interior, Bureau of Reclamation, *Project History Sanpete Project*, 1936-9, 1977-90, NARA, Denver.

RG 115, Department of Interior, Bureau of Reclamation, Project Reports 1910-55, Sanpete Project, NARA, Denver.

RG 115, Department of Interior, Bureau of Reclamation, General Correspondence Engineering, Office of Chief Engineer, Denver, Straights, NARA, Denver.

Government Documents

Department of the Interior, Bureau of Reclamation, *Schedules, Specifications and Drawings: Ephraim Tunnel and Spring City Tunnel*, specification 602, 1935.

Department of the Interior, Bureau of Reclamation, *Schedules, Specifications and Drawings: Spring City Tunnel*, specification 747, 1935.

Articles

Jacobson, Cecil, "Construction of the Ephraim Tunnel," *The Reclamation Era*, December 1938, vol. , no. 12., pp. 242-3.

Secondary Sources

Books

Hardy, Clyde, *Eastern Sevier Valley: Sevier and Sanpete Counties Utah With Reference to Formations of Jurassic Age*, *Bulletins of the Utah Geological and Mineralogical Survey*, (Salt Lake City: University of Utah, 1952).

Index