The Bonneville Lock and Dam **Fact Sheet**

Bonneville Dam is located 145 river miles from the mouth of the Columbia River and approximately 40 miles east of Portland, Oregon. It was named for Captain Benjamin Bonneville, a soldier, trader, and explorer. The following lists technical data about Bonneville Lock and Dam to help you compare it to other facilities.

Captain Benjamin Bonneville
1796 - 1878

Location Map
Bonneville Dam

Comparing The Powerhouses

	First Powerhouse	Second Powerhouse
Construction:	1933 - 1938 (Phase I) 1938 - 1942 (Phase II) 1940 - 1943 (Phase III)	1972 - 1974 (Preparation) 1974 - 1982
Turbine Generators:	1 = 4,000 KW (1938) 2 = 54,000 KW (Upgraded 2000's) 8 = 60,000 KW (Upgraded 2000's)	2 = 13,500 KW 8 = 76,000 KW
Turbine/ Generator Speed:	75.0 rpm	69.2 rpm
Total Rated Capacity:	592,000 KW	635,000 KW
Generator Voltage:	13,800 volts	13,800 volts
Transmission Voltage:	115,000 volts & 230,000 volts	230,000 volts
Average Turbine Water Discharge:	13,000 cubic feet/second** 96,667 gallons/second**	16,000 cubic feet/second 230,649 gallons/second
Cost of Each Facility:	$88.4 million[1]	$664.0 million[2]

Total Generation Capacity of Both Facilities: 1,227 Megawatts or 1,227,000 Kilowatts

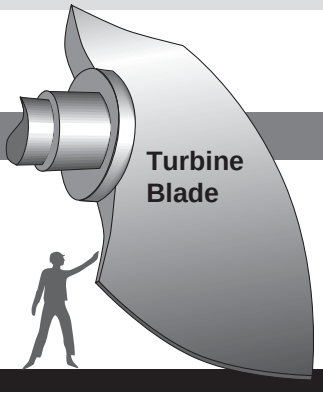
** This is enough water to fill an average, three bedroom home in one second.

1 Included Powerhouse I, fish ladders, spillway, and Navigation Lock construction – 1933-1943.

2 Included Powerhouse II, visitor complex, and fish facilities construction – 1972-1982.

Turbine Tidbits

We use a special type of turbine called a Kaplan Adjustable Turbine. Many dams use a paddle wheel type of turbine. Ours looks like a propeller with adjustable pitch blades.



US Army Corps of Engineers ®
Portland District

The Spillway Dam

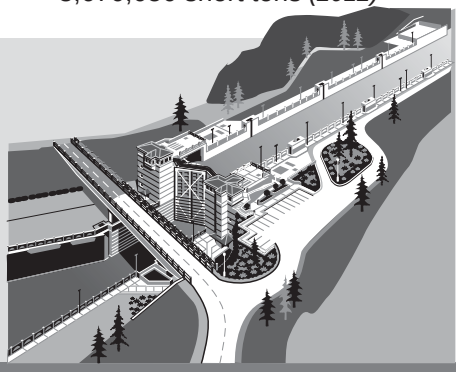
Overall Length:		449.0 meters	1,450 feet
Width of Gravity Section:		41.0 meters	132 feet
Height Above Lowest Bedrock:		61.0 meters	197 feet
Gates	**width**	18 @ 15.50 meters	50 feet
	height	18 @ 18.25 meters	60 feet
Design Capacity:		1,600,000 cubic feet per second	
Pool Elevation:	**average**	23.3 m MSL*	76.5 feet MSL
	minimum	21.3 m MSL	70.0 feet MSL
	maximum	25.0 m MSL	82.5 feet MSL

MSL* = Mean Sea Level = meters and feet above mean sea level

Navigation Lock

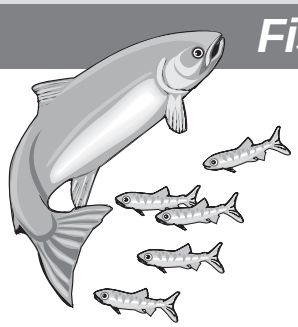
		1938 Lock	1993 Lock
Fill/Empty Time:		20 - 25 minutes to fill 15 - 20 minutes to empty	9 - 13 minutes to fill or empty
Width/Length:		23.18m x 152.5m *(76 feet x 500 feet)*	26.23m x 206.8m *(86 feet x 675 feet)*
Lift:	**average**	18.3m (60 feet)	18.3m (60 feet)
	minimum	9.15m (30 feet)	9.15m (30 feet)
	maximum	21.35m (70 feet)	21.35m (70 feet)
Depth Over Sill:		7.38m *(24.2 feet)*	5.8m *(19 feet)*
Total Lockages:		2,854 *(1992)*	2,469 *(2012)*
Total Tonnage:		8,426,841 metric tons *(1992)* 9,289,000 short tons *(1992)*	7,865,337 metric tons *(2012)* 8,670,050 short tons *(2012)*

The 1938 lock replaced the Cascades Canal and Lock located a few miles upstream. The 1993 lock replaced the 1938 lock. It is comparable in size to the seven other locks on the 465 mile Columbia /Snake River Inland Waterway.



Fish Passage

Elevation gained up the fish ladder.....18.3 meters (60 feet)



The fish ladders are necessary so that adult fish can get past Bonneville Dam to return to their spawning grounds.

The best months to see fish climbing the fish ladders are:

Chinook Salmon ..... *September*
Coho Salmon ..... *September*
Sockeye Salmon ..... *June*
Steelhead Trout ..... *August*
American Shad ..... *June*
Lamprey ..... *June*