

Minidoka Project Idaho

Pacific Northwest Regional Office Snake River Area Office

16 Counties in Wyoming and Idaho
(See Narrative)

- [General Description and Plan](#)
- [Development](#)
- [Benefits](#)
- [Project Data](#)
- [Project Water Data](#)
- [Project History](#)
- [Engineering Data](#)
- [Contact Information](#)



Grassy Lake Dam and Reservoir



General Description

Minidoka Project lands extend discontinuously from the town of Ashton, in eastern Idaho along the Snake River, about 300 miles downstream to the town of Bliss in south-central Idaho. The project furnishes irrigation water from five reservoirs that have a combined active storage capacity of more than 3 million acre-feet.

The project works consist of Minidoka Dam and Powerplant and Lake Walcott, Jackson Lake Dam and Jackson Lake, American Falls Dam and Reservoir, Island Park Dam and Reservoir, Grassy Lake Dam and Grassy Lake, two diversion dams, canals, laterals, drains, and some 177 water supply wells.

Plan

Natural flow of the Snake River and some of its tributaries, and water stored in the reservoirs at Jackson Lake, Grassy Lake, Island Park, American Falls, and Lake Walcott are delivered at numerous diversion points to the A & B, Falls, Fremont-Madison, Burley, and Minidoka Irrigation Districts, American Falls Reservoir District No. 2, and supplemental supply contractors.

A full or supplemental irrigation water supply is furnished to about 1.1 million acres. Water from Palisades Reservoir in the Palisades Project is instrumental in helping meet the Minidoka Project water requirements.

Originally power was developed on the project for pumping water to lands lying above the gravity canals and for pumping drainage water. Power was also furnished to several small communities in the area. Subsequently, Federal power has been provided for groundwater pumping projects.

Unit descriptions and facilities

Minidoka Dam and Powerplant

Minidoka Dam is a combined diversion, storage, and power structure located just south of Minidoka, Idaho. A key structure in the initial development of the project, the zoned earthfill dam is 86 feet high. The reservoir, Lake Walcott, has a total storage capacity of 210,200 acre-feet (active 95,200 acre-feet). Water is diverted at the dam into a canal on each side of the river. The original concrete powerplant, forming a section of the dam, was completed in 1909 and had five generating units. Unit 6 was added in 1927 and unit 7 in 1942 to provide a total capacity of 13,400 kilowatts.

During 1989 - 1990, the spillway radial gates were replaced. The original gates were installed in 1913 and were in need of complete replacement.

Units 1 through 5 in the Minidoka Powerplant have been retired and preserved as museum pieces in the powerplant. Unit 6 has been replaced and modern controls have been installed in Unit 7. In addition, a new powerhouse, the Allen Inman Powerplant, housing two units was constructed near the left abutment of the dam. With these changes, the nameplate generating capacity was increased from 13,000 kilowatts to about 28,000 kilowatts. These activities were completed in 1997.

North Side Canal

Water is diverted from the north side of Lake Walcott into the North Side Canal, a gravity canal and lateral system serving 72,000 acres of land called the Gravity Division, in the vicinity of Rupert, Idaho. The 8-mile main canal has an initial capacity of 1,700 cubic feet per second.

South Side Canal

Water is diverted on the south side of Lake Walcott near the right abutment of Minidoka Dam into the South Side Canal. The 13-mile canal serves a narrow strip of the Gravity Division before delivering the majority of its flow to a series of three large pumping plants. Each plant lifts the water about 30 feet, for a total lift of about 90 feet. The system, served by the pumps, is known as the South Side Pumping Division and serves 48,000 acres adjacent to Burley and Declo. The canal is 13 miles long and has an initial capacity of 1,325 cubic feet per second.

Title to the South Side Canal, as well as all rights-of-way, pumping plants, canals, laterals, drains, transmission lines, and appurtenant facilities, are to be transferred to the Burley Irrigation District (the operating agency for the South Side Pumping Division) not later than January 27, 2000, pursuant to Congressional authorization.

Jackson Lake Dam

A temporary rockfilled crib dam was completed in 1907 by the Bureau of Reclamation at Jackson Lake to store 200,000 acre-feet for the Minidoka Project until the storage requirements could be determined. A portion of this dam failed in 1910, and in 1911 a concrete gravity structure with earth embankment wings was built at the site. The new dam increased storage capacity to 380,000 acre-feet. In 1916, further construction raised the dam 17 feet to a structural height of 65.5 feet, with a total storage capacity of 847,000 acre-feet (active 847,000 acre-feet).

Safety concerns were identified at the dam in the mid-1970's, and from 1977 to 1989 the level of Jackson Lake was maintained at a lower than normal level because of concerns for possible dam failure during an earthquake. The dam foundation was completely replaced using a technique called dynamic compaction, and a grout curtain was installed below the foundation. The combination water release structure/bridge was also replaced. This work was completed in 1989 under authority

of Reclamation's Safety of Dams Act making the full capacity available again.

American Falls Dam

Project storage was increased by 1,700,000 acre-feet in 1927 with the completion of American Falls Dam, a 94-foot-high composite concrete and earth structure on the Snake River near American Falls, Idaho. A core-drilling program in the early 1960's revealed that the concrete in portions of the dam was in a relatively advanced stage of deterioration due to a chemical reaction between alkalis in the cement and the aggregate. This type of reaction, unknown at the time of construction, resulted in a significant loss in strength and durability, threatening the competence of the dam. In the early 1970's, storage was limited to 11.3 feet below full pool, which reduced the reservoir storage capacity to 1,125,000 acre-feet, about 66 percent of maximum design capacity.

By congressional act of December 28, 1973, the American Falls Reservoir District, acting as the constructing agency representing the storage spaceholders, was authorized to finance and contract for the replacement of American Falls Dam. The new dam, completed in 1978, replaced the concrete portion of the original structure and was built immediately downstream from the old dam. During reconstruction the reservoir area was surveyed and the total storage capacity is now 1,672,600 acre-feet (active 1,672,600 acre-feet).

Island Park Dam

The Upper Snake River Division of the project includes Island Park Dam, Cross Cut Canal and Diversion Dam, and Grassy Lake Dam.

Island Park Dam is located 38 miles north of Ashton, Idaho, on Henrys Fork. The dam is a zoned earthfill structure 91 feet high. Water stored at Island Park and Grassy Lake Reservoirs is used in Fremont and Madison Counties in northeastern Idaho, and Teton County in Wyoming.

Island Park Reservoir has a total storage capacity of 135,500 acre-feet (active 135,200 acre-feet) which includes 1 foot of surcharge that is filled on a recurring basis and is part of the allocated storage space.

Safety of Dams modifications were completed at Island Park Dam in the early 1980's. This consisted of replacing the deteriorated concrete in the spillway and excavation and replacement of liquefiable materials in the right abutment.

Cross Cut Diversion Dam and Canal

Water for irrigation in the Upper Snake River Division is diverted from Henrys Fork into the Cross Cut Canal by the Cross Cut Diversion Dam. The dam is a concrete weir which raises the water 10 feet above the streambed.

Cross Cut Canal extends southeast from the diversion dam 6.6 miles to the Teton River. The canal furnishes irrigation water for 112,000 acres of land in Fremont and Madison Counties.

Grassy Lake Dam

This 118-foot-high zoned earthfill storage dam is on Grassy Creek in Wyoming near the southern boundary of Yellowstone National Park. The reservoir has a total storage capacity of 15,500 acre-feet (active 15,200 acre-feet) which supplements the storage at Island Park. Storage at Grassy Lake Dam is augmented by a 0.7-mile canal from Cascade Creek which is fed from the Cascade Creek Diversion Dam, a rockfilled log crib weir that is 14 feet high.

Recent operation and maintenance modifications included the installation of a seepage blanket and

drain at the toe of the dam in 1996 and 1997. Due to the poor condition of the spillway chute concrete, the reservoir has been restricted 1 foot below full capacity for the summer resulting in a storage capacity of 14,800 acre-feet. During the winter there is a 5-foot restriction resulting in a storage capacity of 13,655 acre-feet. Corrective action work is expected to be completed in the year 2000 at which time the operating restrictions will be rescinded. Because of these restrictions, no spillway releases are allowed.

Milner-Gooding Canal

In 1928, construction began on the Gooding Division of the Minidoka Project. The work consisted primarily of building the Milner-Gooding Canal which heads at Milner Dam on the Snake River 12 miles west of Burley, Idaho. This 70-mile canal extends to the North Gooding Main Canal northwest of Shoshone, Idaho. The Milner-Gooding Canal and its connecting laterals furnish a full water supply for 20,000 acres and a supplemental supply for 78,667 acres. The initial capacity of the canal is 2,700 cubic feet per second.

North Side Pumping Division

The North Side Pumping Division consists of some 77,000 acres of irrigable public land that have been withdrawn from entry, of which some 62,000 acres (Unit B) are irrigated by pumping ground water from deep wells, and 15,000 acres (Unit A) by pumping from the Snake River. A portion of the storage space in American Falls Reservoir, augmented by storage from Palisades Reservoir, is used to supply irrigation water to Unit A lands.

Water for Unit A is pumped from the Snake River by a pumping plant located about 8 miles west of Burley. The plant capacity is 270 cubic feet per second and the dynamic head is 168 feet. The pumping plant delivers water to a 4.4-mile-long unlined canal that has the same capacity.

Seven groups of deep wells, totaling 177 wells from 12 to 24 inches in diameter, initially supplied water for Unit B. The average discharge of these wells was about 6.4 cubic feet per second. Currently, 174 wells are being used.

A distribution system consisting principally of unlined ditches distributes water in both units.

The A & B Irrigation District, (operating agency of the North Side Pumping Division) in conjunction with the Bureau of Reclamation, has undertaken a program to enhance wetlands. The purpose of this program is to address the quality of runoff, both natural and irrigation return flows, which are injected into the aquifer by drainage wells, and to provide wildlife habitat and to allow reuse. Wetlands naturally filter water as it flows through the vegetation and provides a mechanism for increased natural recharge. Several wetland projects are completed and others are on-going.

Non Federal Powerplants

During replacement of American Falls Dam, the Idaho Power Company relocated its powerplant to take advantage of head that was previously wasted between the reservoir surface and the powerplant forebay, increasing the generating capacity to 112,400 kilowatts.

In 1991, the Falls River Rural Electric Cooperative (FRREC) received a license from the Federal Regulatory Commission to construct and operate a small powerplant at Island Park Dam, located on the Henrys Fork of the Snake River. Generation from the 2-unit, 4,800 kilowatt plant began in 1994.

FRREC also received approval in 1995 to modify the spillway of Island Park Dam with an adjustable lip to allow water that was previously spilled during irrigation surcharge to be passed through the powerplant to provide additional power generation. This modification, which is a 1-

foot-high inflatable rubber collar, was completed in 1995. When Island Park Reservoir elevation is above 6302.0 feet, the rubber collar can be inflated or deflated to control spill. Operation of the rubber collar also improves water temperature conditions downstream in Henrys Fork, which benefits its rainbow trout fishery.

Operating agencies

The Gravity Division has been operated by the Minidoka Irrigation District since January 1, 1917; the South Side Pumping Division by the Burley Irrigation District since April 1, 1926; Gooding Division by American Falls Reservoir District No. 2 since May 1, 1933; and the Upper Snake River Division by Fremont-Madison Irrigation District since November 15, 1940. The North Side Pumping Division, last to be developed, was turned over to the A&B Irrigation District for operation on March 1, 1966. All storage and power facilities are operated by the Bureau of Reclamation.

Development

History

In 1904, the lower Minidoka Project area around the present cities of Burley and Rupert was a nearly uninhabited sagebrush desert with only a few scattered ranches. After construction of the initial phases of the project brought water to the land, giving opportunity for expansion, it became a prosperous, highly developed farm area. By 1919, 2,208 farms were in operation, there were 6 towns, and the total population was about 17,000.

Investigations

Early investigations of irrigation possibilities in Idaho were made under the direction of the Geological Survey in 1889-1890. These surveys included a preliminary examination of the Minidoka Project, when survey lines were run from 15 to 35 miles westward on both sides of the Snake River from the Minidoka Dam site. Additional surveys were made in 1895. Private organizations became interested in developing the area at various times after 1887.

At the time of passage of the Reclamation Act of June 1902, considerable data relative to the area were available for use by the State Engineer, who was responsible for cooperating with the Reclamation Service in Idaho. During 1902, information obtained about the storage potential in the headwaters of the Snake River indicated that suitable capacities could be developed at reasonable cost. On November 17, 1902, the Secretary of the Interior withdrew from public entry a large body of land embracing the proposed irrigable area of the Minidoka tract, rendering it subject to filing under the terms of the Reclamation Act.

Authorization

The Minidoka Project was authorized by the Secretary of the Interior on April 23, 1904, under the 1902 Reclamation Act. Investigation and construction funds for the Gravity Extension Unit (Gooding Division) were provided by the Interior Department Appropriation Act, 1927, the Act of January 12, 1927 (44 Stat. 934) and the Secretary's finding of feasibility July 2, 1928, and was approved by the President on July 3, 1928 pursuant to section 4 of the Act of June 25, 1910 (36 Stat. 836) and subsection B of section 4 of the Act of December 5, 1924 (43 Stat. 702). The Upper Snake River Storage Project was authorized by a finding of feasibility by the Secretary of Interior on September 6, 1935, and approved by the President on September 20, 1935, pursuant to the foregoing acts. The North Side Pumping Division was authorized for construction by the Act of September 30, 1950 (64 Stat. 1083, Public Law 81-864). Replacement of American Falls Dam was authorized by Act of December 28, 1973 (87 Stat. 904, Public Law 93-206). Subsequently however, the Act of September 25, 1979 (93 Stat. 437, Public Law 96-69) authorized that

unobligated appropriations made for the payment of Teton Dam failure claims of up to \$19 million could be used to pay some of the American Falls Dam replacement costs and would be nonreimbursable pursuant to the Reclamation Safety of Dams Act.

Transfer of facilities and rights-of-way of the South Side Pumping Division to the Burley Irrigation District was authorized by the Congress on January 27, 1998 (112 Stat. 3219-3221; Public Law 105-351).

The original authorized purpose of each storage facility of the Minidoka Project is shown below:

Storage Facility	Authorized Purpose
Minidoka Dam	Irrigation and power
Jackson Lake Dam	Irrigation
American Falls Dam	Irrigation and power
Island Park Dam	Irrigation
Grassy Lake Dam	Irrigation

The Act of September 30, 1950, authorizing the Palisades Project, authorizes the upper Snake River reservoir system to be operated for flood control.

Construction

Construction activities on the project began in 1904 at Minidoka Dam which, with its associated diversions and canals, formed the nucleus of the present development. Headwaters storage began with the erection of the temporary Jackson Lake Dam in 1905.

Later major developments were the enlargement of Jackson Lake in 1911 and 1916, the original construction of American Falls Dam in 1925-1927, construction of Grassy Lake and Island Park Dams in 1935-1939, and American Falls Replacement Dam in 1976-1978.

The first power came from the Minidoka Powerplant in 1909; the last generator was installed in 1942.

Construction on the last project land area to be developed, North Side Pumping Division, began in 1948 and was completed in 1959.

The Palisades Reservoir, while not a part of the Minidoka Project, contributes greatly to the project's success by storing excess flows for later release and by increasing the available power supply.

Benefits

Irrigation

There are over a million irrigated acres in the arid Snake River valley of southern Idaho. Much of the famed Idaho potato crop is grown in this valley, and sugar beets, dry beans, sweet corn, field grains, alfalfa hay, and irrigated pasture diversify the land use. Cattle raising and dairying are important industries.

Recreation and Fish and Wildlife

A&B 40

The five project reservoirs provide about 36,000 acres of land and about 102,000 acres of water

surface, with 319 miles of shoreline for recreational use. American Falls Reservoir is the largest with a total land and water area of over 68,000 acres. The Bureau of Reclamation administers recreation at the reservoir and has leased out three areas for recreation development. The reservoir offers fishing for both salmonoid and spiny ray species, and millions of waterfowl use the area annually. Jackson Lake is located within Grand Teton National Park and recreation is administered by the National Park Service. With the Teton Mountains as a background, excellent facilities, and Yellowstone National Park only a few miles away, the reservoir attracts many vacationers.

The Minidoka National Wildlife Refuge, consisting of a major portion of the Lake Walcott area, is administered by the Fish and Wildlife Service. Part of the area open to public hunting, and fishing is provided in the reservoir. Several million waterfowl use the area each year. Both Island Park Reservoir and Grassy Lake are administered by the Forest Service. Many recreation facilities have been constructed at Island Park Reservoir. There is good fishing for rainbow trout and coho and kokanee salmon at the reservoir, and it is used by large numbers of waterfowl during their migrations. Snow-mobiling is a very popular activity in this area. Grassy Lake is a small reservoir located just outside the southern boundary of Yellowstone National Park. Visitation is light but there is some trout fishing.

Since 1993, in response to provisions in Biological Opinions for listed anadromous fish, the Bureau of Reclamation has provided 427,000 acre-feet of water for flow augmentation in the lower Snake and Columbia Rivers. Water has been provided from Bureau of Reclamation uncontracted reservoir space and natural flow rights the Bureau of Reclamation has acquired from willing sellers, and rental of water from Idaho rental pools (District 1--Upper Snake River, District 63--Boise River, and District 65--Payette River).

River recreation uses are an extremely important component of the recreation mix, providing opportunities for whitewater rafting and kayaking, floating, canoeing, fishing, picnicking, and other uses. Various reaches of river from Jackson Lake to below American Falls are regionally and nationally recognized for exceptional whitewater and blue ribbon trout fishing, and other water borne recreation activities. These activities are incidental to authorized project purposes.

For specific information about any of these recreation sites, click on the name below.

[American Falls Reservoir](#)
[Grand Teton National Park](#)
[Grassy Lake](#)
[Island Park Reservoir](#)
[Jackson Lake](#)
[Lake Walcott](#)
[Milner Historic/Recreation Area](#)
[Minidoka National Wildlife Refuge](#)
[Palisades Reservoir](#)
[Yellowstone National Park](#)

Flood Control

The reservoirs of the Minidoka Project were designed originally to provide for distribution of spring runoff through the irrigation season, rather than to provide for carryover storage for years of low streamflows. The addition of Palisades Reservoir provides not only holdover storage, but also an increased measure of flood control over the river. Sufficient vacant space is maintained in Jackson Lake and Palisades Reservoir on a forecast basis to prevent flows on the Snake River near Heise from exceeding 20,000 cubic feet per second. The flood control operation is carried out under formal agreement with the Corps of Engineers.

A&B 41

Dam and reservoir	Accumulated actual	Capacity assigned to
--------------------------	---------------------------	-----------------------------

	benefits 1950 - 1998	flood control function
	(\$1,000)	(acre-feet)
Minidoka - Palisades	576,673	
Jackson Lake		847,000
American Falls		601,000
Palisades		1,200,000

Hydroelectric Power

The Minidoka Powerplant serves large irrigation pumping requirements on and near the Minidoka Project in southern Idaho. Power not needed for Bureau of Reclamation project purposes is marketed in the Federal Southern Idaho Power System administered by the Bonneville Power Administration.

[Dams](#) | [Projects](#) | [Powerplants](#) | [Contact Us](#) | [Maps](#) | [Glossary](#) | [FAQ's](#) | [Links](#)
[Privacy Policy](#) | [Disclaimer](#) | [Accessibility](#) | [FOIA](#) | [Quality of Information](#) | [FAQ](#) | [Notices](#)
[DOI](#) | [Recreation.gov](#) | [USA.gov](#)