

Dalton Gardens Project

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Dalton Gardens Project

The Dalton Gardens Project was developed privately in the early 1900s to bring irrigation water to approximately 979 acres of land in northern Idaho. Reclamation stepped in to help the project's water users rehabilitate and improve their irrigation system in the mid-1950s, and again in the early 1960s, preventing agriculture on the project from going under.¹

Project Location

The Dalton Gardens Project is located approximately two miles north of Coeur d'Alene, Idaho, in Kootenai County. Project lands are in the Idaho panhandle on the eastern edge of an extensive glacial outwash plain known as Rathdrum Prairie. The plain is several miles wide, and is surrounded by forested mountains on the north, east, and south. On the west it merges into the Spokane Valley plain at the Washington-Idaho border.² The region experiences warm, dry summers, and cool winters.³ Average annual precipitation is about twenty-five and one half inches. Temperatures in the region range from minus 26 degrees Fahrenheit to 104 degrees Fahrenheit.⁴ The growing season lasts approximately 180 days. Drainage within the region is very good, eliminating problems of salinity or alkalinity.⁵

Historic Setting

Early inhabitants of Idaho's panhandle consisted of the Kootenai and Coeur d'Alene Indians, who were hunters and gatherers until the encroachment of trappers and explorers

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1. Water and Power Resources Service, *Project Data*, (Denver: Government Printing Office), 1984, 417, 419.
 2. Department of the Interior, Bureau of Reclamation, "Project Histories: Dalton Gardens Project," 1955-63, 17 (hereafter referred to as "Project History" followed by year and page).
 3. Department of the Interior, Bureau of Reclamation, "Project Histories: Rathdrum Prairie Project," 1976-8, iii (hereafter referred to as "Project History: Rathdrum Prairie Project" followed by the year and page).
 4. Water and Power, *Project Data*, 420.
 5. "Project History: Rathdrum Prairie Project," (East Greenacres Unit) 1972-3, 183.

brought about changes to their lifestyles, turning them toward more settled agriculture.⁶

Trappers, traders, explorers, and settlers on their way westward, traveled through this region of Idaho, but few had designs on settling the area until the latter half of the 1800s.⁷ However, David Thompson established Kullyspell House as a trading post on Lake Pend Oreille in 1809; and Father Pierre-Jean DeSmet, a Jesuit priest, established a mission at Cataldo, Idaho in 1842 for the purpose of bringing Christianity to the Coeur d'Alene Indians. The first recorded settlers in the region was a trapper named Conners, who established the town of Rathdrum in 1861.⁸

Completion of Mullan Road by the US Army in 1861, increased the number of settlers in the region by creating a trail linking Missouri and Columbia River traffic, and bringing goods, soldiers, settlers, and miners from Fort Benton, Montana, around the north end of Coeur d'Alene Lake to Fort Walla Walla, Washington. The first extensive agriculture in the area resulted from the existence of Fort Sherman, which was built as a way station on Mullan Road in 1878. The post provided a market for feed, as the Army kept approximately 100 mules and horses at the post. Several of the region's settlers began growing barley, hay, and oats to meet the Army's needs. Additional agricultural markets appeared with the completion of the Northern Pacific Railroad's mainline, which passed through Rathdrum Prairie in 1883. As a result, a number of irrigation schemes were promoted during the 1890s to stimulate land sales; however, little in the way of construction on these irrigation systems was accomplished until after the turn of the century.⁹

The Dalton Gardens Project was one of several small irrigation projects undertaken in this region of Idaho from 1900-1910. Like most of the projects in the region, it too was

6. Robert F. Peterson. *Idaho: A Bicentennial History*. (New York: W. W. Norton & Company, Inc., 1976), 20-1.

7. *Ibid.*, 22-9.

8. "Project History: Rathdrum Prairie Project," (East Greenacres Unit) 1972-3, 1-3.

9. *Ibid.*; "Project History," 1955-63, 2-3.

developed as a fruit-raising area in small tracts. On December 4, 1907, the Hayden-Coeur d'Alene Irrigation Company recorded a plat of land, which they named Dalton Gardens, to be added to the lands irrigated by Hayden Lake. This private company had already built the project's original irrigation system, and put it into operation in 1905. The company reorganized on March 8, 1916, and became the Dalton Gardens Irrigation District.¹⁰

The project's original facilities consisted of a pumping plant on Hayden Lake, a discharge line, and a low pressure pipe distribution system, designed to deliver water at the high point of each tract in order for the water to be applied by gravity. The pumping plant contained one, 125-horsepower electric motor with a design capacity of 5,500 gallons per minute. Because the project had no storage facilities the pump and motor operated on a continual basis throughout each irrigation season. The project's pumping plant was housed in a building which also housed two separate domestic water pumps.¹¹

The irrigation company built the system so that a welded steel suction pipe for the irrigation pump would discharge into a one mile long, twenty-four to twenty-six inch diameter, wood-stave pipe supply line. The main pipeline which went through the irrigation district was mostly twelve to twenty-four inch diameter concrete pipe. The concrete pipe used by the company was extremely porous, and of inferior quality compared to later standards. The lateral system installed by the company consisted of similar concrete pipe of eight inches or less; thus the lateral system presented water users with the same types of problems as did the main line.¹²

Frequent system failures in the early 1950s resulted in Reclamation investigating the district's irrigation system. Initially, Reclamation regarded the Dalton Gardens Irrigation

10. "Project History," 1955-63, 2-3.

11. *Ibid.*

12. *Ibid.*

District as a possible unit to the much larger irrigation development known as the Rathdrum Prairie Project, on which Reclamation had worked beginning a decade before. What Reclamation was considering as the Eastern Division of the Rathdrum Prairie Project consisted of three small irrigation districts which used Hayden Lake as their source of water. These districts were Dalton Gardens, consisting of 979 acres; Avondale, consisting of 860 acres; and Hayden Lake, consisting of 1,577 acres.¹³ In the summer of 1952, Reclamation conducted a reconnaissance investigation of the proposed Eastern Division of the Rathdrum Prairie Project. In October of 1952, Reclamation issued a report recommending rehabilitation of the irrigation works in the three irrigation districts. As a result, both Dalton Gardens and Hayden Lake Irrigation District's appealed to Reclamation for assistance in rehabilitating their systems. After explanation of the report, Avondale Irrigation District also appealed to the Government for assistance.¹⁴ Early in 1953, each of the three districts submitted their own separate reconstruction plans to Congress, as Reclamation decided to proceed with the work on the basis of separate projects. The districts believed that pushing for the one larger development might cause delays with Congress in appropriating funds.¹⁵

Project Authorization

As a result of the frequent service failures within the Dalton Gardens Irrigation District, the request for appropriation did not go through regular Reclamation or Executive Channels. The district was able to obtain direct Congressional action due to the emergency nature of the requirement. Construction and emergency rehabilitation of the Dalton Gardens Project was authorized under the Interior Appropriations Act for fiscal year 1954, dated July 31, 1953 (67

13. Water and Power, *Project Data*, 419.

14. "Project History: Rathdrum Prairie Project," (Hayden Lake Unit) 1956, 4-6.

15. Water and Power, *Project Data*, 419.

Stat. 261).¹⁶

Because of later problems with the irrigation system, Congress reauthorized the project under Public Law 87-289, 87th Congress, 1st Session (75 Stat. 588), which was approved September 22, 1961. This reauthorization called for emergency pipe rehabilitation consisting of replacement of lateral pipelines, lining the interiors of the discharge pipelines, and other work required in replacement, modification, or improvement of the district's pipeline system.¹⁷

Construction History

The Dalton Gardens Irrigation District relies on Hayden Lake for its water supply. The irrigation system begins with the pump house, located on Hayden Lake, one and one quarter miles northeast of the project lands. The pump house contains the pumping units for both the district's irrigation and domestic water supply (the domestic water system was also constructed by the district, although never rehabilitated by Reclamation). The irrigation pumps are supplied by an 800 foot long, twenty-four inch diameter, welded steel intake pipe. There is a 150,000 gallon steel reservoir built on a hill 100 feet above the project lands. The tank is supplied by a 3,436 foot long, twenty-four inch diameter welded steel pipe. This pipe connects the tank to the pump; and the same size pipe continues about 2,940 feet beyond the steel reservoir. The system was built with turnouts arranged so that each five acre plot has one available for supplying its water. These turnouts are connected to one another and supplied by 55,270 feet of distribution lines with a minimum delivery head of 35 pounds per square inch. Individual water users install their own sprinkler systems to the turnouts to distribute the water over their fields.¹⁸

The district's irrigation system in the early 1950s had frequent interruptions in service

16. "Project History," 1955-63, 3-4, 17; Water and Power, *Project Data*, 419.

17. "Project History," 1955-63, 17; Water and Power, *Project Data*, 419.

18. "Project History," 1955-63, 97-8.

caused by leaks and their repair; the increasing cost of providing emergency repairs; and the resultant problem of inadequate water deliveries.¹⁹ These problems led to rehabilitation by Reclamation. The most expensive aspect of solving these problems came from the need to replace the district's distribution system. Because of the numerous problems only the pump house and the district-owned right-of-ways could be utilized in the rehabilitation program.²⁰

The contract for earthwork, installing new steel pipelines, remodeling the existing pumping plant by installing new pumps and motors, and construction of the 150,000 gallon steel equalizing water reservoir was awarded to Intermountain Company, on May 13, 1954. The contractor acknowledged notice to proceed on May 18, 1954; and began work on June 10, 1954. The contractor encountered no problems during the construction period. Work, having progressed smoothly, was completed by January 10, 1955, with final Government approval occurring in April of 1955.²¹

Post-Construction History

The first big problem that the Dalton Gardens Irrigation District faced after rehabilitation was completed, came during the 1956-1957 irrigation season. The float-switch control on the steel storage tank caused several shutdowns during that season. The floats that were originally installed were made of a ceramic material, and both floats were broken by heavy frosts during that winter. In an attempt to solve the problem, the district installed homemade floats of sheet metal during the spring of 1957. However, one of the sheet metal floats was obstructed several times by a welding icicle in the float-well joint. As a result, the water supply again failed several times. The district finally overcame the problem by replacing the troublesome float with a glass

19. *Ibid.*, 3-4.

20. *Ibid.*, 4-5.

21. *Ibid.*, 5, 36; Water and Power, *Project Data*, 419.

vinegar jug half filled with sand. The jug had the proper shape and weight to negotiate past the welding icicle on a consistent basis, thus preventing the district from having engage in the expensive process of shutting down operations, emptying the tank and removing the welding icicle.²²

The next problem faced by the district also occurred in the latter half of the 1950s, and was the most severe of the district's problems. The distribution pipelines for the Hayden Lake Irrigation District of the Rathdrum Prairie Project, the Dalton Gardens Project, and the Avondale Project, were all installed by the same contractor under the same contract; thus, all of the pipelines were of the same type. During construction the contractor did not paint the inside of the steel reservoirs and used bare steel pipe for the distribution system. On October 8, 1957, Reclamation conducted its biennial exam of the inside of the 150,000 gallon storage tank on the Dalton Gardens Project. Inspectors observed large amounts of rust encrusting the sidewall and flaking off onto the tank's floor. Reclamation took note of these conditions and requested that the inside of the storage tanks in Hayden Lake, Dalton Gardens, and Avondale be painted. The storage tank in the Hayden Lake Unit was painted; but Reclamation was unsuccessful in their efforts to get the Dalton Gardens and Avondale Irrigation Districts to paint their tanks.²³

At the same time, Reclamation requested that all three irrigation districts send them any samples of used pipe the districts had available so that the pipe could be inspected. In December of 1958, the Dalton Gardens Irrigation District sent Reclamation's Regional Office a two foot section of four inch steel pipe, and two badly corroded discs which were taken from their system. The results of testing this pipe sample led to a field survey and lab study of the corrosion problem. These studies required the assistance of the specialists and facilities in Reclamation's

22. "Project History," 1955-63, 98.

23. *Ibid.*, 6-7.

Denver Office. These studies continued through Reclamation's biennial exam of the Dalton Gardens Project, which was held from October 17-19, 1959. During this exam Reclamation uncovered 50 feet of the district's four inch pipeline. They discovered severe corrosion and three perforations. This alerted Reclamation that all three irrigation districts faced serious problems with their distribution systems, and that corrective measures were required as soon as possible.²⁴

The corrective measures required were dependent on the enactment of the necessary authorization, which was approved by Congress on September 22, 1961.²⁵ Rehabilitation of the distribution systems for all three districts was divided into two contracts. The rehabilitation plan for the Dalton Gardens Project included mortar lining of the interior of 6,650 feet of the existing twenty-four inch discharge pipeline; replacement of ten and one-half miles of corroded steel pipeline in the distribution system with corrosion-resistant pipe ranging from four to sixteen inches in diameter; and modifying the district's existing facilities, including replacement of turnouts and installation of additional shutoff valves.²⁶

The contract for cement-mortar lining and subsequent sterilization of the district's deteriorated pump manifolds and discharge lines was granted to Raymond International, Incorporated, on August 21, 1962. The contractor acknowledged notice to proceed on September 19, 1962, having 180 days to complete their contract. Work began when the contractor moved equipment onto the site and began interior cleaning of the discharge line. The contractor encountered no delays during construction, and completed work on November 26, 1962.²⁷

24. *Ibid.*

25. *Ibid.*

26. *Ibid.*, 13.

27. *Ibid.*, 13, 57-8.

Snelson Plumbing and Heating, Incorporated, received the contract for replacement of the corroded steel pipeline, and modifying the district's drain connections and other accessories, on July 5, 1962. The contractor acknowledged notice to proceed July 26, 1962, setting the contract's completion date for July 15, 1964. By the end of September of 1962 the contractor had already delivered and distributed 10,450 feet of pipe along the lateral right-of-ways, and by early October had begun excavating pipe trenches. All work progressed smoothly, and the contractor finished all earthwork by May of 1963. The contractor completed the contract in June of 1963, more than one year ahead of schedule.²⁸

For the most part, the Dalton Gardens Irrigation District has faced few serious problems since the early 1960s. Their maintenance program has included the use of chemicals to control weeds around the project features; painting features where needed; and repairing occasional leaks in the pipeline. However, over the years the bare steel intake pipeline has caused recurring problems due to the freeze-thaw action that occurs in the region. The district has taken steps to repair the pipeline on several occasions.²⁹

Settlement of Project Lands

Project lands were settled by private owners prior to, and during construction of the original project works. Consequently, no lands were withdrawn for future settlement, and Reclamation's involvement in the project did not affect settlement.³⁰

Project Benefits and Uses of Project Water

Most of the farm tracts within the Dalton Gardens Project are from one to ten acres. Most of the farms on project lands provide food for owner consumption, with occasional surplus

28. *Ibid.*

29. "Project History," 1964-6, 3; "Project History," 1973-4, 10; "Project History," 1975-6, 10.

30. "Project History," 1955-63, 1-5.

for outside markets. The majority of Dalton Gardens families receive the largest share of their household income from full or part-time employment away from the farm. However, some farms are large enough to support themselves.

Production of fruit crops was the initial enterprise on project farms; however, over the years a shift to other crops has taken place. The main reason for this shift stemmed from competition from other areas better suited for fruit production. Presently, most farms produce pasture and hay crops; although, those farm units large enough to do so, produce specialty cash crops such as small fruits and vegetables.³¹

Conclusion

Agriculture, forest industries, aluminum, the railroad, and tourist trade all contribute to the economic well being of the project area.³² Without Reclamation's rehabilitation of the project this list would not include agricultural industry. Rehabilitation of the Dalton Gardens Project kept the district's water users from facing the complete collapse of their irrigation works, and ultimately the end of most of their agricultural capabilities.

31. *Ibid.*, 3; Water and Power, Project Data, 419.

32. "Project History," 1955-63, 3.

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