BUREAU OF RECLAMATION

Summary of Operations for Water Year 2021 for North Platte River Basin Reservoirs

Seminoe, Kortes, Pathfinder, Alcova, Gray Reef, Glendo, Guernsey, and Inland Lakes

Annual Operating Plan

Guernsey Reservoir Spillway, Wyoming

Wyoming Area Office
Missouri Basin Region

U.S. Department of the Interior

December 2021

Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Preface

This report documents the operation of all Bureau of Reclamation (Reclamation) facilities in the North Platte River Drainage Basin above and including Guernsey Dam and the four Inland Lakes near Scottsbluff, Nebraska. This area of the North Platte River drainage basin is simply referred to in this report as the Basin.

References to average in this document will refer to the average of the historical record for the years 1992-2021. In each coming year this period will be advanced by one year to maintain a running 30-year average.

Introduction

The System of dams, reservoirs, and powerplants on the North Platte River (referred to as the "System" in this text) is monitored and in most cases operated and managed from the Wyoming Area Office in Mills, Wyoming. The operation and management of the System is aided by the use of a Programmable Master Supervisory Control, computerized accounting processes, an extensive network of Hydromet stations, control crest measurement weirs at gaging stations, snow telemetry (SNOTEL) stations, and a snowmelt runoff forecasting procedure used by the Water Management Branch. The System consists of a number of individual water resource projects that were planned and constructed by Reclamation. The individual projects and features are operated as an integrated system to achieve efficiencies that increase multipurpose benefits. The drainage basin which affects the System covers an area from northern Colorado to southeastern Wyoming, encompassing 16,224 square miles. Storage reservoirs in the System include four off stream reservoirs known as the Inland Lakes in western Nebraska as shown in Figure 21.

Approximately 70 percent to 80 percent of the annual North Platte River streamflow above Seminoe Dam occurs from snowmelt runoff during the April-July period. Primary water demand is irrigation, and the period of delivery of irrigation water normally extends from May through September. Figure 20 represents historical watershed runoff above Pathfinder Reservoir from 1906 through 2021. The System furnishes irrigation water to over 440,000 acres of land in Wyoming and Nebraska.

The System includes the Kendrick Project (formerly Casper-Alcova) in Wyoming; with major features of the project being Seminoe Dam and Powerplant, Alcova Dam and Powerplant, and Casper Canal. Kendrick Project lands lie on the northwest side of the North Platte River between Alcova Reservoir and Casper, Wyoming. The North Platte Project in Wyoming and Nebraska consists of Pathfinder Dam and Reservoir; Guernsey Dam, Reservoir and Powerplant; Whalen Dam; Northport, Fort Laramie, and Interstate canals; and four off stream inland reservoirs on the Interstate Canal. The Kortes Unit of the Pick-Sloan Missouri Basin Program (PS-MBP) consists of Kortes Dam, Reservoir, and Powerplant, in a narrow gorge of the North Platte River, 2 miles below Seminoe Dam. The Glendo Unit of the PS-MBP is a multiple-purpose natural resource development. It consists of Glendo Dam, Reservoir, and Powerplant; Fremont Canyon Powerplant; and Gray Reef Dam and Reservoir which is a re-regulating reservoir immediately downstream of Alcova Dam.

Major contributing rivers of the water supply in the System are the North Platte River in Colorado, the Medicine Bow River, and the Sweetwater River in Wyoming.

The System has seven main stem reservoirs, six of which have powerplants with generating capacities totaling 239,200 kilowatts (kw). Table 12 depicts a breakdown of generating units and their capacity for each North Platte Powerplant. Table 1 below depicts North Platte River Reservoir data.

The Department of Energy, by Executive Order dated October 1, 1977, assumed the responsibility of marketing power from Federal resources and operation and maintenance of federal transmission facilities.

Western Area Power Administration (Western) of the Department of Energy, headquartered in Lakewood, Colorado, now operates and maintains the nearly 3,500 miles of interconnected electrical transmission lines within the System. The power generating facilities are also interconnected with other federal, public and private power facilities. Power from Reclamation Powerplants is marketed by Western.

Table 1: North Platte River Reservoir Data

Reservoir (Date Completed)	Dead Storage [1] Acre-feet (AF)	Active Storage [2] (AF)	Total Storage (AF)	Minimum Storage (AF)	Minimum Elevation (feet)
Seminoe (1939)	556	1,016,717	1,017,273	31,670 [4]	6,239.00 [4]
Kortes (1951)	151	4,588	4,739	1,666 [4]	6,092.00 [4]
Pathfinder (1909)	7	1,069,993	1,070,000	31,405 [4]	5,746.00 [4]
Alcova (1938)	91	184,314	184,405	137,610 [5]	5,479.50 [5]
Gray Reef (1961)	56	1,744	1,800	56 [6]	5,312.00 [6]
Glendo (1958)	7,010	756,029	763,039 [3]	51,573	4,570.00 [7]
Guernsey (1927)	0	45,612	45,612	0	4,370.00 [8]
Total	**7,871**	**3,078,997**	**3,086,868**	**253,980**	

1 - Storage capacity below elevation of lowest outlet
2 - Total storage minus dead storage
3 - Top of Conservation capacity 492,022 AF (Elevation 4,635.00 ft) with an additional 271,017 AF allocated to Flood Control (elevation 4,653.00 ft)
4 - Minimum water surface elevation and capacity required for power generation this level is the top of inactive capacity
5 - Content and minimum elevation required for power generation, however, water cannot be delivered to Casper Canal when reservoir level is below 5,487.00 ft (153,802 AF), the elevation of the Casper Canal Gate sill.
6 - Top of dead capacity – spillway crest
7 - Minimum water surface elevation for power generation
8 - Elevation of the North Spillway Crest

System Planning and Control

The North Platte River storage, power generation, and water delivery facilities are operated for irrigation, hydroelectric power production, municipal, and industrial water supply. The facilities provide year-round flows in the river below each North Platte Dam except for Guernsey Dam. The facilities also provide flood control, recreation, fish and wildlife preservation. Each project of the System must be operated under the purposes for which it was authorized and constructed. The objective of an integrated system is to obtain optimum benefits from the individual projects.

The System's integrated operation is planned and coordinated by Reclamation's Wyoming Area Office in Mills, Wyoming. This office collects and analyzes information daily and makes the decisions necessary for successful operation of the System. The water management function involves coordination between Reclamation, the Department of Energy, and many other local, state, and Federal agencies. When water levels rise into the exclusive flood control pool at Glendo Reservoir, the flood control operation of Glendo Dam is directed by the U.S. Army Corps of Engineers, Omaha District in Omaha, Nebraska.

Experience has proven that optimum utilization of the available water resources in the System can be achieved only through careful budgeting of the anticipated water supply. The technical end product of this budgeting process is an Annual Operating Plan (AOP).

The System is operated on a water year basis (October 1 through September 30). Early in the water year an AOP is prepared, reviewed, and presented to the public. The AOP consists of three operation studies using reasonable minimum, reasonable maximum, and most probable inflow conditions determined from statistical analysis of historical inflow conditions. The AOP, as developed and reflected in the three operation studies, provides the flexibility to adjust operations as conditions change during the water year. Reclamation makes use of computer programs to revise and adjust the operating plan each month to reflect changing conditions. A computerized process of forecasting the anticipated water supply also aids the revision process during the months of February, March, April, and May. Figure 1 depicts North Platte Reservoirs total storage end of September content for water years 1912 through 2021. Table 2 depicts a summary of reservoir storage content for water year (WY) 2021 (end of month). Table 9 depicts the actual reservoir operations for WY 2021.

Table 2: Summary of Reservoir Storage Content for Water Year 2021 (End of Month). Units of Acre-Feet.

	October	November	December	January	February	March	April	May	June	July	August	September
Seminoe Reservoir												
Storage	635831	625734	595174	577857	568658	576572	535984	501749	465883	385676	349332	324953
Rank[1]	16	16	17	16	16	16	16	20	26	26	26	26
Pathfinder Reservoir												
Storage	660508	653823	619445	614022	618539	627813	683860	805799	791271	711107	633035	610131
Rank[1]	14	15	16	16	16	16	14	14	14	13	16	16
Alcova Reservoir[3]												
Storage	98501	98432	143964	153780	156854	157713	179668	180034	180865	180816	180645	180620
Rank[1]	30	30	30	30	11	16	20	19	10	10	16	7
Glendo Reservoir												
Storage	233851	275063	317118	352234	386173	430776	468044	422368	369918	261820	124955	138438
Rank[1]	4	5	5	5	6	7	12	24	29	25	20	9
Guernsey Reservoir												
Storage	7757	10291	12817	15574	18089	21780	28517	27867	28319	28517	7559	0
Rank[1]	9	12	12	12	11	10	12	25	20	11	30	30
Total System[2]												
Storage	1642942	1669814	1694993	1719926	1754789	1821117	1902546	1944269	1842722	1574412	1301853	1260470
Rank[1]	16	16	15	16	16	16	16	16	19	20	20	18

1 – Storage ranking from 1 (highest) to 30 (lowest) from the 30 year period 1992-2021

2 - Total North Platte system includes storage in Seminoe, Kortes, Pathfinder, Alcova, Gray Reef, Glendo and Guernsey Reservoirs

3 - Alcova Reservoir is normally maintained within either a winter operating range (between contents of 153,802 AF to 158,302 AF) or a summer operating range (between contents 177,070 AF to 181,943 AF)

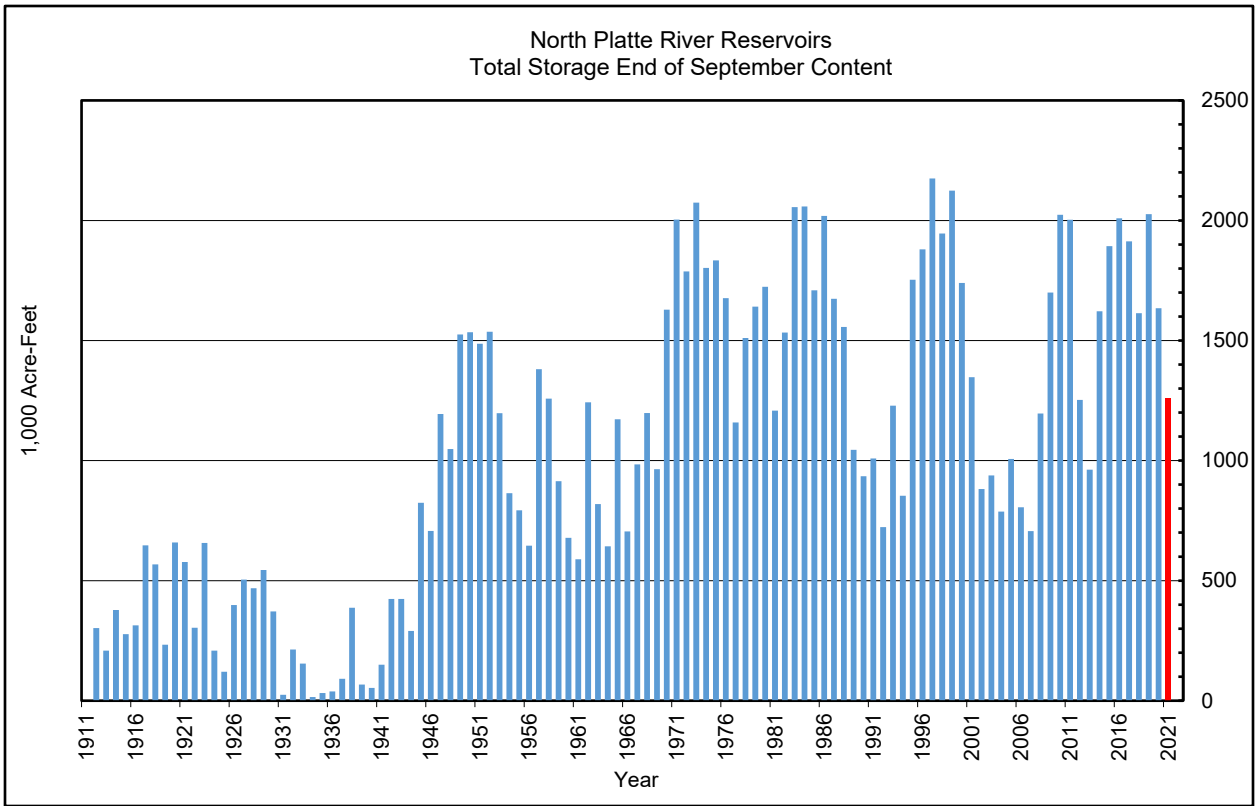

Figure 1: North Platte River Reservoirs Total Storage End of September Content (1912-2021).

System Operations Water Year 2021

Seminoe Reservoir Inflow

Seminoe Reservoir inflows were below the 30-year average for all of the 2021 water year. A total of 519,460 acre-feet (AF) or 54.5 percent of the 30-year average entered the system above Seminoe Reservoir during the water year. The monthly inflows ranged from a high of 90 percent of average in January to a low of 38 percent in June 2021. The actual April through July inflow totaled 339,190 AF, which was 48 percent of the 30-year average of 709,260 AF. The Seminoe computed inflow peaked for the water year on June 8, 2021, at 3,378 cubic feet per second (cfs). Figure 2 depicts a comparison of average, WY 2020 and WY 2021 monthly inflows.

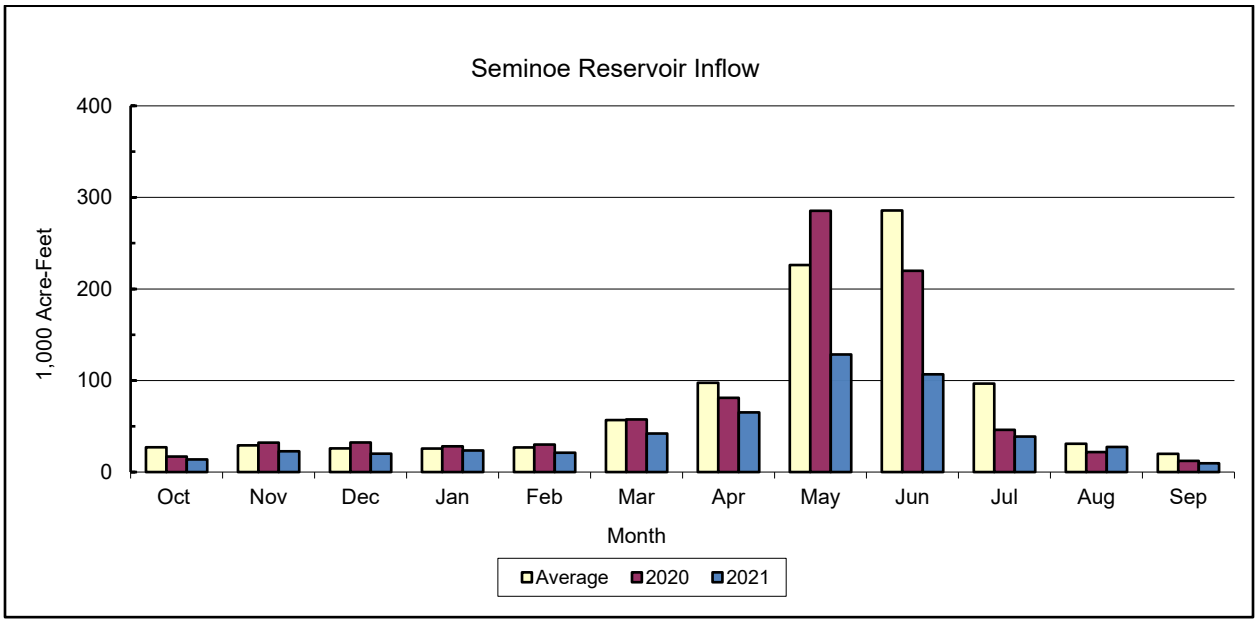

Figure 2: Seminoe Reservoir Inflow.

Seminoe Reservoir Storage and Releases

Seminoe Dam and Reservoir on the North Platte River is the main storage facility for the Kendrick Project. Construction of the dam was completed in 1939, providing a storage capacity of 1,017,273 AF. The powerplant contains three electrical generating units with a total capacity of 42 megawatts (MW) at a full release capability of about 4,050 cfs. The spillway consists of a concrete-lined tunnel through the right abutment controlled by three fixed-wheel gates with a release capability of close to 48,000 cfs. Two 60-inch jet flow valves provide a low level river outlet with a flow capacity of 3,420 cfs.

At the start of WY 2021, Seminoe Reservoir had a storage content of 658,563 AF, which was 108 percent of average and 65 percent of capacity. Seminoe Reservoir was gradually lowered over the

course of the 2021 water year to facilitate a full travel gate test which was performed in December of 2021. At the end of WY 2021, Seminoe Reservoir storage content was 324,953 AF, which was 53 percent of average and 32 percent of capacity. See Figure 3 for a comparison of average, WY 2020 and WY 2021 monthly storage.

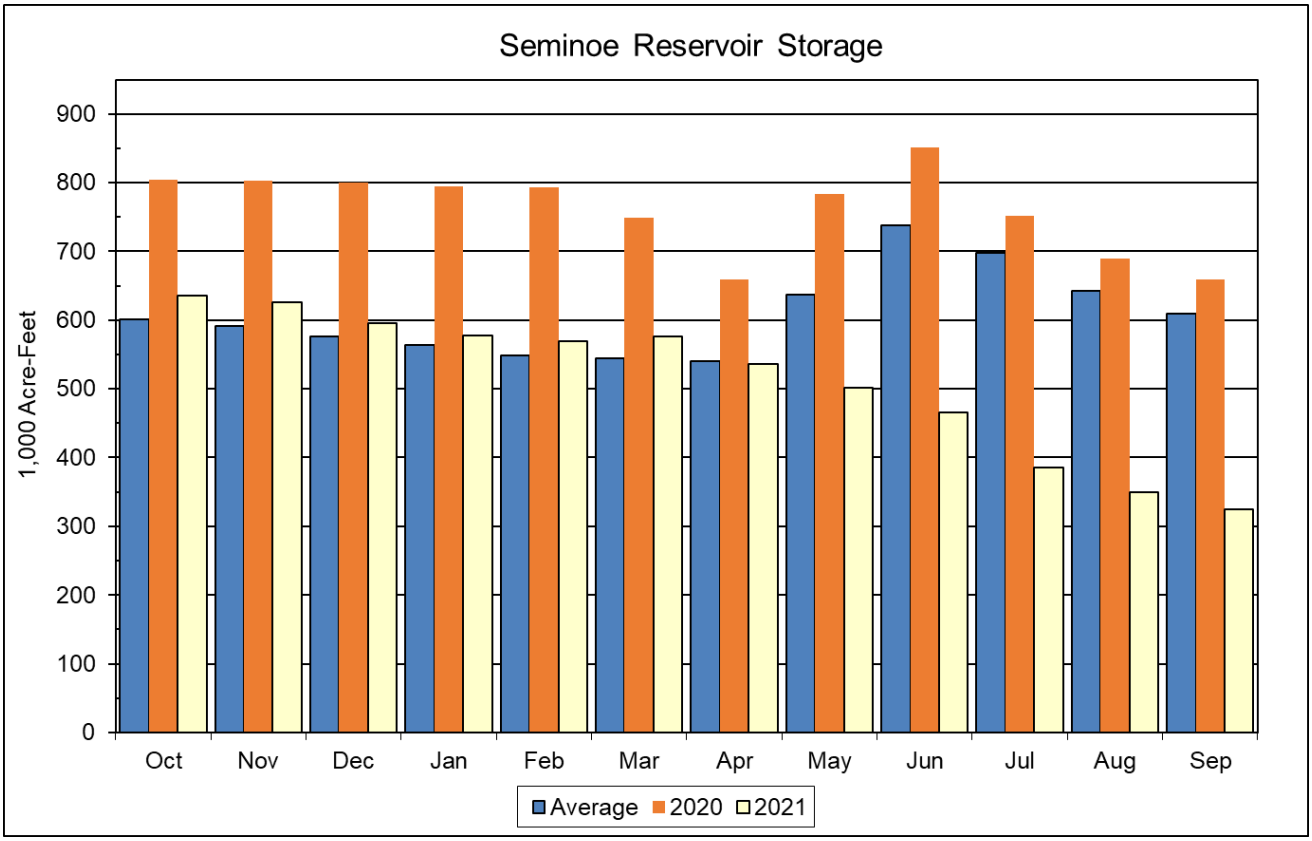

Figure 3: Seminoe Reservoir Storage.

The table below shows the average monthly release (in cfs) for WY 2021 as well as the yearly maximum release.

Seminoe Release	Average Release (cfs)	WY 2021 Monthly Release (cfs)	WY 2021 Maximum Release (cfs)
October	591	541	555
November	632	539	571
December	641	817	1208
January	632	627	1199

February	716	538	547
March	971	538	566
April	1665	1727	2021
May	2093	2605	2638
June	2953	2337	2646 (June 15, 2021)
July	2111	1889	1924
August	1307	996	1914
September	815	543	554

Table 3: Seminoe Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive and Dead	6,239.00	31,670	31,670
Top of Active Conservation	6,357.00	1,017,273	985,603
Crest of Dam (without Camber)	6,361.00		

Table 4: Seminoe Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	6336.14	658,563	01-Oct-20 [2]
End of water year	6306.03	324,953	30-Sep-21
Annual Low	6306.03	324,953	30-Sep-21
Historic Low [1]	6,253.30	56,390	20-Apr-61
Annual High	6336.14	658,563	01-Oct-20 [2]
Historic High [1]	6,359.29	1,073,050	20-Jun-49

1 - The daily records for this table are only available from water year 1946.
2 - Represents 0001 hours on October 1

Table 5: Seminoe Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow [1]	Date	Outflow	Date
Annual Total (AF)	519,463	10/1/20 – 9/30/21	828,682	10/1/20 – 9/30/21
Daily Peak (CFS)[2]	3,378	8-Jun-21	2,646	15-Jun-21
Daily Minimum (CFS)[2]	1	31-Aug-21	520	23-Nov-20

1 - Inflows are a computed number.
2 - Daily peak and minimum are releases to the river.

Table 6: Monthly Computed Inflows, Outflows, and Contents for Seminoe Reservoir, Water Year 2021.

Month	Inflow (KAF)	Inflow percent of Average [1]	Outflow (KAF)	Outflow percent of Average [1]	Content (KAF) [2]	Content percent of Average [1, 2]
October	13.7	50.2	33.2	92	635.8	106
November	22.7	77.4	32.1	85	625.7	106
December	20.1	77.3	50.2	127	595.2	103
January	23.5	90.1	38.6	99	577.9	103
February	21.1	77.8	29.9	73	568.7	104
March	42.2	73.7	33.1	55	576.6	106
April	65.2	66.2	102.7	104	536.0	99
May	128.4	55.9	160.2	124	501.7	79
June	106.8	37.6	139.1	79	465.9	63
July	38.8	39.9	116.2	89	385.7	55
August	27.4	87.5	61.2	76	349.3	54
September	9.6	47.9	32.3	67	325.0	53
Annual	**519.5**	**54.5**	**828.69**	**90.5**		

1 - The 30-year average is the period (1992-2021)
2 - End of month

Kortes Reservoir Storage and Releases

Completed in 1951, Kortes Dam, Reservoir, and Powerplant of the Kortes Unit (Pick-Sloan Missouri Basin Project) are located about 2 miles below Seminoe Dam. It was the first unit initiated by the Bureau of Reclamation under the Missouri River Basin Project. Kortes Reservoir provides a total storage capacity of 4,739 AF at elevation 6,142.0 feet, the level of the spillway crest. Kortes Powerplant has three electrical generating units with a total capacity of 40 MW and a release capability of approximately 2,700 cfs. Water released from Seminoe Dam to Pathfinder Reservoir passes through the Kortes turbines to generate power. Maximum benefits are obtained when Kortes Reservoir remains full and the power releases are coordinated with those from Seminoe Powerplant to maintain a full reservoir.

The spillway on the right abutment consists of an uncontrolled crest with a concrete-lined tunnel and has a capacity of 50,000 cfs.

Senate Bill 2553 which was passed in the ninetieth Congress authorized the modification of the operation of Kortes Dam and Powerplant to provide a minimum streamflow of 500 cfs in the North Platte River between Kortes Reservoir and the normal headwaters of Pathfinder Reservoir. The

minimum flow permits maintenance of a fishery in a stretch of the North Platte River commonly referred to as the "Miracle Mile".

Kortes releases averaged approximately 540 cfs in October 2020 and increased to approximately 1,200 cfs in December and early January for black start testing before returning to ~540 cfs until early April 2021 when releases were increased to 2,000 cfs. Releases increased again, to 2,600 cfs in early May where they remained until being decreased in June. Peak single day release was 2,623 cfs on May 10. Releases were decreased to 1,900 cfs on June 21 and decreased again to 1,000 cfs on August 6. Kortes Releases reverted to winter flow rates of ~530 cfs on August 25 and remained there through the conclusion of the 2021 Water Year.

Gains to the North Platte River from Kortes Dam to Pathfinder Dam

River gains between Kortes and Pathfinder Dams were well below average for WY 2021. The river gains between Kortes and Pathfinder Dams ranged from 70 percent of average in February 2021 to negative gains four times normal in July 2021. The total river gains were negative 22,890 AF. Figure 4 depicts a comparison of average, WY 2020 and WY 2021 monthly river gains.

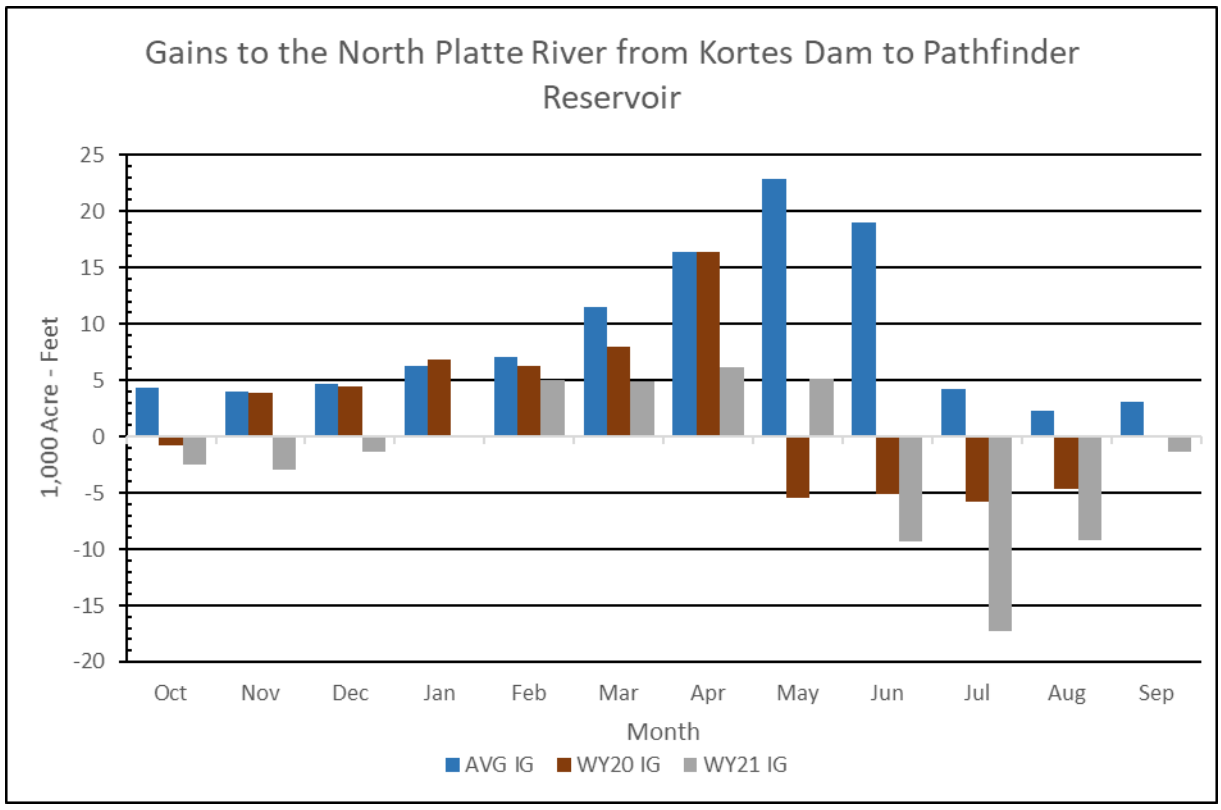

Figure 4: Gains to the North Platte River between Kortes and Pathfinder Dams.

Pathfinder Reservoir Storage and Releases

Pathfinder Dam and Reservoir, a major storage facility of the North Platte Project, has a total capacity of 1,070,000 AF at elevation 5,852.49 feet. Construction of the dam was completed in 1909. Operationally, this structure is a bottleneck in the System with its maximum non-spillway release capability of approximately 6,000 cfs. The rated capacity of the left abutment outlet works through the two 60-inch jet flow gates is approximately 3,000 cfs at elevation 5,852.49 feet. The flow capacity range of the 30-inch jet flow gate is from approximately 50 to 450 cfs. Depending on the elevation of the reservoir, as much as 3,080 cfs can be released through the Fremont Canyon Power conduit and discharged from the Fremont Canyon turbines at the Powerplant 3 miles downstream. Reconditioning of Unit 2 of the Fremont Canyon Powerplant was completed in August 2012. Reconditioning of Unit 1 was completed late July 2013. The 33.4 MW nameplate rating of the two units has not changed. Total rating of these two units is 66.8 MW.

Reconstruction of the Pathfinder spillway was completed in 2012. The spillway crest was raised approximately 2.4 feet to elevation 5,852.49 feet. The crest of the uncontrolled spillway on the left abutment of the dam was reconfigured from a flat-crested natural rock weir to an ogee-crested concrete weir. A spill occurs any time the reservoir water surface exceeds 5,852.49 feet. The calculated discharge capacity of the spillway is 32,449 cfs at reservoir elevation 5,858.10 feet.

At the start of WY 2021, storage in Pathfinder Reservoir was 650,503 AF, which was 124 percent of average and 62 percent of capacity. Although WY 2021 was a low inflow year, Pathfinder storage was above the 30-year average because Seminoe was lowered to conduct the full travel gate test. The maximum Pathfinder Reservoir content for the water year peaked on June 14, 2021, at 830,075 AF which is 78 percent of capacity. The water year ended with 610,130 AF of water in storage in Pathfinder Reservoir, which was 114 percent of average and 57 percent of capacity. At the request of the Wyoming Game and Fish Department a year-round flow of 75 cfs was provided to the river below Pathfinder Dam. The 75 cfs minimum flow is provided through the 30-inch jet-flow valve except when the 60-inch jet-flow valve is needed to supplement Fremont Canyon releases to make required irrigation deliveries. The river below Pathfinder Dam reached a maximum flow of 2,297 cfs on Dec 22, 2020. Table 4 depicts a summary of Pathfinder Reservoir storage for average, WY2020 and WY 2021.

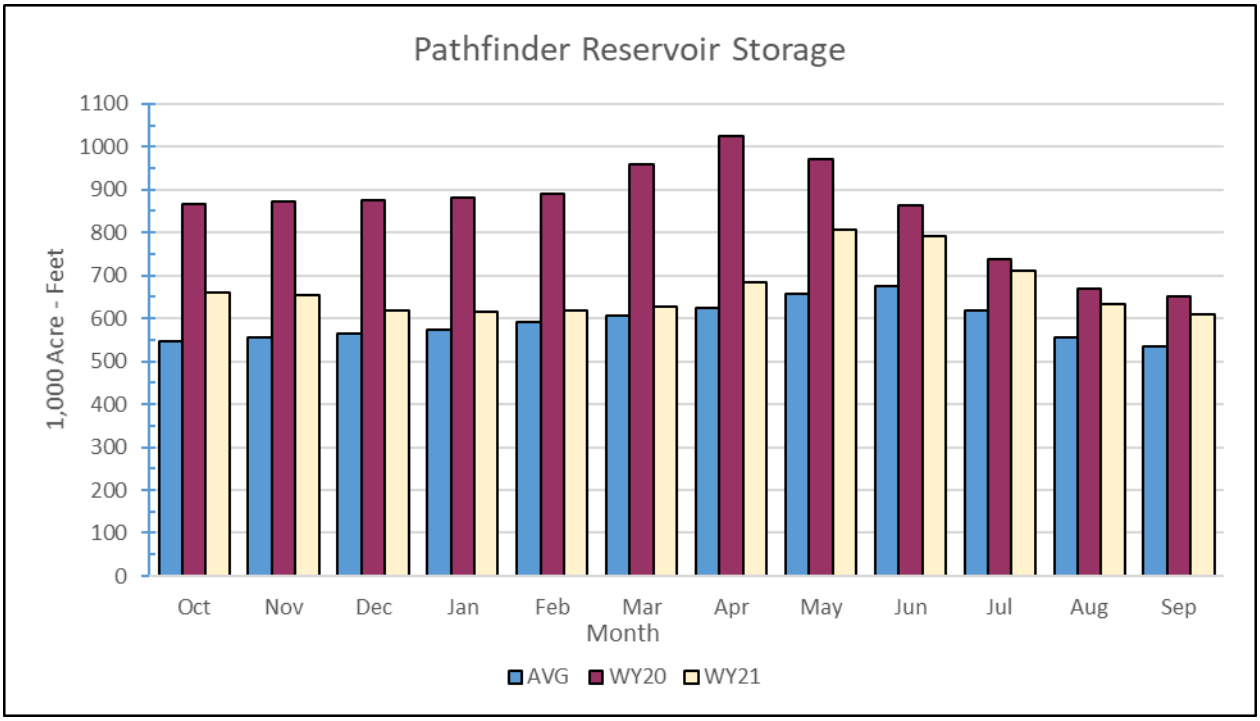

Figure 5: Pathfinder Monthly Reservoir Storage.

Table 7: Pathfinder Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	5,746.00	31,405	31,405
Top of Active Conservation	5,852.49	1,070,000	1,038,595
Crest of Dam (without Camber)	5,858.10		

Table 8: Pathfinder Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	5,830.77	650,503	Oct 1, 2020[3]
End of water year	5828.14	610,131	Sept. 30, 2021
Annual Low	5828.14	610,131	Sept. 30, 2021
Historic Low [2, 3]	5,690.00	0	Sept. 9, 1958
Annual High	5,841.05	830,075	June 14, 2021
Historic High [1]	5,853.49	1,093,275	June 2, 2016

1 - Daily records for this table are only available from water year 1946
2 - From September 1958 through January 1959, Pathfinder Reservoir was drained for construction of Fremont Canyon tunnel.
3 - Represents 0001 hours on October 1.

Table 9: Pathfinder Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow	Date	Outflow[1]	Date
Annual Total (AF)	805612.12	Oct. 20 – Sep. 21	803,017	Oct. 20 – Sep. 21
Daily Peak (CFS)	4,416	May 15, 2021	3,392	Jun 22, 2021
Daily Minimum (CFS)	**-1,981**	**Jan. 29, 2021**	**-1,990**	**Jan. 29, 2021**

1 - At the request of the Wyoming Game and Fish Department a yearly, minimum flow of 75 cfs will be provided through the Pathfinder Reservoir 30 inch jet-flow valve to the river below Pathfinder Dam. Spillway and additional releases were made in WY 2021 that resulted in a peak flow of 2,297 cfs on December 22, 2020.

Table 10: Monthly Computed Inflows, Outflows, and Contents for Pathfinder Reservoir, Water Year 2021.

Month	Gain from Kortes (KAF)	Gain from Kortes Percent of Avg. [1]	Inflow (KAF)[2]	Inflow[2] Percent of Avg.[1]	Outflow (KAF)	Outflow Percent of Avg. [1]	Content[4] (KAF)	Content[4] Percent of Avg. [1]
October	-2.5	**-56**[3]	30.7	76	16.8	126	660.5	121
November	-2.9	**-73**[3]	29.2	70	35.1	109	653.8	118
December	-1.4	**-30**[3]	48.8	111	82.6	241	619.4	110
January	-0.1	**-2**[3]	38.4	85	41.2	125	614.0	107
February	5.1	**74**	34.9	73	29.9	99	618.5	105
March	4.9	**43**	38.0	53	27.3	51	627.8	103
April	6.1	**37**	108.8	94	49.2	53	683.9	109
May	5.1	**22**	165.2	109	38.9	34	805.8	122
June	-9.4	**-49**[3]	129.7	67	137.4	80	791.3	117
July	-17.3	**-408**[3]	98.9	74	173.3	95	711.1	115
August	-9.2	**-412**[3]	52.0	63	122.4	89	633.0	114
September	-1.4	**-45**[3]	30.9	60	48.9	72	610.1	114
Annual	**-22.9**	-22	**805.6**	**79.0**	**803.0**	**83.6**		

1 - 30 year average is the period (1992-2021)
2 - The inflow includes the gain from Kortes Dam to Pathfinder Dam.
3 - Represents a negative number that makes the percentage meaningless.
4 - End of Month

Alcova and Gray Reef Reservoirs Storage and Releases

Alcova Dam and Reservoir is part of the Kendrick Project. The dam serves as a diversion dam for the Casper Canal and the reservoir as a forebay for the Alcova Powerplant. The dam, located about 10 miles downstream from Pathfinder Dam, was completed in 1938. Reservoir storage capacity is about 184,405 AF at elevation 5,500 feet, of which only the top 30,603 AF is active capacity available for irrigation of the Kendrick Project. The Powerplant consists of two electrical generating units with a total installed capacity of 36 MW at full release capacity of about 4,100 cfs. The spillway is a concrete-lined open channel in the left abutment of the dam controlled by three 25 by 40-foot gates with a capacity of 55,000 cfs at a reservoir level of 5,500 feet. The reservoir is typically operated during the irrigation season, May through September, at a level of 5,498 feet msl and at 5,488 feet msl for the remainder of the year. A higher operating level is maintained during the summer months to provide adequate head on the Casper Canal, while the lower winter operating level reduces the potential for ice damage to the canal gate.

Alcova Reservoir was drawn down to 5,459 feet from October 19, 2020 to December 18, 2020 which is about 30 ft lower than the normal winter operating level. This was done to conduct a full travel gate test at Alcova on October 21 and 22, 2020. The drawdown began on October 1, 2020 and continued through October 18, 2020. The reservoir began to refill on December 18, 2020 and was returned to its normal winter operating level of about 5,488 feet by January 06, 2021. Alcova Reservoir's return to summer operating level was initiated on April 1, 2021. The water surface elevation was raised to 5,498 feet on April 30, 2020 and the reservoir was maintained within one foot of elevation 5,498 feet throughout the irrigation season.

Gray Reef Dam and Reservoir is part of the Glendo Unit, Oregon Trail Division, Pick-Sloan Missouri Basin Program. The dam, which was completed in 1961, is a three-zoned rock and earth fill structure located about 2.5 miles below Alcova Dam. The reservoir has an active capacity of 1,744 AF. Gray Reef Reservoir is operated to reregulate widely fluctuating water releases from the Alcova Powerplant, and provide stable flow for irrigation, municipal, industrial, and fish and wildlife interests along the 147 miles of river between Alcova and Glendo Dams.

Gray Reef releases were very high in the early part of WY 2021 to lower Alcova Reservoir for the full travel gate test. Releases were raised from 2,000 cfs to 2,300 cfs on October 1 and raised again to 2800 cfs on October 10 before being lowered to 600 cfs from October 20 through December 30. Releases were lowered to normal winter flows of 500 cfs from December 31 through February 16. Due to excess winter releases from Alcova, Glendo Reservoir level was very high. To avoid entering the Glendo flood control pool, releases from Gray Reef were lowered to 450 cfs and 400 cfs from February through May of 2021. Also, due to the high water at Glendo, Reclamation could not fulfill the request of the Wyoming Game and Fish Department to release a series of flushing flows in March and April for the purpose of flushing silt from spawning gravels used by trout. Releases for the remainder of the water year were adjusted to meet irrigation demands below Guernsey Reservoir. The largest daily release of water for the water year (3,004 cfs) occurred on July 3, 2021.

Gains to the North Platte River from Alcova Dam to Glendo Reservoir

Total River gains from Alcova Dam to Glendo Reservoir were below average for WY 2021. Although gains in October, March, July, and August were above average, high inflow months of April, May and June were below average. June was especially low with 4.0 kaf which is only 16 percent of average (25.5 kaf). The highest volume gain month was May with 60.3 kaf at 84 percent of average. The April through July gain was 110,500 AF, which was 77 percent of average. The maximum computed daily river gain of 2,163 cfs occurred on May 3, 2021, and the daily computed Glendo Reservoir inflow peaked on June 28, 2021, at 3301 cfs. Figure 6 depicts a comparison of Average, WY 2020 and WY 2021 monthly river gains.

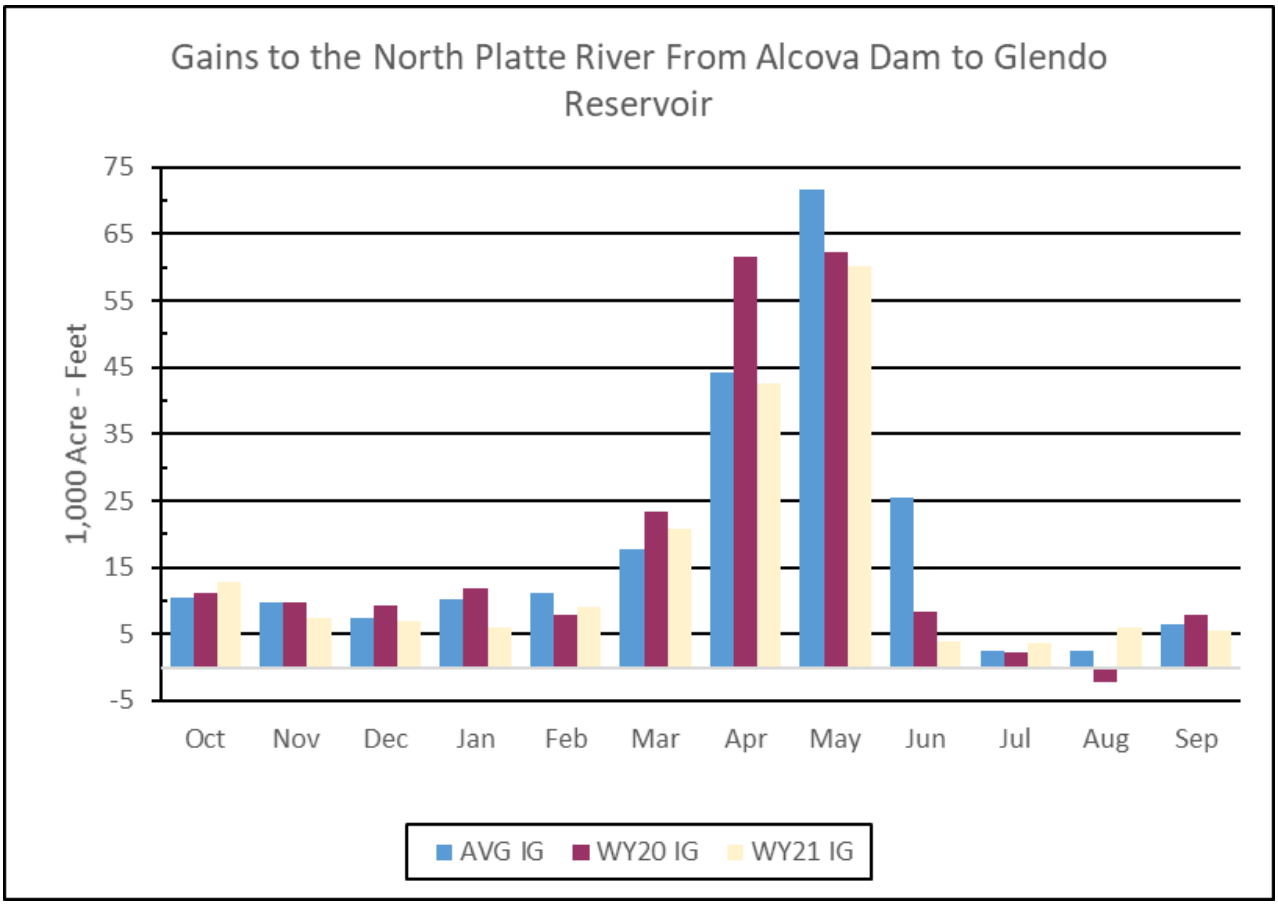

Figure 6: Gains to the North Platte River from Alcova Dam to Glendo Reservoir.

Glendo Reservoir Storage and Releases

Glendo Dam and Reservoir is the only storage facility for the Glendo Unit. The reservoir has a storage capacity of 763,039 AF, including 271,017 AF allocated to flood control. Glendo Powerplant consists of two electrical generating units, with a total installed capacity of 38 MW. With both generating units operating at capacity and the reservoir water surface at elevation 4,635.0 feet, approximately 3,400 cfs can be released through Glendo Powerplant. The reinforced concrete spillway has an ungated ogee crest. The spillway capacity at elevation 4,669.0 feet, (6 feet below the crest of the dam), is 10,335 cfs.

The outlet works from Glendo Dam consist of the primary outlet works, which discharge at the Powerplant, and the low-flow outlet, which discharges to the river immediately below the dam. The three primary outlet gates can release a combined discharge of 13,000 cfs with the powerplant shut down. During normal operation, when the reservoir elevation is below the top of conservation storage (4,635 feet), outlet works discharges should typically remain below 5,500 cfs. This precautionary practice is to minimize the potential for damage to the stilling basin and training walls. The low-flow outlet works are operated to maintain a continuous release of approximately 25 cfs. This provides a reliable water source for the downstream wetland area which results in associated

fish and wildlife benefits. In the summer of 2015, the dam was raised 3 feet with a parapet wall, and the dikes on the south side of the reservoir were raised 6 feet.

Glendo Reservoir storage was 135,044 AF at the beginning of WY 2021, which was 102 percent of average and 28 percent of the active conservation of 492,022 AF. Water releases from Glendo Reservoir were initiated on April 19, 2021 to fill the Inland Lakes. The reservoir reached a maximum storage for the year of 485,576 AF (elevation 4,634.46 feet) on May 11, 2021. At the end of the water year, Glendo Reservoir contained 138,438 AF of water (water surface elevation 4,592.44 feet) which was 103 percent of average and 28 percent of top of active conservation. Figure 7 depicts WY 2020 and WY 2021 end of month reservoir storage compared to Average. Table 5 depicts a summary of Glendo Reservoir information for WY 2021.

Glendo Reservoir releases were lowered starting August 22, 2021 to begin emptying of Guernsey Reservoir by end of September. Glendo reservoir releases were fully shut off including low flow valve on September 13, 2021.

Table 11: Glendo Reservoir Storage Allocations.

Reservoir Allocations	Elevation (FT)	Storage (AF)	Storage Allocation (AF)
Top of Inactive	4,570.00	51,573	51,573
Top of Active Conservation	4,635.00	492,022	440,449
Top of Exclusive Flood Control	4,653.00	763,039	271,017
Maximum water surface (surcharge)	4,669.00	1,092,290	329,251
Crest of Dam (without Camber)	4675		

Table 12: Glendo Reservoir Water Year Storage Data.

Storage-Elevation Data	Elevation (FT)	Storage (AF)	Date
Beginning of water year	4591.77	135,044	Oct 1, 2020 [1]
End of water year	4592.44	138,438	Sep 30, 2021
Annual Low	4587.19	113,407	Sep 6, 2021
Historic Low	4,548.10	15,140	Sep 28, 1966
Annual High	4634.46	485,576	May 11, 2021
Historic High	4,650.94	758,830	May 28, 1973

1 – Represents 0001 hours on October 1st.

Table 13: Glendo Reservoir Water Year Inflow and Outflow Data.

Inflow-Outflow Data	Inflow	Date	Outflow [1]	Date
Annual Total (AF)	1,225,658	Oct. 19 – Sep. 20	1,228,592	Oct. 19 – Sep. 20
Daily Peak (CFS)	4,709	5-May-20	7,480	26-Jul-20
Daily Minimum (CFS)	145	2-Dec-19	12	22-Sep-20
Peak Bypass Release (CFS)			2,958	29-May-20
Total Bypass Release (AF)			346,439 [2]	Oct. 19 – Sep, 20

1 -Includes the average daily release of approximately 25 cfs from the low flow outlet works for Apr-Sep.
2 - A low flow outlet works was completed in 1993 to allow for a release of 25 cfs.

Table 14: Monthly Computed Inflows, Outflows, and Contents for Glendo Reservoir, Water Year 2021.

Month	Gain from Alcova (KAF)	Gain from Alcova Percent of Avg. [1]	Inflow[3] (KAF)	Inflow[3] Percent of Avg [1]	Outflow (KAF)	Outflow Percent of Avg[1, 2]	Content[4] (KAF)	Content[4] Percent of Avg. [1]
October	12.9	123	101.7	201	1.7	82[2]	233.9	130
November	7.4	77	43.3	101	1.6	108[2]	275.1	124
December	7.0	95	44.6	111	1.5	95[2]	317.1	122
January	6.1	60	37.1	89	1.6	97[2]	352.2	118
February	9.1	83	35.7	90	1.5	80[2]	386.2	115
March	20.8	117	46.9	70	1.7	11[2]	430.8	111
April	42.5	96	63.9	59	24.1	47	468.0	106
May	60.3	84	92.2	55	134.7	101	422.4	89
June	4.0	16	107.2	61	153.9	90	369.9	79
July	3.7	153	161.4	97	264.3	87	261.8	80
August	6.1	255	114.1	90	247.8	86	125.0	77
September	5.5	83	42.7	61	27.5	29	138.4	103
Annual	**185.4**	**85**	**890.8**	**81**	**861.9**	**81**		

1 – 30-year average is the period (1992-2021)
2 – 25-year average is the period (1994-2021) in 1993 a low flow valve was installed at Glendo Dam which allowed the release of 25 cfs outside the irrigation season. Therefore, a 28-year average is used for the months of October through March.
3 - Inflow include the gain from Alcova Dam to Glendo Dam.
4 - End of month

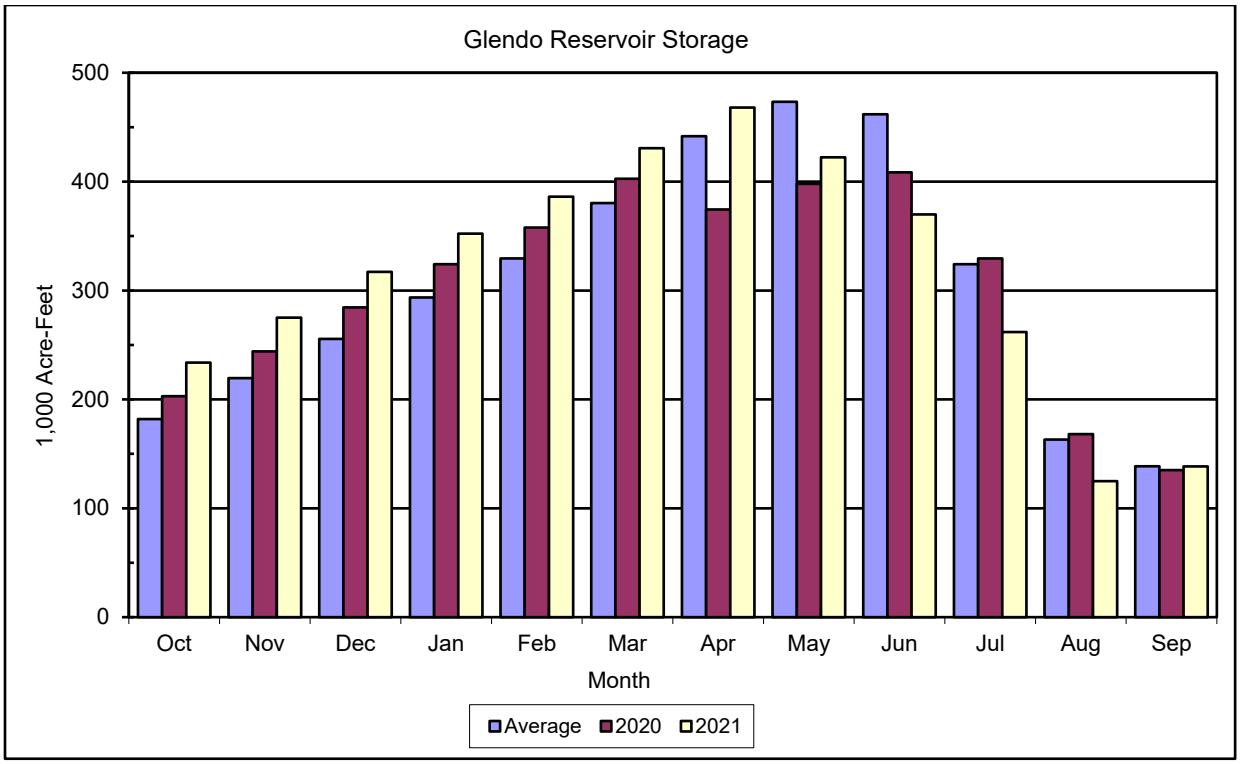

Figure 7: Glendo Reservoir Monthly Storage.

Gains to the North Platte River from Glendo Dam to Guernsey Reservoir

The river gains between Glendo Dam and Guernsey Dam during WY 2021 were above average for 3 months of the year. Guernsey gain calculations began in WY 2000 and are a 22-year average. October through February gains were below average, but March and April were well above average. The river gains from Glendo to Guernsey Dams ranged from a high of 134.6 percent of average in April 2021 to a low of 9.6 percent in June 2021. On June 4, 2021 the daily computed gain to Guernsey Reservoir peaked at 710 cfs. Figure 8 depicts a comparison of average, WY 2020 and WY 2021 monthly river gains.

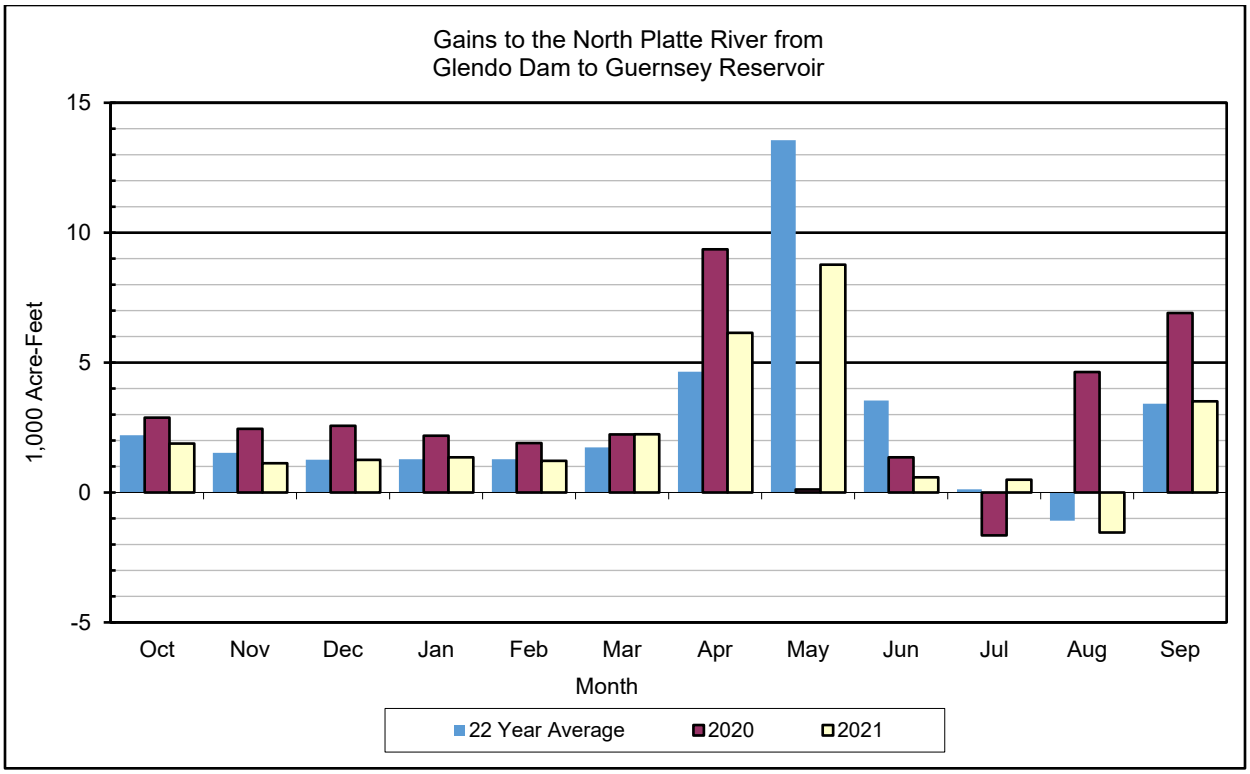

Figure 8: Gains to the North Platte River from Glendo Dam to Guernsey Reservoir.

Guernsey Reservoir Storage and Releases

Guernsey Dam, located about 25 miles below Glendo Dam, again stores and reregulates the flow of the river prior to delivery of storage water to project lands of the North Platte Project and Glendo Unit. Guernsey Powerplant, located on the right abutment of the dam, has two 3.2 MW electrical generating units with a combined release capability of about 1,340 cfs. The windings of both units have been replaced resulting in the rating of 3.2 MW per unit. The north spillway gate, with a capacity of 50,000 cfs at a reservoir level of 4,420 feet, is utilized for irrigation releases to supplement the maximum powerplant releases.

The original capacity of the reservoir was 73,800 AF, but this has been reduced by deposition of silt. Using data from the 1980 Sedimentation Survey of Guernsey Reservoir, the March 1982 Area Capacity Tables and Curves show about 45,612 AF of available storage.

At the beginning of WY 2021, storage in Guernsey Reservoir was at 4,516 AF. Reclamation began Glendo releases on April 19, 2021 and Guernsey releases commenced on April 18, 2021 to move water into the Inland Lakes. The annual "silt run" from the reservoir was initiated on July 6 and continued for 19 days. Reservoir storage was reduced to initiate the silt run and was maintained at a low level throughout the period. The minimum reservoir content during the silt run of 1,007 AF occurred on July 24, 2021. Following the silt run, the reservoir was refilled to approximately 28,000 AF. The releases from Guernsey Dam averaged 4,316 cfs from July 25 to August 31. Guernsey reservoir was emptied to allow the Intake Gate replacement project to occur. The reservoir end of

September storage was zero and peaked at 29,977 AF on June 11, 2021. Guernsey releases continued beyond the end of WY 2021 to keep the reservoir empty during the gate intake project. The Glendo low flow valve was shut off on September 13, 2021 to avoid wasting water. Guernsey held the north spillway gate open throughout the construction and passed Glendo to Guernsey gains only. See Figure 9 for WY 2020 and WY 2021 storage compared to average.

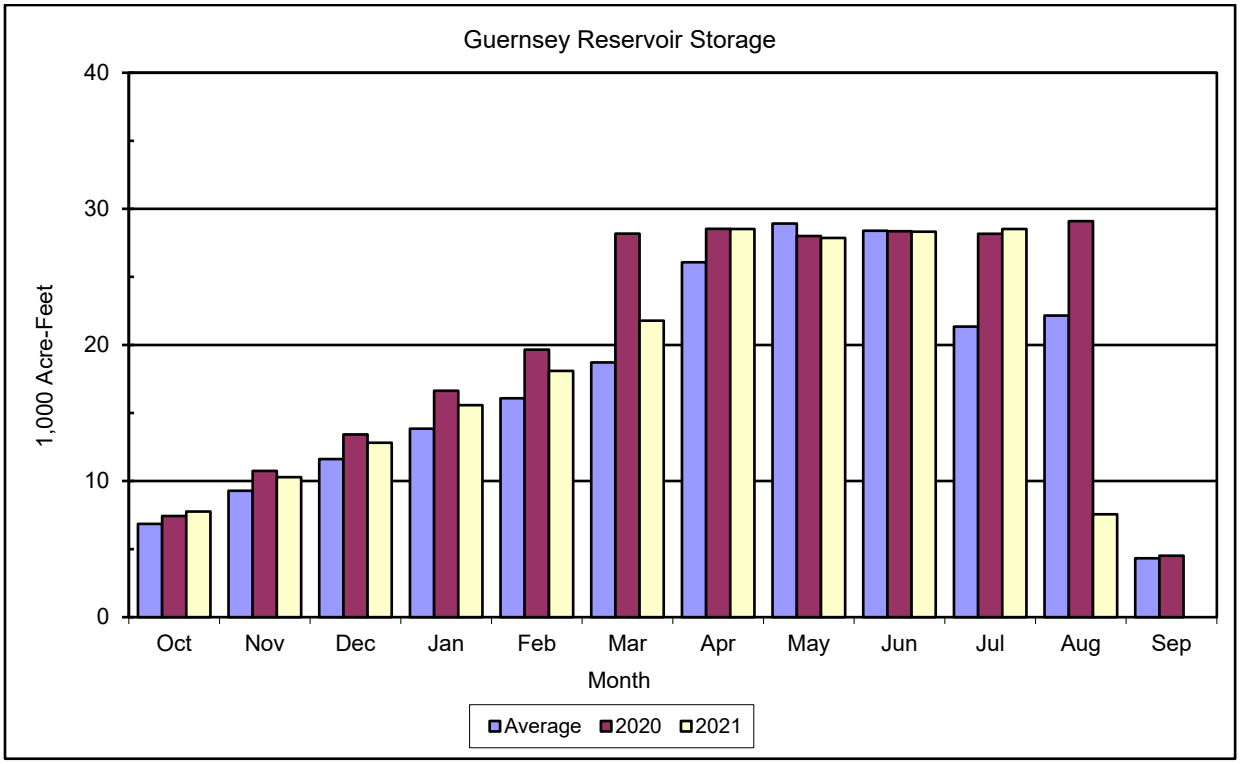

Figure 9: Guernsey Reservoir Monthly Storage.

Precipitation Summary for Water Year 2020

Watershed precipitation in each basin is an average of precipitation readings using several stations as indicators. The 2020 precipitation was at or above average for most of the North Platte River Basin. Precipitation ranged from a high of 203 percent in December to an August low of 25 percent of average for Seminoe, Pathfinder, Glendo, and Guernsey.

The North Platte basin received the majority of its precipitation in November and December for WY 2020. Glendo basin precipitation had the lowest at 21 percent of average for August and 22 percent for July. The North Platte basin precipitaton for March through June were as follows: Seminoe basin – 81, 71, 99, and 76 percent of average, Pathfinder basin - 74, 106, 3, and 32 percent of average, Glendo basin - 123, 83, 19, and 32 percent of average, and Guernsey basin- 52, 41, 37, and 37 percent of average.

See Figure 10 for a comparison of average, WY 2020 and WY 2021 total precipitation.

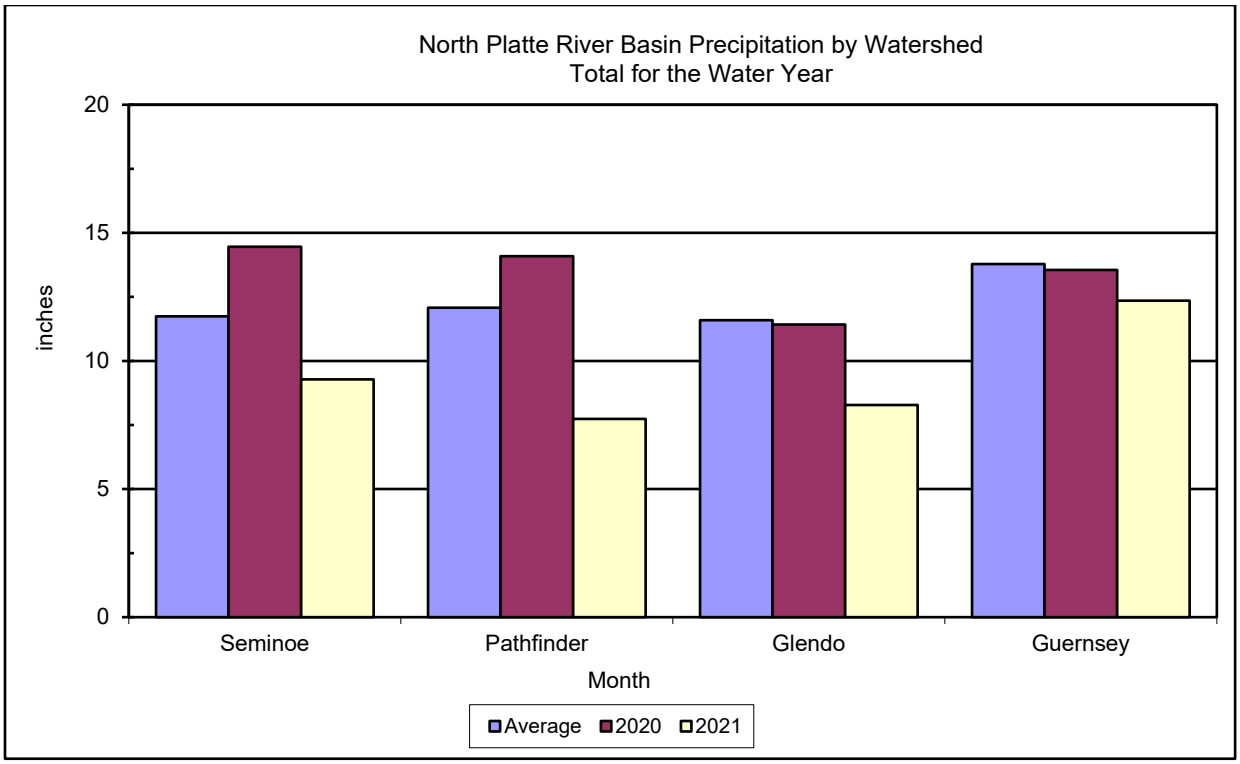

Figure 10: North Platte River Basin Precipitation by Watershed. Total for Water Year 2021.

Snowpack Summary for Water Year 2020

Reclamation relies on the Natural Resource Conservation Service (NRCS) to provide snow water equivalent (SWE) information for the three drainage areas in which Reclamation forecasts snowmelt runoff. On February 1 the watershed percentage above Seminoe Reservoir snowpack SWE started at 76 percent of median, increased to 94 percent by April 1, and finished at 81 percent on May 1. In the Sweetwater River watershed, the SWE started at 66 percent of median on February 1 with steady increases and peaked at 83 percent on May 1. Snow in the Alcova Dam to Glendo Reservoir watershed began at 69 percent of median on February 1 with steady increases and peaked at 123 percent on May 1. Table 15 shows a summary of snowpack for WY 2021.

Table 15: North Platte Snowpack Water Content for Water Year 2021.

Watershed	Feb 1 SWE[1]	Feb 1 % of Median[2]	Mar 1 SWE[1]	Mar 1 % of Median[2]	Apr 1 SWE[1]	Apr 1 % of Median[2]	May 1 SWE[1]	May 1 % of Median[2]
Seminoe Reservoir	10.06	76	15.74	91	19.86	94	16.74	81
Pathfinder Reservoir	6.05	66	7.80	71	12.20	82	12.85	83
Glendo Reservoir	4.25	69	6.05	72	12.83	117	11.10	123

1 - SWE (Snow water equivalent is the amount of water in the snowpack expressed in inches).
2 - Median is based on the 1981-2010 period.

Allocation for Water Year 2021

With just above average storage and only 63 percent of average April to July inflow an allocation was required. Initial allocation began on June 16, 2021.

Ownerships for Water Year 2021

Stored water, which is held in accounts for various entities, is referred to as their ownership. At the beginning of WY 2021, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 411,124 AF of water, which is 97 percent of average. The Kendrick ownership contained 1,073,776 AF of water, which is 124 percent of average. The Glendo ownership contained 131,202 AF of water, which is 100 percent of average.

The total amount of water stored at the end of WY 2021 in the mainstem reservoirs for use in WY 2022 was 1,260,470 AF, which was 86 percent of average.

At the end of WY 2021, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 152,225 AF of water, which is 35 percent of average. The Glendo ownership contained 134,160 AF of water which is 102 percent of average. The Kendrick ownership contained 953,463 AF, which is 109 percent of average. The Operational/Reregulation water account contained 11,304 AF. Also stored in the North Platte storage system was 7,318 AF for the city of Cheyenne, zero for the Wyoming Water Development Commission, and 2,000 AF for Pacificorp. See Figure 11 for the last two water years' ownership carryover compared with the average carryover for the Kendrick, North Platte, and Glendo Projects. Table 8 shows a summary of ownership for WY 2021.

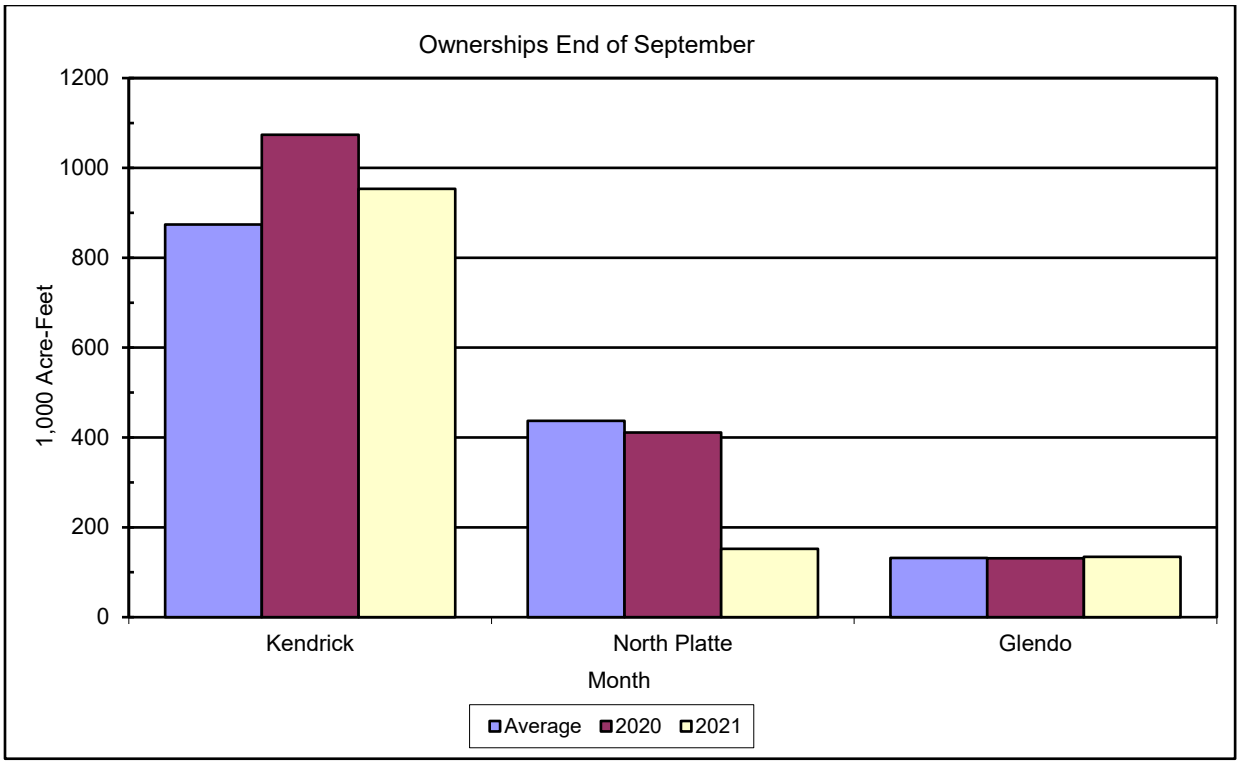

Figure 11: Ownership at the End of September.

North Platte River Forecast 2021

Reservoir inflow forecasts are prepared at the first of February, March, April, and May to estimate the inflows expected for the April through July runoff period.

Runoff forecasts for the Seminoe Reservoir watershed, the Sweetwater River above Pathfinder Reservoir, and the North Platte River from Alcova Dam to Glendo Reservoir are based on snow telemetry (SNOTEL) and/or snow course sites, precipitation sites, and calculated inflows. Reclamation maintains a database consisting of historic monthly data for reservoir inflows, snow, and precipitation stations. WYAO staff coordinates with NRCS Portland Office staff to exchange forecasted numbers. Reclamation forecasts and NRCS forecasts are then reviewed by WYAO management. All the information available is considered and judgement is applied, resulting in a final forecast of reservoir inflow. The forecasted information is then made available to the public through a news release and is used in updating monthly reservoir operating plans. Table 7 depicts a summary of the monthly forecasts for WY 2021.

Table 16: Summary of Forecasts of April-July Runoff for Water Year 2021.

Forecast Points	Feb 1 (KAF)	Feb 1 Percent of Avg.	Mar 1 (KAF)	Mar 1 Percent of Avg.	Apr 1 (KAF)	Apr 1 Percent of Avg.	May 1 (KAF)	May 1 Percent of Avg.	Actual (KAF)	Actual Percent of Avg.[1]
Seminoe Reservoir	480	68	600	85	625	88	460[2]	65	339.2	48
Sweetwater River	15	28	18	34	30	56	35[3]	66	17.2	32
Alcova to Glendo	60	42	75	52	135	94	155[4]	108	110	76

1 – Average is based on the 1992-2021 period.
2 – The May 1 forecast includes an April inflow of 65,205 acre-feet.
3 – The May 1 forecast includes an April inflow of 6,549 acre-feet.
4 – The May 1 forecast includes an April inflow of 42,485 acre-feet.

Table 17: Summary of North Platte River System Ownership for Water Year 2021.

Summary of North Platte River Systems Ownerships for Water Year 2021 (Acre-Feet)

Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Pathfinder Ownership														
Evaporation		-2,752	-472	-613	-2,047	-406	-1,191	-3,107	-3,898	-6,207	-4,500	-4,602	-1,813	**-31,608**
Accrual		2,171	19,361	18,878	22,840	25,478	46,016	65,564	62,860	51,406	0	0	0	**314,574**
Delivery		0	0	0	0	0	0	0	0	-67,562	-226,854	-228,576	-20,159	**-543,151**
PP&L payback		0	0	0	0	0	0	0	806	480	0	0	0	**1,286**
Evaporation payback										0	0			**0**
Re-Regulation transfer												0	0	**0**
Ownership total		410,543	429,432	447,697	468,490	493,562	538,387	600,844	660,612	638,729	407,375	174,197	152,225	
Actual Ownership	411,124	410,543	429,432	447,697	468,490	493,562	538,387	600,844	660,612	638,729	407,375	174,197	152,225	
Kendrick Ownership														
Evaporation		-4,933	-810	-1,001	-3,708	-700	-1,975	-4,783	-4,413	-6,473	-5,572	-5,719	-4,144	**-44,231**
Accrual		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Delivery		0	0	0	0	0	0	0	-10,152	-17,810	-15,336	-18,392	-14,392	**-76,082**
Delivery City of Casper												0		
Evaporation payback										0	0	0	0	**0**
Re-Regulation transfer							0	0	0	0	0		0	**0**
Ownership total		1,068,843	1,068,033	1,067,032	1,063,324	1,062,624	1,060,649	1,055,866	1,041,301	1,017,018	996,110	971,999	953,463	
Actual Ownership	1,073,776	1,068,843	1,068,033	1,067,032	1,063,324	1,062,624	1,060,649	1,055,866	1,041,301	1,017,018	996,110	971,999	953,463	
Glendo Ownership														
Evaporation		-1,503	-449	-831	5	-193	-19	-1,290	-2,185	-4,412	-4,800	-5,037	-3,305	**-24,019**
Accrual		0	0	0	0	0	2,460	23,524	17,293	0	0	0	0	**43,277**
Delivery		0	0	0	0	0	0	0	0	-2,745	-8,727	-7,419	-2,632	**-21,523**
Evaporation payback									3,649	1,574	0	0	0	**5,223**
Ownership total		129,699	129,250	128,419	128,424	128,231	130,672	152,906	171,663	166,080	152,553	140,097	134,160	
Actual Ownership	131,202	129,699	129,250	128,419	128,424	128,231	130,672	152,906	171,663	166,080	152,553	140,097	134,160	

Summary of North Platte River Systems Ownerships for Water Year 2021 (Acre-Feet)

Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Guernsey Ownership														
Evaporation		0	0	-20	-45	-54	-82	-523	-699	-905	0	0	0	**-2,328**
Accrual		0	0	8,095	7,327	10,248	20,137	0	0	0	0	0	0	**45,807**
Delivery		0	0	0	0	0	0	0	0	-45,200	0	0	0	**-45,200**
Evaporation payback									1,228	493	0	0	0	**1,721**
Re-Regulation transfer												0	0	**0**
Ownership total		0	0	8,075	15,357	25,551	45,606	45,083	45,612	0	0	0	0	
Actual Ownership	0	0	0	8,075	15,357	25,551	45,606	45,083	45,612	0	0	0	0	
Inland Lakes														
Evaporation		-34	-44	-83	-33	-27	-31	-169	-32	0	0	0	0	**-453**
Accrual		14,590	8,450	0	0	0	0	23,100	0	0	0	0	0	**46,140**
Delivery		0	0	0	0	0	0	-23,001	-22,686	0	0	0	0	**-45,687**
Ownership total		14,556	22,962	22,879	22,846	22,819	22,788	22,718	0	0	0	0	0	
Actual Ownership	0	14,556	22,962	22,879	22,846	22,819	22,788	22,718	0	0	0	0	0	
City of Cheyenne														
Evaporation		-48	-1	-3	-35	0	-16	-66	-55	-37	-36	-38	-34	**-369**
Stored		1,236	848	785	664	585	857	432	0	588	585	718	1,077	**8,375**
Used		0	-1	-5	-34	-68	-73	-103	-6,203	-2,044	-122	-115	-235	**-9,003**
Ownership total		9,503	10,349	11,126	11,721	12,238	13,006	13,269	7,011	5,518	5,945	6,510	7,318	
Actual Ownership	8,315	9,503	10,349	11,126	11,721	12,238	13,006	13,269	7,011	5,518	5,945	6,510	7,318	
Pacific Corp (PP&L)														
Evaporation		-11	-2	-5	0	0	0	-6	-16	-29	-32	-31	-27	**-159**
Accrual		0	0	0	0	0	0	0	40	29	32	31	27	**159**
Delivery		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Ownership total		1,989	1,987	1,982	1,982	1,982	1,982	1,976	2,000	2,000	2,000	2,000	2,000	
Actual Ownership	2,000	1,989	1,987	1,982	1,982	1,982	1,982	1,976	2,000	2,000	2,000	2,000	2,000	

Summary of North Platte River Systems Ownerships for Water Year 2021 (Acre-Feet)

Months	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
WWDC Ownership														
Evaporation		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Accrual		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Delivery		0	0	0	0	0	0	0	0	0	0	0	0	**0**
Ownership total		0	0	0	0	0	0	0	0	0	0	0	0	
Actual Ownership	0	0	0	0	0	0	0	0	0	0	0	0	0	
Operational Ownership														
Evaporation		-57	-8	-18	-1	0	0	-53	-101	-201	-186	-150	-80	**-855**
Accrual		0	0	0	0	0	245	1,910	5,126	0	0	0	0	**7,281**
Delivery		0	0	0	0	0	0	0	0	-1,422	-2,762	-3,229	-1,235	**-8,648**
Evaporation payback									91	0	0	0	0	**91**
Ownership total		7,809	7,801	7,783	7,782	7,782	8,027	9,884	15,000	13,377	10,429	7,050	5,735	
Actual Ownership	7,866	7,809	7,801	7,783	7,782	7,782	8,027	9,884	15,000	13,377	10,429	7,050	5,735	
Re-Regulation Water														
Evaporation		0	0	0	0	0	0	0	-21	0	0	0	-28	**-49**
Accrual		0	0	0	0	0	0	0	8,957	1,067	0	0	5,597	**15,621**
Delivery		0	0	0	0	0	0	0	-7,866	-2,137	0	0	0	**-10,003**
Evaporation Payback										0	0	0	0	**0**
Re-Regulation Transfer							0	0	0	0	0	0	0	**0**
Ownership total		0	0	0	0	0	0	0	1,070	0	0	0	5,569	
Actual Ownership	0	0	0	0	0	0	0	0	1,070	0	0	0	5,569	

A - In 1992, the Wyoming State Engineer granted an exchange which allows Pacific Power to exchange direct flows in the winter months (October through April) for direct flow in the summer months. During the winter months some direct flows which are available for storage under Pathfinder's storage right are not stored but instead are allowed to pass downstream for use by Pacific Power. In exchange, starting on May 1 Pacific Power allows some of its available direct flow to pass downstream to Glendo Reservoir to be stored as Pathfinder ownership. The exchange water was returned to Pathfinder at a rate of 26 AF daily starting on May 1, 2020, until July 2, 2020, when the last 16 AF of the exchange was returned.

B - Amounts shown as delivery are storage water only. Natural flow which was delivered is not shown in this table.

C - Transfer refers to Inland Lakes ownership water which was delivered from storage in Glendo or Guernsey Reservoirs. On April 21 through May 18, 45,562 AF was transferred to the Inland Lakes.

D - Wyoming Water Development Commission (WWDC) did not contract with the Bureau of Reclamation for storage.

Table 18: North Platte Water Year 2021 Hydrologic Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Reservoir (Initial content: 822.7 KAF)														
Total Inflow	kaf	13.7	22.7	20.1	23.6	21.1	42.2	65.2	129.3	106.8	38.8	27.4	9.6	520.5
Total Inflow	cfs	223	381	327	384	380	686	1096	2103	1795	631	446	161	NA
Turbine Release	kaf	33.3	31.8	49.5	38.6	29.9	33.1	102.7	160.2	139	116.2	54	5.6	793.9
Jetflow Release	kaf	0	0.3	0.7	0	0	0	0	0	0	0	7.2	26.7	34.9
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	33.3	32.1	50.2	38.6	29.9	33.1	102.7	160.2	139	116.2	61.2	32.3	828.8
Total Release	cfs	542	539	816	628	538	538	1726	2605	2336	1890	995	543	NA
Evaporation	kaf	3.9	2.1	1.3	3.9	0.9	2	3.3	0	4.5	3.2	3.7	2.4	31.2
End-month content	kaf	635.8	626.8	596.1	577.7	568.6	576.5	536	501.7	466.1	386.1	349.3	324.9	NA
End-month elevation	ft	6334.5	6333.9	6331.6	6330.2	6329.5	6330.1	6326.9	6324	6320.8	6312.9	6308.9	6306	NA
Kortes Reservoir (Initial content: 4.7 KAF)														
Total Inflow	kaf	33.3	32.1	50.2	38.6	29.9	33.1	102.7	160.2	139	116.2	61.2	32.3	828.8
Total Inflow	cfs	542	539	816	628	538	538	1726	2605	2336	1890	995	543	NA
Turbine Release	kaf	33	31.8	49.4	38.2	29.9	32.4	102.7	160.2	138.8	116.2	61.2	32.3	826.1
Spillway Release	kaf	0.2	0.3	0.8	0.4	0	0.7	0	0	0.2	0	0	0	2.6
Total Release	kaf	33.2	32.1	50.2	38.6	29.9	33.1	102.7	160.2	139	116.2	61.2	32.3	828.7
Total Release	cfs	540	539	816	628	538	538	1726	2605	2336	1890	995	543	NA
Min reservoir release	cfs	540	540	816	627	538	538	1726	2605	2336	1889	995	542	NA
Max reservoir release	cfs	540	540	816	627	538	538	1726	2605	2336	1889	996	542	NA
Pathfinder Reservoir (Initial content: 844.7 KAF)														
Sweetwater Inflow	kaf	1.7	2.1	2.2	2.1	1.9	3.5	6.5	7	2.5	1.2	0.9	0.6	32.2
Kortes-Path Gain	kaf	-2.5	-2.9	-1.4	-0.1	5.1	4.9	6.1	5.1	-9.4	-17.3	-9.2	-1.4	-23
Inflow from Kortes	kaf	33.2	32.1	50.2	38.6	29.9	33.1	102.7	160.2	139	116.2	61.2	32.3	828.7
Total Inflow	kaf	32.4	31.3	51	40.6	36.9	41.5	115.3	172.3	132.1	100.1	52.9	31.5	837.9
Total Inflow	cfs	527	526	829	660	664	675	1938	2802	2220	1628	860	529	NA
Turbine Release	kaf	0	0.3	0.1	0	0.2	0.1	0.3	0.2	0	3.8	0	0	5
Jetflow Release	kaf	16.8	35.2	82.6	41.2	29.9	27.3	49.2	38.9	137.3	173.3	122.4	48.9	803

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	16.8	35.5	82.7	41.2	30.1	27.4	49.5	39.1	137.3	177.1	122.4	48.9	808
Total Release	cfs	273	597	1345	670	542	446	832	636	2307	2880	1991	822	NA
Evaporation	kaf	5.6	2.9	2.8	4.6	2.7	4.7	10.2	11.4	9.4	4.6	8.5	5.5	72.9
End-month content	kaf	660.5	653.4	618.9	613.7	617.8	627.2	682.8	804.6	790	708.4	630.4	607.5	NA
End-month elevation	ft	5831.4	5831	5828.7	5828.4	5828.7	5829.3	5832.8	5839.7	5838.9	5834.3	5829.5	5828	NA
Jetflow Release	cfs	273	592	1343	670	538	444	827	633	2307	2818	1991	822	NA
Min Release	cfs	273	592	1343	670	538	444	827	633	2307	2818	1991	822	NA
Alcova Reservoir (Initial content: 180.3 KAF)														
Total Inflow	kaf	16.8	35.5	82.7	41.2	30.1	27.4	49.5	39.1	137.3	177.1	122.4	48.9	808
Total Inflow	cfs	273	597	1345	670	542	446	832	636	2307	2880	1991	822	NA
Turbine Release	kaf	97.5	0	0	31.2	26.8	26.2	26.7	27.8	121.7	157.3	105.7	38.5	659.4
Spillway Release	kaf	0	35.2	37	0	0	0	0	0	0	0	0	0	72.2
Casper Canal Release	kaf	0	0	0	0	0	0	0	10	13.3	18.3	15.5	9.3	66.4
Total Release	kaf	97.5	35.2	37	31.2	26.8	26.2	26.7	37.8	135	175.6	121.2	47.8	798
Total Release	cfs	1586	592	602	507	483	426	449	615	2269	2856	1971	803	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.5	98.5	144	153.8	156.9	157.7	179.7	180	180.9	180.8	180.6	180.6	NA
End-month elevation	ft	5459.1	5459.1	5482.5	5487	5488.4	5488.7	5498.1	5498.2	5498.6	5498.5	5498.5	5498.5	NA
Gray Reef Reservoir (Initial content: 1.7 KAF)														
Total Inflow	kaf	97.5	35.2	37	31.2	26.8	26.2	26.7	27.8	121.7	157.3	105.7	38.5	731.6
Total Inflow	cfs	1586	592	602	507	483	426	449	452	2045	2558	1719	647	NA
Total Release	kaf	97.6	35.2	37	31.2	26.8	26.2	26.7	27.8	121.6	157.2	105.6	38.4	731.3
Total Release	cfs	1587	592	602	507	483	426	449	452	2044	2557	1717	645	NA
Min reservoir release	cfs	1576	591	602	504	482	426	448	452	1979	2556	1685	567	NA
Max reservoir release	cfs	1576	591	602	504	482	426	448	452	1979	2556	1685	567	NA
Glendo Reservoir (Initial content: 166.4 KAF)														
Alcova-Glendo Gain	kaf	12.9	7.4	7	6.1	9.1	20.8	42.5	60.3	4	3.7	6.1	5.5	185.4
Inflow from Gray Reef	kaf	97.6	35.2	37	31.2	26.8	26.2	26.7	26.4	120.2	155.8	104.2	37	724.3
Total Inflow	kaf	110.5	42.6	44	37.3	35.9	47	69.2	88.1	125.6	160.9	111.7	43.9	916.7

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	1797	716	716	607	646	764	1163	1433	2111	2617	1817	738	NA
Turbine Release	kaf	0	0	0	0	0	0	22.8	12.4	166.3	231.3	221.4	91.6	745.8
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	18
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0.4	0.3	0.2	0.4	0.2	0.6	0	0	0	61.3	39.4	0	102.8
Total Release	kaf	1.9	1.8	1.7	1.9	1.7	2.1	24.3	13.9	167.8	294.1	262.3	93.1	866.6
Total Release	cfs	31	30	28	31	31	34	408	226	2820	4783	4266	1565	NA
Evaporation	kaf	1.4	1	0.9	0.9	1	1.9	3.3	5.3	7.4	6.9	4.7	2.6	37.3
End-month content	kaf	242.3	282.1	323.5	358	391.2	434.2	475.8	543.3	492.3	350.4	191.8	138.6	NA
End-month elevation	ft	4608.8	4613.8	4618.7	4622.4	4625.8	4629.9	4633.6	4639	4635	4621.6	4601.6	4592.5	NA
Guernsey Reservoir (Initial content: 6.0 KAF)														
Glendo-Guerns Gain	kaf	1.9	1.1	1.3	1.4	1.2	2.2	6.1	8.8	0.6	0.5	-1.5	3.5	27.1
Inflow from Glendo	kaf	1.9	1.8	1.7	1.9	1.7	2.1	24.3	13.9	167.8	294.1	262.3	93.1	866.6
Total Inflow	kaf	3.8	2.9	3	3.3	2.9	4.3	30.4	22.7	168.4	294.6	260.8	96.6	893.7
Total Inflow	cfs	62	49	49	54	52	70	511	369	2830	4791	4242	1623	NA
Turbine Release	kaf	0	0	0	0	0	0	22.8	21.4	51.8	53.5	56.5	53.9	259.9
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	0	0	112.2	236.7	221.8	49.8	620.5
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	23.2	22.6	167	293.3	280.8	104	892.5
Total Release	cfs	5	3	5	5	4	5	390	368	2807	4770	4567	1748	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.2	5.7
End-month content	kaf	7.8	10.3	12.8	15.6	18.1	21.8	28.5	27.9	28.3	28.5	7.6	0	NA
End-month elevation	ft	4398.1	4400.6	4402.7	4404.7	4406.4	4408.6	4412.2	4411.9	4412.1	4412.2	4397.9	4370	NA
Physical EOM Content	kaf	1650.8	1677	1701.2	1724.7	1758.5	1823.3	1908.7	2063.4	1963.5	1660.1	1365.6	1257.5	NA

Table 19: North Platte Water Year 2020 Ownership Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
North Platte Pathfinder (Initial ownership: 669.8 KAF)														
Net Accrual	kaf	10	20.2	19.5	22.9	26.7	47.9	72.3	135.3	0	0	0	0	354.8
Evaporation	kaf	2.9	1.7	1.4	2.7	1.4	2.7	5.5	6.1	8.8	6.7	6.2	2.4	48.5
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	221.6	252.1	82.2	555.9
End-month Ownership	kaf	421.1	441.3	460.8	483.7	510.4	558.3	630.6	765.9	757.1	528.8	270.5	185.9	NA
North Platte Guernsey (Initial ownership: 0 KAF)														
Net Accrual	kaf	0	0	8	7.2	10	20.4	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.3	0	0	2.9
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	5.2	38.8	0	0	44
End-month Ownership	kaf	0	0	8	15.2	25.2	45.6	45.2	44.8	39.1	0	0	0	NA
Inland Lakes (Initial ownership: 0 KAF)														
Net Accrual	kaf	14.5	8.3	0	0	0	0	23.2	0	0	0	0	0	46
Evaporation/Seepage	kaf	0.3	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0	0	0	0	1.4
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	23.2	22.6	0	0	0	0	45.8
End-month Ownership	kaf	14.5	22.8	22.7	22.5	22.4	22.3	22.3	-0.5	-0.5	-0.5	-0.5	-0.5	NA
Kendrick (Initial ownership: 1121.6 KAF)														
Net Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	7.7	4.2	3.4	6.1	3.1	5.5	10.4	10	11.7	8.8	11.1	8.1	90.1
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	11.4	14.7	19.7	16.9	10.7	73.4
End-month Ownership	kaf	1066.1	1061.9	1058.5	1052.4	1049.3	1043.8	1033.4	1012	985.6	957.1	929.1	910.3	NA
Glendo Unit (Initial ownership: 165 KAF)														
Accrual	kaf	0	0	0	0	0	2.2	25.2	13.1	0	0	0	0	40.5
Evaporation	kaf	1	0.5	0.4	0.7	0.3	0.7	1.3	1.4	1.9	1.5	1.8	1.2	12.7
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
End-month Ownership	kaf	130.2	129.7	129.3	128.6	128.3	129.8	153.7	165.4	161.5	154	147.2	142	NA
Re-regulation (Initial ownership: 45.9 KAF)														
Accrual	kaf	0	0	0	0	0	0	0	56	0	0	0	0	56
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0	0.7	0	0	0	0.7

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	55.3	0	0	0	55.3
End-month total	kaf	0	0	0	0	0	0	0	56	0	0	0	0	NA
City of Cheyenne (Initial ownership: 7.6 KAF)														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0.1	0.1	0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	1.1
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.1	12.5	13.1	13.8	13.9	10.3	11.3	11.8	12.4	13	NA
Pacificorp (Initial ownership: 2 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
Other (Initial ownership: 14.6 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0.1	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.9	7.8	7.8	7.8	7.8	7.7	7.6	7.5	7.4	6.9	4.9	4.8	NA

Table 20: North Platte Water Year 2020 Irrigation Delivery Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Kendrick (Casper Canal)														
Requested	kaf	0	0	0	0	0	0	0	10	13.3	18.3	15.5	9.3	66.4
Delivered	kaf	0	0	0	0	0	0	0	10	13.3	18.3	15.5	9.3	66.4
Kendrick (River)														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Guernsey Deliveries														
North Platte Req	kaf	0	0	0	0	0	0	0	0	165	287.3	275.8	100	828.1
Glendo Req	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Inland Lakes Req	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Requirement	kaf	0	0	0	0	0	0	23.2	22.6	167	293.3	280.8	104	890.9
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	23.2	22.6	167	293.3	280.8	104	892.5

Table 21: North Platte Water Year 2020 Power Operations.

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Power Plant														
Turbine Release	kaf	33.3	31.8	49.5	38.6	29.9	33.1	102.7	160.2	139	116.2	54	5.6	793.9
Bypass	kaf	0	0.3	0.7	0	0	0	0	0	0	0	7.2	26.7	34.9
Maximum generation	gwh	32.505	5.242	8.111	31.379	28.111	31.111	29.808	30.113	28.511	28.378	7.739	0.785	261.793
Actual generation	gwh	5.508	5.242	8.111	6.253	4.814	5.327	16.432	25.151	21.41	17.337	7.739	0.785	124.109
Percent max generation		17	100	100	20	17	17	55	84	75	61	100	100	47
Average kwh/af		165	165	164	162	161	161	160	157	154	149	143	140	156
Kortes Power Plant														
Turbine Release	kaf	33	31.8	49.4	38.2	29.9	32.4	102.7	160.2	138.8	116.2	61.2	32.3	826.1
Bypass	kaf	0.2	0.3	0.8	0.4	0	0.7	0	0	0.2	0	0	0	2.6
Maximum generation	gwh	5.676	5.47	8.497	6.57	24.94	5.573	26.712	27.606	23.874	27.606	27.606	26.712	216.842
Actual generation	gwh	5.676	5.47	8.497	6.57	5.143	5.573	17.664	27.554	23.874	19.986	10.526	5.556	142.089
Percent max generation		100	100	100	100	21	100	66	100	100	72	38	21	66
Average kwh/af		172	172	172	172	172	172	172	172	172	172	172	172	172
Fremont Canyon Power Plant														
Turbine Release	kaf	0	0.3	0.1	0	0.2	0.1	0.3	0.2	0	3.8	0	0	5
Bypass	kaf	16.8	35.2	82.6	41.2	29.9	27.3	49.2	38.9	137.3	173.3	122.4	48.9	803
Maximum generation	gwh	45.876	44.396	45.662	45.427	41.016	45.501	44.379	46.671	45.621	46.721	46.001	43.98	541.251
Actual generation	gwh	0	0.081	0.027	0	0.054	0.027	0.081	0.055	0	1.05	0	0	1.375
Percent max generation		0	0	0	0	0	0	0	0	0	2	0	0	0
Average kwh/af		0	270	270	0	270	270	270	275	0	276	0	0	275
Alcova Power Plant														
Turbine Release	kaf	97.5	0	0	31.2	26.8	26.2	26.7	27.8	121.7	157.3	105.7	38.5	659.4
Bypass	kaf	0	35.2	37	0	0	0	0	0	0	0	0	0	72.2
Maximum generation	gwh	19.402	0	0	28.546	24.888	27.316	26.309	27.552	26.656	27.552	27.552	26.656	262.429
Actual generation	gwh	8.564	0	0	4.243	3.645	3.569	3.689	3.892	17.038	22.022	14.798	5.39	86.85
Percent max generation		44	0	0	15	15	13	14	14	64	80	54	20	33
Average kwh/af		88	0	0	136	136	136	138	140	140	140	140	140	132

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Glendo Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	22.8	12.4	166.3	231.3	221.4	91.6	745.8
Bypass	kaf	1.9	1.8	1.7	1.9	1.7	2.1	1.5	1.5	1.5	62.8	40.9	1.5	120.8
Maximum generation	gwh	0	0	0	0	0	0	25.443	27.924	27.271	25.312	20.936	15.788	142.674
Actual generation	gwh	0	0	0	0	0	0	2.554	1.442	19.439	25.312	20.936	6.953	76.636
Percent max generation		0	0	0	0	0	0	10	5	71	100	100	44	54
Average kwh/af		0	0	0	0	0	0	112	116	117	109	95	76	103
Guernsey Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	22.8	21.4	51.8	53.5	56.5	53.9	259.9
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	115.2	239.8	224.3	50.1	632.6
Maximum generation	gwh	0	0	0	0	0	0	3.606	3.794	3.671	3.801	3.619	2.221	20.712
Actual generation	gwh	0	0	0	0	0	0	1.575	1.518	3.671	3.801	3.619	2.221	16.405
Percent max generation		0	0	0	0	0	0	44	40	100	100	100	100	79
Average kwh/af		0	0	0	0	0	0	69	71	71	71	64	41	63

Flood Benefits for Water Year 2021

DAMS	WATER YEAR 2021	PRIOR TO 2021 [2]	ACCUMULATED TOTAL [1]
SEMINOE	$0	$103,023,400	$103,023,400
PATHFINDER	$0	$36,824,300	$36,824,300
ALCOVA	$0	$3,438,900	$3,438,900
GLENDO	$40,000	$254,717,700	$254,757,700
TOTAL	$40,00010	$398,004,300	$398,044,300

1 - This data is received from the Army Corps of Engineers Omaha District Office and is revised every October.

2 - The period of assessment is 1970 through 2020 except for Glendo Dam, which is 1964 through 2020.

Generation for Water Year 2020

Power generation was below average for Fremont Canyon and Alcova powerplants; all others were above average in WY 2020. See Table 11 for a breakdown of generation by powerplant.

Powerplant	Gross generation[1] (GWh)	Average Gross generation[2] (GWh)	Percent of Average [2]
Seminoe	103.6	126.8	82
Kortes	132.7	133.1	100
Fremont Canyon	177.1	215.0	82
Alcova	89.7	106.9	84
Glendo	70.8	82.7	86
Guernsey	15.0	17.1	87
Total Basin	588.9	681.6	86

1 - Generation is reported in giga-watt hours (GWh).
2 - 30-year average (1992-2021).

The number of generation units at each powerplant, their capacity, and output at rated head is shown in Table 12.

Powerplant	Number of Units	Capacity Each Unit (kw)	Total [2] Installed Capacity (kw)	Normal Operating Head (feet)	Output At rated Head (cfs)	30-year Average [1] (GWh)
Seminoe	3	15,000 [3]	51,750 [3]	97-227	4,050	126.8
Kortes	3	12,000	36,000	192-204	2,910	133.1
Fremont Canyon	2	33,400	66,800	247-363	3,080	215.0
Alcova	2	19,500	41,400	153-165	4,100	106.9
Glendo	2	19,000	38,000	73-156	3,400	82.7
Guernsey	2	3,200	6,400	89-91	1,340	17.1
Total	14	---	237,200	---	---	681.6

1 1992-2021
2 Installed capacity from Monthly Report of Power Operations-Powerplant (Form PO&M 59)
3 A Mechanical restriction allows a 42,000-kw generation, 12,000 kws per unit.

Proposed Operations for Water Year 2022

Three operation studies were developed for the System to establish an AOP for WY 2022. Each of the studies conformed to the established operating criteria but used different inflow conditions and different demand conditions.

The three inflow conditions were determined from a statistical analysis of historic inflows and were labeled reasonable minimum, reasonable maximum, and reasonable expected inflow estimates. The reasonable expected inflow is based on long-term averages and approximates a 50 percent chance of occurrence. The three studies for WY 2022 are summarized numerically in Tables 15, 16, and 17.

The AOP, as developed and reflected in the three studies, provides the flexibility to adjust operations as conditions change during the water year. Forecasts of the April-July reservoir inflow will be made at the beginning of each month for February through May. Projected operating schedules will be adjusted, as required, throughout the water year as changes occur in the forecasted inflows, irrigation demands, maintenance schedules, and power loads.

The total storage in mainstem reservoirs on the North Platte River in Wyoming (including Kortes Reservoir and Gray Reef Reservoir) was 1,260,470 AF at the beginning of the WY 2022. This amount was 86 percent of the 30-year average (1992-2021) and 45 percent of active conservation capacity.

Seminoe Reservoir

Most Probable Condition – WY 2021

October through March - Seminoe Reservoir has a storage of 822,688 AF at the beginning of WY 2021, which is 136 percent of the 30-year average and 81 percent of active conservation capacity. Planned turbine releases from Seminoe Reservoir are approximately 530 cfs for October and November with an increase to 950 cfs in December to fill Alcova back to the winter operation level. Upon completion of the refilling of Alcova Reservoir, the flows will be set back to the 530 cfs winter release. March releases will be increased to approximately 1,700 cfs in anticipation of the spring runoff. Reservoir storage would decrease to about 544,000 AF by March 31, 2021. The releases are based on an estimated Seminoe inflow for the October through March period of 183,300 AF. The planned Seminoe and Kortes release of 530 cfs for October through March is required to maintain a minimum flow of at least 500 cfs in the Miracle Mile reach of the river.

April through September - Turbine releases are expected to be 2,000 cfs for April and 2,300 cfs for May, 2,600 cfs for June, then decrease to 2,400 cfs in July, and 530 cfs for August and September. There is no bypass expected in the most probable scenario. Seminoe Reservoir storage will reach a maximum of 777,200 AF by the end of June. Projected carryover storage of about 691,100 AF at the end of the water year would be 113 percent of average and 68 percent of active conservation capacity.

Reasonable Minimum Condition – WY 2021

October through March - Seminoe Reservoir has a storage of 822,688 AF at the beginning of WY 2020, which is 136 percent of the 30-year average and 81 percent of active conservation capacity. Planned turbine releases from Seminoe Reservoir are approximately 530 cfs for October and November with an increase to 950 cfs in December to fill Alcova back to the winter operation level. Upon completion of the refilling of Alcova Reservoir the flows will be set back to the 530 cfs winter release. April releases will be increased to approximately 650 cfs to move water downstream in anticipation of the irrigation season. A release of at least 500 cfs is required to maintain the minimum flow in the Miracle Mile reach of the river. Under this condition, inflows are predicted to be 151,800 AF for the period, which is 31,500 AF less than the most probable condition. March 31 reservoir content is expected to be approximately 586,100 AF.

April through September - Seminoe water releases will be at 630 cfs through April, increasing to 2,550 cfs in May, and decreasing to approximately 1,900 cfs in June. Releases will decrease to 950 cfs in July and August and decreased further to 800 in September. Under the minimum condition scenario, the June content will be approximately 569,500 AF, and the water year will end with a content of 454,700 AF which is 45 percent of average and 58 percent of active conservation capacity.

Reasonable Maximum Condition – WY 2021

October through March - Planned water releases for this period under a reasonable maximum inflow condition are similar to the most probable condition as water is moved downstream to generate power and evacuate storage in Seminoe Reservoir to capture spring runoff. Although inflows to Seminoe Reservoir are higher under these conditions, actual changes in winter operations are made gradually until it is evident that the inflow quantities being observed are showing a trend towards the maximum inflows for the water year. October through March inflows under this condition would be 215,900 AF, which is 32,600 AF more than the most probable runoff condition. The reservoir content would increase from 564,100 AF at the end of March to 950,000 AF by the end of June under these conditions.

April through September - Seminoe Reservoir release for March will be approximately 1,920 cfs, then releases will increase to about 3,850 cfs in April, 4,390 cfs in May, and back down to 3,790 cfs in June. Releases will then decrease to approximately 3,380 cfs in July, 1,750 cfs for August, and 1,150 cfs for September. Inflows for the April through July period will be approximately 1,346,400 AF, which is 584,00 AF more than the most probable runoff condition. Seminoe Reservoir will reach its maximum end-of-month content for the year in June and July with approximately 950,000 AF in storage. This plan of operation would result in an end-of-year carryover storage of 857,000 AF, which would be 140 percent of average and 84 percent of active conservation capacity. Figure 12 depicts a comparison of Minimum, Most Probable, and Maximum Seminoe Inflows. Figure 13 depicts a comparison of Minimum, Most Probable, and Maximum Seminoe Storage.

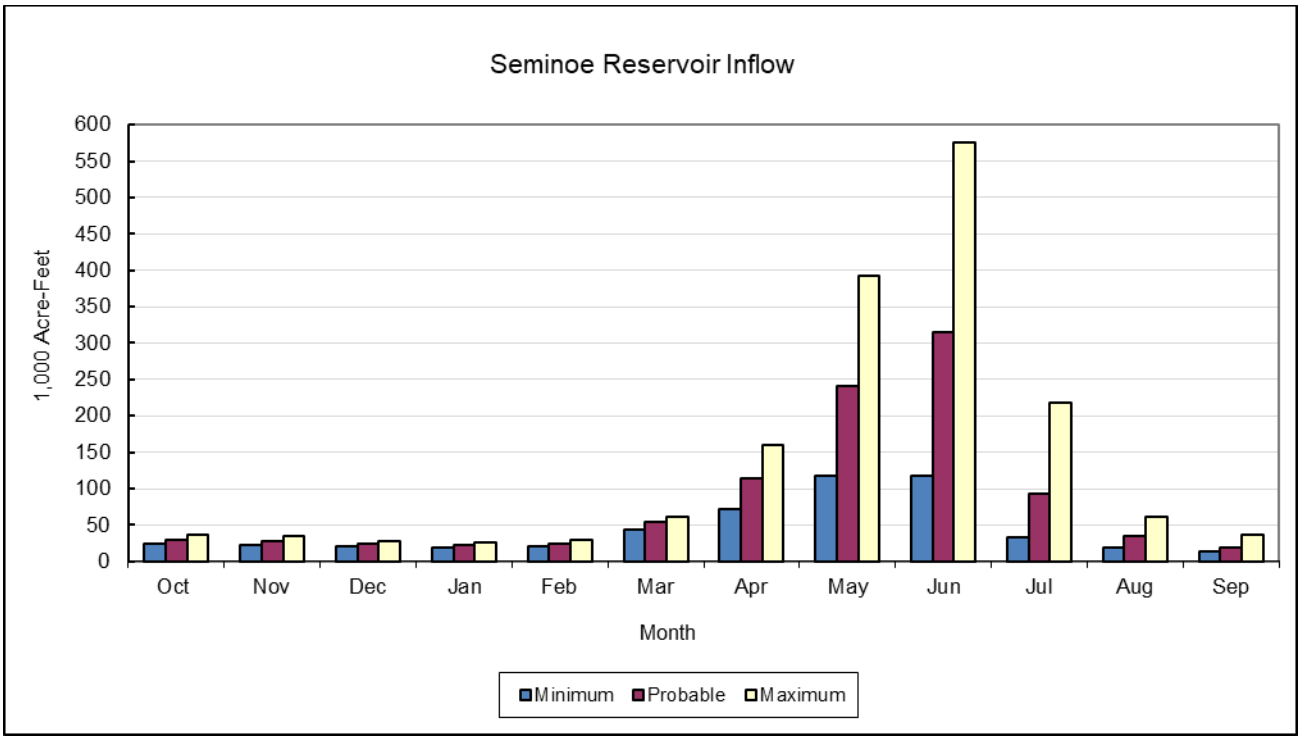

Figure 12: Seminoe Reservoir Inflow (Predicted for Water Year 2021).

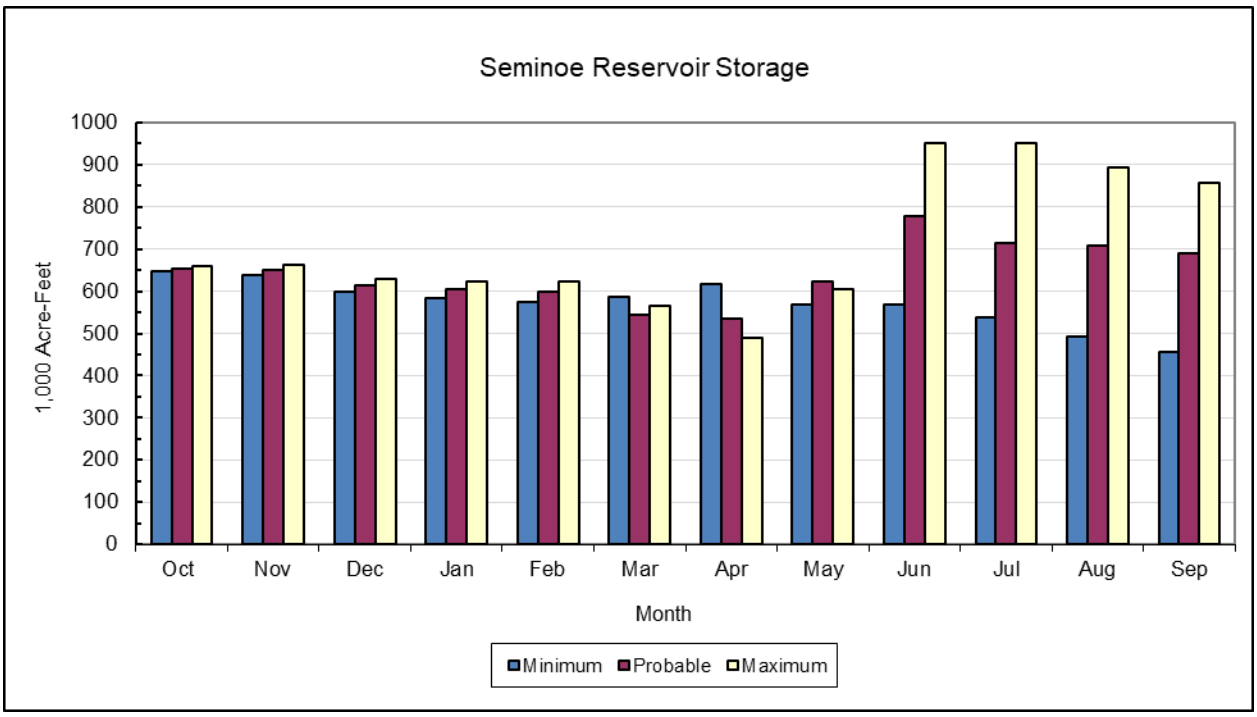

Figure 13: Seminoe Reservoir Storage (Predicted for Water Year 2021).

Pathfinder Reservoir

Most Probable Condition – WY 2021

October through March - Pathfinder Reservoir had a storage of 650,503 AF at the beginning of WY 2021, which is 106 percent of the 30-year average and 61 percent of active conservation capacity. Under this condition, gains to the river between Kortes and Pathfinder Dams, including the Sweetwater River, are expected to be 31,600 AF for the October through March period. Fremont Canyon Powerplant releases will be reduced during October to allow Alcova Reservoir water surface level to be lowered to 5,460.00 feet to conduction repairs on the Alcova Spillway. Upon completion of the Alcova Spillway repairs, releases in December will be increased to return Alcova Reservoir to its normal winter operation level of 5,488 +/- 1 foot. After the Alcova winter operating range is reached, releases from Pathfinder Reservoir will be adjusted to meet Gray Reef Reservoir releases and maintain the Alcova Reservoir content between 153,800 and 158,300 AF. Pathfinder Reservoir storage is projected to be about 747,300 AF at the end of March.

April through September - Pathfinder Reservoir storage will reach a maximum content of about 876,200 AF by the end of May and be drawn down to a storage content of about 691,300 AF by the end of the water year, which would be 132 percent of average. River gains between Kortes and Pathfinder Dams, including the Sweetwater River, are estimated at about 73,000 AF for the April through July period. In April, Fremont Canyon Powerplant releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 + 1 foot.

April through September - Fremont Canyon power releases will be scheduled to meet downstream irrigation deliveries and maintain Alcova Reservoir within the summer operating range. Pathfinder Reservoir water releases will increase in April to approximately 1,000 cfs, 1,750 cfs in May, 2,975 cfs in June and 3,250 cfs in July. Releases will decrease to 1,750 cfs for August, and approximately 975 cfs in September.

Reasonable Minimum Condition – WY 2021

October through March - Under this condition, river gains between Kortes and Pathfinder Dams, including the Sweetwater River, are expected to be 14,600 AF for the October through March period. Pathfinder Reservoir storage will decline to about 656,600 AF by the end of March. Fremont Canyon Powerplant releases for the period will be scheduled to maintain approximately 156,000 AF of water in Alcova Reservoir.

April through September - River gains between Kortes and Pathfinder Dams, including the Sweetwater River, are estimated at about 18,800 AF for the April through July period under reasonable minimum inflow conditions. In April, releases will be coordinated with Alcova releases to refill Alcova Reservoir to its normal summer operating range of 5,498 ft + 1 foot by the end of April.

April through September - Fremont Canyon power releases will be scheduled to meet downstream irrigation deliveries and maintain a storage content of approximately 179,400 AF in Alcova Reservoir. The highest Pathfinder Reservoir summer releases will be approximately 3,300 cfs, during July, and then reduced as irrigation demands drop off to end the water year at approximately 975 cfs during September. If reasonable minimum runoff develops, Pathfinder reservoir content at the end of the water year will be about 303,600 AF, which would be 58 percent of average and 28 percent of active conservation capacity.

Reasonable Maximum Condition – WY 2021

October through March - Under this condition, river gains between Kortes and Pathfinder Dams are expected to be 49,200 AF for the period. Pathfinder Reservoir content increases through this period from 650,503 AF at the end of October to 776,700 AF by the end of March.

April through September - In April, water releases from Fremont Canyon Powerplant will be increased as Alcova Reservoir is refilled to water surface elevation 5,498 + 1 foot. The rate of release will be increased through the summer as needed to meet downstream irrigation demands. Pathfinder Reservoir would reach a maximum content of 1,070,000 AF at the end of June. Releases will increase to approximately 2,550 cfs in April, 2,375 cfs in May and peaking at 4,250 cfs in June and decreased to 3,925 cfs in July. They will decrease to approximately 3,875 cfs in August and 2,090 cfs in September. The Pathfinder Reservoir end of year storage content is projected to be about 856,900 AF, which would be 164 percent of average, and 80 percent of capacity.

Under all three possible inflow conditions, a constant release of 75 cfs is planned from the Pathfinder Dam outlet works which will provide the necessary water to maintain a year-round fishery in the North Platte River below Pathfinder Reservoir. The maximum plan will require a bypass March through August from the jet flow gates below Pathfinder Dam.

Figure 14 depicts a comparison of minimum, most probable, and maximum river gains from Kortes Dam to Pathfinder Reservoir. Figure 15 depicts a comparison of minimum, most probable, and maximum Pathfinder storage.

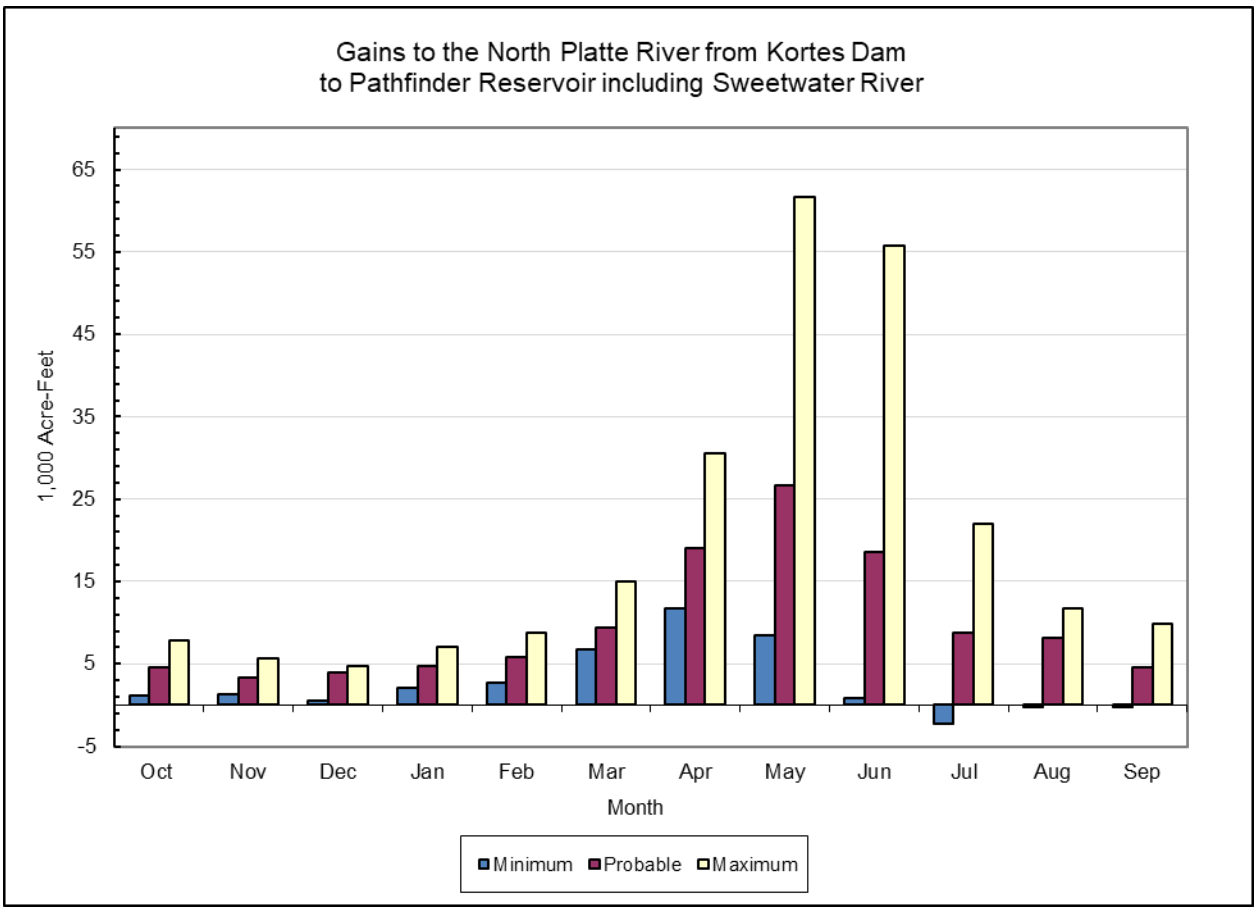

Figure 14: Gains to the North Platte River from Kortes Dam to Pathfinder Reservoir (Predicted for Water Year 2021).

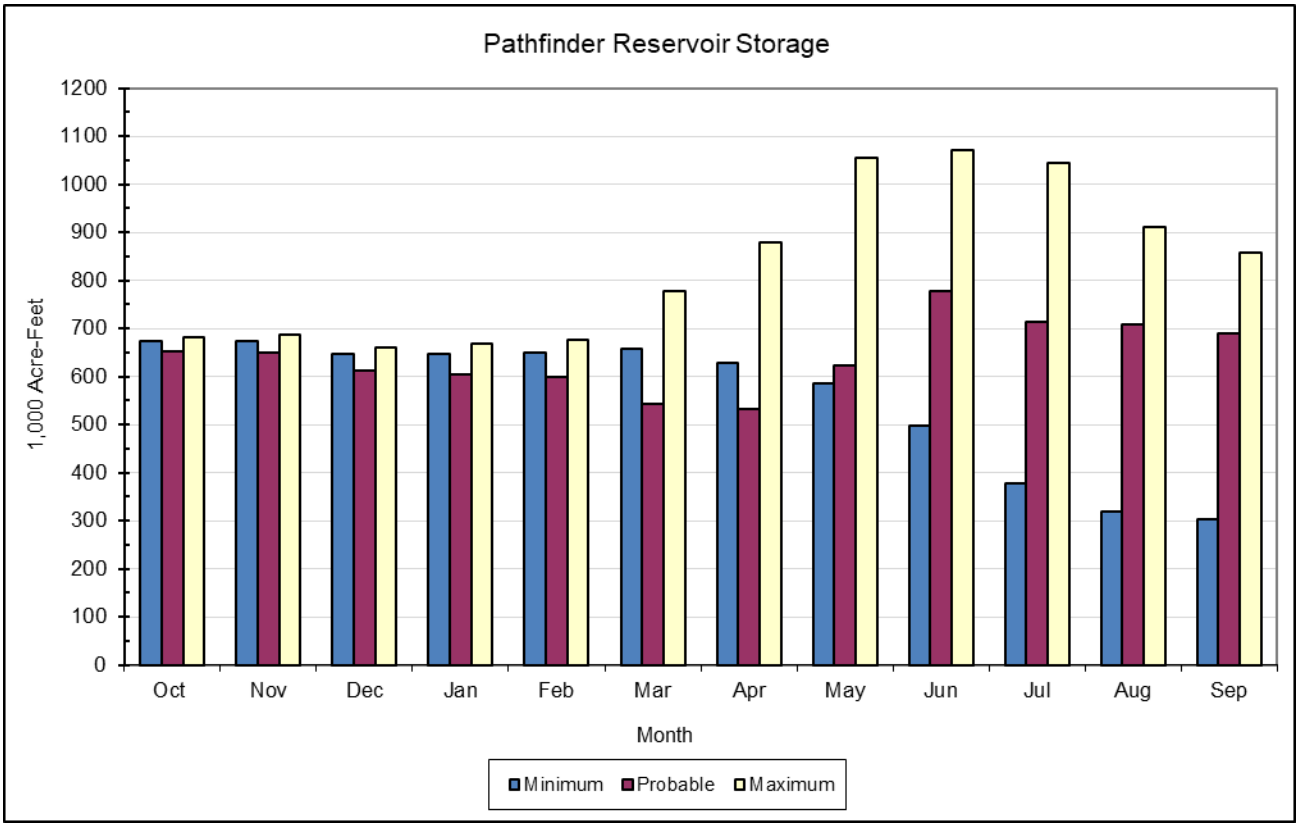

Figure 15: Pathfinder Reservoir Storage (Predicted for Water Year 2021).

Alcova Reservoir

Most Probable Condition – WY 2021

October through March - During October through December, Alcova Reservoir will be drawn down to elevation 5,459.00 feet to conduct repairs on the Alcova Reservoir spillway (the normal winter operating range of 5,488.0 + 1 foot). October 1 the release from Alcova Reservoir will be increased to lower Alcova Reservoir to elevation 5,459.00 feet to conduct repairs on the Alcova Reservoir Spillway. Upon completion of the spillway repair on December 19, 2020, release from the upper system will be increased to fill Alcova Reservoir back to its normal reservoir elevation of 5,488 +/- 1 foot by January 3, 2021 and will be maintained at the this elevation through March. The October releases for WY 2021 will be increased to a maximum release of approximately 2,800 cfs to lower the reservoir to 5,459.00 feet, once the reservoir reaches elevation 5,459.00 feet the releases will be returned back to the normal winter release of 500 cfs. The normal releases will be used for production of power, maintenance of fishery flows, pollution abatement, and transfer of water to Glendo Reservoir in preparation for meeting downstream irrigation demands during the coming irrigation season. Provisions have been made in the plan to increase the releases from Alcova during March for a flushing flow below Gray Reef Reservoir.

April through September - During April, the reservoir will be refilled to water surface elevation 5,498 feet (179,400 AF). This level will be maintained within + 1 foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes.

Approximately 65,900 AF of water are scheduled to be delivered during the May-September period to meet Kendrick Project irrigation requirements. In addition, April releases to the river are scheduled to be approximately 34,700 AF and May-September releases to the river from Alcova Reservoir will total approximately 651,700 AF which will be re-regulated in Gray Reef Reservoir.

Reasonable Minimum Condition – WY 2021

October through September - Operation of Alcova Reservoir would be the same as under the most probable condition, with about 65,900 AF of water scheduled to be delivered during the May through September period to meet Kendrick Project irrigation requirements. April releases are scheduled to be approximately 47,600 AF and May through September releases to the North Platte River from Alcova Reservoir will total approximately 730,000 AF. Water released from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

Reasonable Maximum Condition – WY 2021

October through September - Operation of Alcova Reservoir would be the same as under the most probable condition, with about 65,900 AF of water are scheduled to be delivered during the May through September period to meet Kendrick Project irrigation requirements. March releases will be approximately 30,700 AF, and April releases will be approximately 127,500 AF. May through September releases to the North Platte River from Alcova Reservoir will total approximately 996,700 AF. Figure 16 depicts a comparison of minimum, most probable, and maximum Alcova storage.

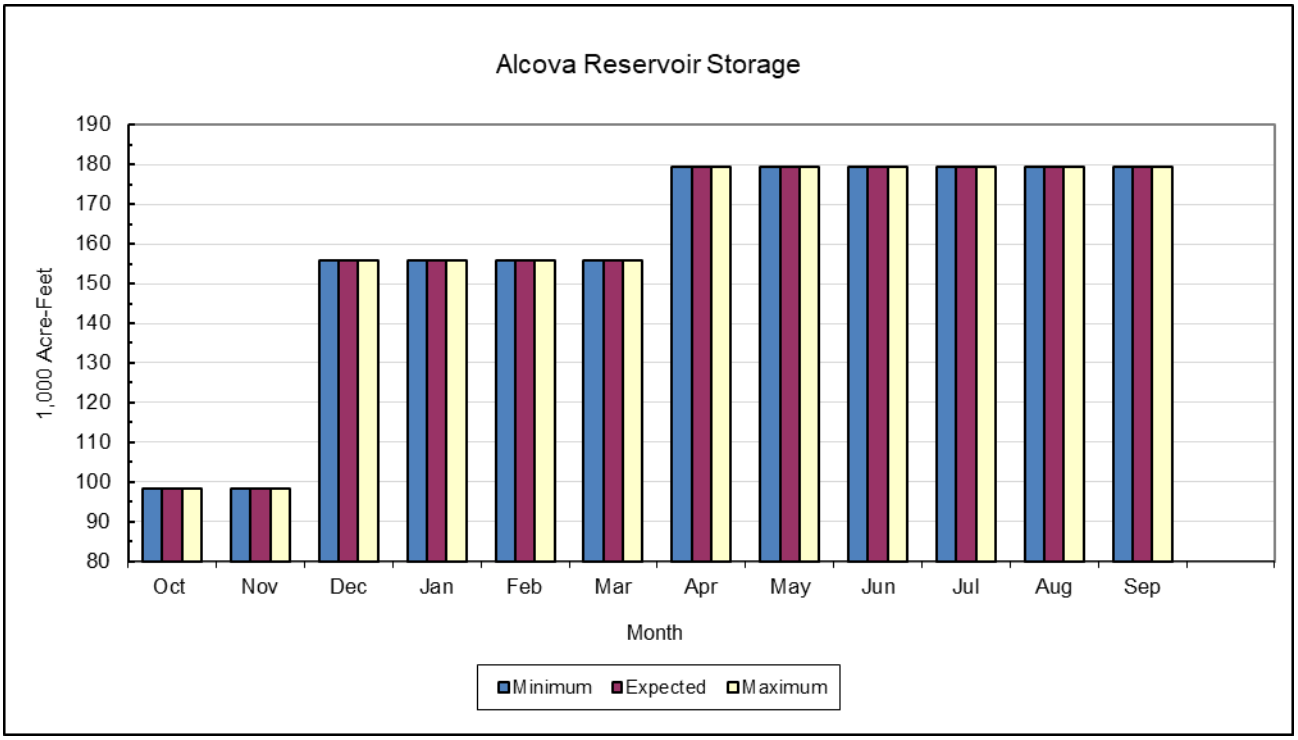

Figure 16: Alcova Reservoir Storage (Predicted for Water Year 2021).

Gray Reef Reservoir

Most Probable Condition – WY 2021

October through March - October 1 the release from Gray Reef Reservoir will be increased to lower Alcova Reservoir to elevation 5,459.00 feet to conduct repairs on the Alcova Reservoir Spillway. Upon completion of lowering Alcova to elevation 5,459.00 feet, the release from Gray Reef Reservoir will be return to its normal release of 500 cfs from the end of October through March. A flushing flow is planned below Gray Reef Dam during March.

April through September - Releases from Gray Reef Reservoir will increase to 800 cfs for April, 1,575 cfs for May, 2,725 cfs in June, and 3,000 cfs in July. Grey Reef Releases will then be decreased to 1,600 cfs in August, and 800 cfs in September.

Reasonable Minimum Condition – WY 2021

October through March - Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through March.

April through September - Releases from Gray Reef Reservoir will be approximately 800 cfs in April, 3,115 cfs in May, 3,035 cfs in June, then decreased to an average release of 2,420 cfs in July, 1,550 cfs in August, and 800 cfs in September. These predicted flows may be redistributed as the irrigators adjust their use of water from storage.

Reasonable Maximum Condition – WY 2021

October through March - Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through March and increasing to 2,140 cfs in April.

April through September - The release from Gray Reef Reservoir will increase to approximately 2,140 cfs in April, 2,200 cfs May, 4,000 cfs June. The July and August releases will decrease to approximately 3,600 cfs, and 1,915 cfs for September.

Glendo and Guernsey Reservoirs

Most Probable Condition – WY 2021

October through March - Glendo Reservoir had a storage of 166,353 AF at the beginning of WY 2021, which is 127 percent of average and 34 percent of active conservation capacity of 492,022 AF. Glendo Reservoir storage will increase to approximately 426,600 AF by the end of March, which will be 111 percent of average and 87 percent of active conservation capacity.

A new area capacity table for Glendo Reservoir, based upon a recent silt survey was applied on September 30, 2012. This resulted in a reduced capacity with the top of active conservation being 492,022 AF at elevation 4,635 feet.

Guernsey Reservoir had storage of 6,001 AF at the beginning of WY 2021, which is 122 percent of average and 13 percent of active conservation capacity. Natural inflow will be stored during the winter which is expected to increase storage to 20,900 AF by March 31.

April through September - During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Maximum Glendo Reservoir storage will be about 492,000 AF by the end of June. Releases from Glendo Reservoir during the May through September period will be based upon meeting irrigation demand.

Guernsey Reservoir content will be maintained near 28,000 AF by the beginning of May through August. A silt run in July will require close coordination of Glendo and Guernsey release schedules as Guernsey Reservoir is drawn down to about 1,000 AF in July during the silt run and will be refilled to approximately 28,000 AF following the silt run. Releases for delivery of irrigation water will draw down Glendo Reservoir to about 100,000 AF by the end of September.

Reasonable Minimum Condition – WY 2021

October through March - Guernsey Reservoir had a storage of 6,001 AF at the beginning of WY 2021. Under the reasonable minimum inflow conditions, natural inflow will be stored during the winter which will increase the Guernsey Reservoir content to 18,800 AF by the end of March. Glendo Reservoir content will increase from the carryover storage of 166,353 AF to an end of March content of 405,200 AF.

April through September - During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Glendo Reservoir storage will increase to about 441,100 AF by the end of April.

The operation of Glendo and Guernsey Reservoirs will be based upon making full irrigation deliveries to the Glendo Unit and approximately 100 percent of normal deliveries to North Platte Project. The total combined North Platte System reservoir storage would be approximately 624,100 AF lower than most probable conditions by the end of the water year under reasonable minimum water supply conditions.

Guernsey Reservoir content will be maintained near 28,000 AF during April through August. A silt run in July will require close coordination of Glendo and Guernsey release schedules. September releases will be made to meet irrigation requirements leaving 100,000 AF of water in Glendo Reservoir at the end of September. Guernsey Reservoir content will be 1,000 AF at the end of September.

Reasonable Maximum Condition – WY 2021

October through March - Guernsey Reservoir had a storage of 6,001 AF at the beginning of WY 2021. Natural inflow will be stored during the winter which will increase Guernsey Reservoir content to 20,900 AF by the end of March. Glendo Reservoir content is expected to increase from the starting content of 135,044 AF to an end of March content of 437,800 AF.

April through September - Under maximum conditions, reregulation water will be released as natural flow to meet irrigation demands until the supply is used as required. An annual total of 1,796,900 AF of water will be released from Guernsey Reservoir. Guernsey Reservoir will maintain a content of 28,000 AF in April and remain at that level through August. Under reasonable maximum conditions Glendo Reservoir will increase to peak storage of 492,000 AF in June. During September, releases will be scheduled to lower Guernsey Reservoir to approximately 1,000 AF.

The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo storage is projected to decrease to about 340,800 AF by the end of July and will be about 100,000 AF by the end of September. End of year Glendo storage would be 75 percent of average and the Total System storage at the end of the water year would be 2,000,000 AF, 149 percent of average.

Figure 17 depicts a comparison of minimum, most probable, and maximum river gains from Alcova Dam to Glendo Reservoir. Figure 18 depicts a comparison of minimum, most probable, and maximum Glendo Reservoir Storage.

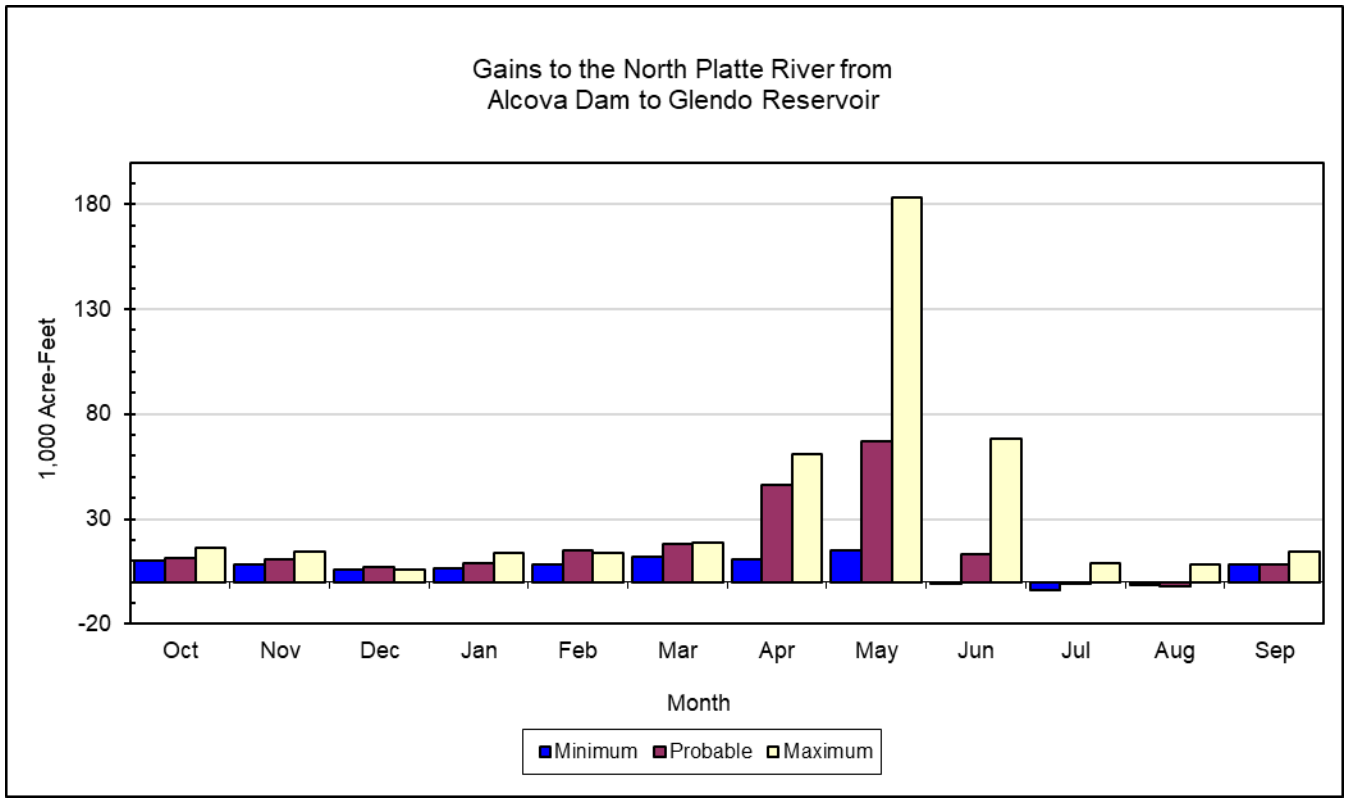

Figure 17: Gains to North Platte River from Alcova Dam to Glendo Reservoir (Predicted for Water Year 2021).

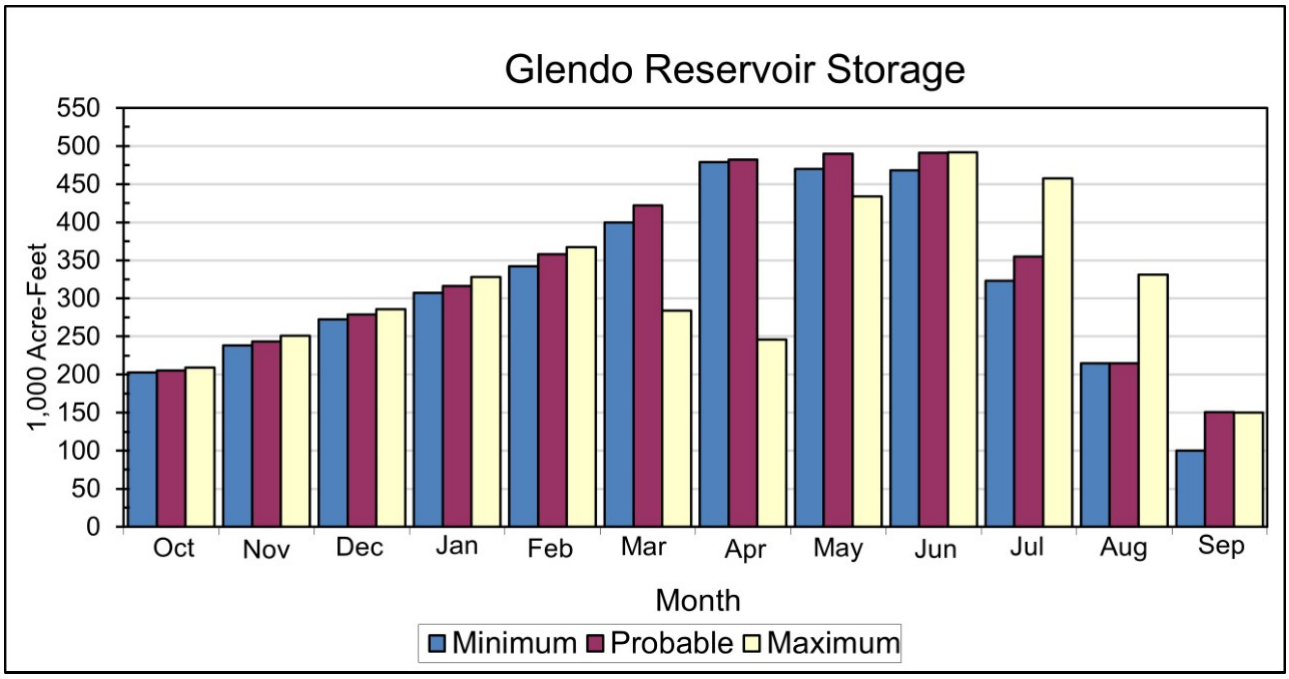

Figure 18: Glendo Reservoir Storage (Predicted for Water Year 2021).

Ownerships

Under reasonable maximum inflow conditions all storage water ownerships, in the North Platte River system, will fill during the WY 2021.

Figure 19 depicts a comparison of minimum, most probable, and maximum, Kendrick, North Platte Project, and Glendo Project Ownerships at the end of WY 2021.

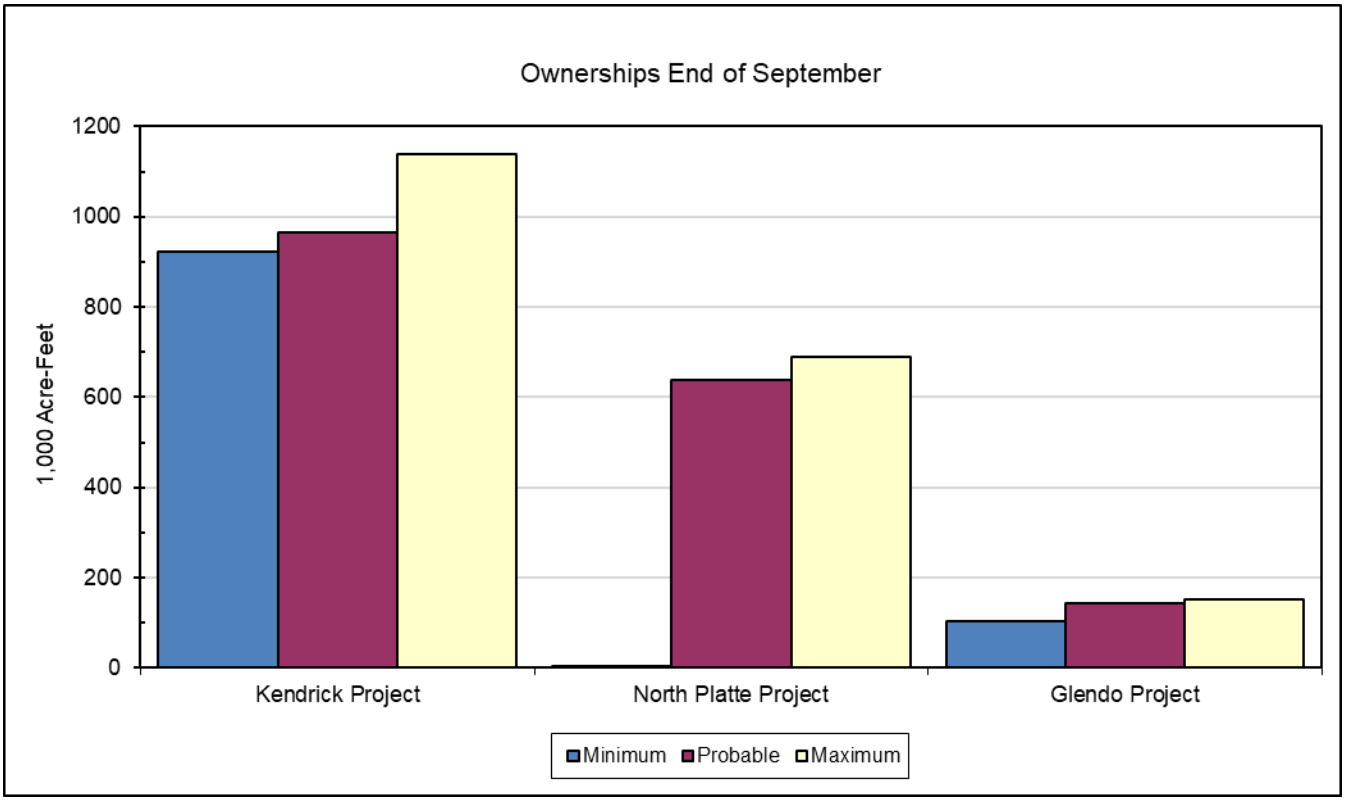

Figure 19: Ownerships at the End of September (Predicted for Water Year 2021).

Most Probable Generation Water Year 2021

The most probable power generation breakdown for each powerplant.

Table 22: 2021 Powerplant generation predicted for the most probable inflow scenario

Powerplant	Gross generation [1](GWh)	Percent of Average [2]
Seminoe	115.935	92
Kortes	158.754	120
Fremont Canyon	202.915	94
Alcova	106.191	100
Glendo	93.586	113
Guernsey	19.017	111
Total Basin	**696.398**	**120**

1 - Gross generation is based on October 2021 storage and most probable inflow. Gross generation is reported in giga-watt hours (GWh).

2 – 30-year average (1991-2020).

The Facilities Management Division creates a schedule of maintenance for all generating units. See Table 14 for the maintenance schedule for WY 2021.

Table 23: Proposed Generating Unit Maintenance Schedule (October 2020 through September 2021)

Facility and Unit No.	Scheduled Period	Description of Work
Seminoe Unit #1	2020-12-14 through 2021-01-17	Annual Maintenance
Seminoe Unit #2	2020-11-23 through 2020-12-17	Annual Maintenance
Seminoe Unit #3	2020-10-19 through 2020-11-26	Annual Maintenance
Kortes Unit #1	2020-10-19 through 2020-11-18	Annual Maintenance
Kortes Unit #2	2020-11-23 through 2020-12-17	Annual Maintenance
Kortes Unit #3	2021-01-25 through 2021-04-01	Annual Maintenance
Fremont Unit #1	2020-10-05 through 2020-11-16	Annual Maintenance
Fremont Unit #2	2020-11-24 through 2021-01-07	Annual Maintenance
Alcova Unit #1	2021-01-11 through 2021-02-25	Annual Maintenance
Alcova Unit #2	2021-03-08 through 2021-04-21	Annual Maintenance
Glendo Unit #1	2020-11-03 through 2020-12-04	Annual Maintenance
Glendo Unit #2	2021-01-11 through 2021-02-08	Annual Maintenance
Guernsey Unit #1	2020-12-04 through 2021-01-07	Annual Maintenance
Guernsey Unit #2	2021-02-08 through 2021-03-04	Annual Maintenance

Appendix A: Operating Plans for Water Year 2021

Table 24: 2021 hydrologic operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Reservoir (Initial content: 658.6 KAF)														
Total Inflow	kaf	29.9	28.2	24.6	22.9	24.3	53.4	113.5	240.6	314.5	93.8	34.5	18.9	999.1
Total Inflow	cfs	486	474	400	372	438	868	1907	3913	5285	1526	561	318	NA
Turbine Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	0	0	0	709.8
Jetflow Release	kaf	0	0	0	0	0	0	0	0	0	147.6	34.2	31.5	213.3
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923.1
Total Release	cfs	532	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Evaporation	kaf	4	2.2	1.2	1	1	2.1	3.9	4.1	7.8	9.1	7.4	5.5	49.3
End-month content	kaf	652.5	649.5	613.7	603.5	598	544	533.7	624.1	777.2	714.9	708.5	691.1	NA
End-month elevation	ft	6335.7	6335.5	6332.9	6332.2	6331.7	6327.5	6326.7	6333.7	6343.9	6340	6339.5	6338.4	NA
Kortes Reservoir (Initial content: 4.7 KAF)														
Total Inflow	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923.1
Total Inflow	cfs	532	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Turbine Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Total Release	cfs	530	529	974	530	529	1726	2020	2321	2600	2400	556	529	NA
Min Reservoir Release	cfs	530	530	974	530	530	1726	2020	2321	2200	2000	528	528	NA
Max Reservoir Release	cfs	530	530	975	530	530	1725	2020	2320	2600	2400	2000	530	NA
Pathfinder Reservoir (Initial content: 650.5 KAF)														
Sweetwater Inflow	kaf	3.2	3.5	3.5	3.7	3.8	5	12.6	18.1	15.9	4.8	2.1	1.2	77.4
Kortes-Path Gain	kaf	1.3	-0.2	0.4	1	2	4.4	6.4	8.6	2.7	3.9	6.1	3.3	39.9
Inflow from Kortes	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	kaf	37.1	34.8	63.8	37.3	35.2	115.5	139.2	169.4	173.3	156.3	42.4	36	1040.3
Total Inflow	cfs	603	585	1038	607	634	1878	2339	2755	2912	2542	690	605	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	54.5	102.5	163.6	169.1	110.8	53.6	730.7
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	13.3	31.6	4.6	4.5	199.6
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	59	107.1	176.9	200.7	115.4	58.1	930.3
Total Release	cfs	75	506	1438	503	504	506	992	1742	2973	3264	1877	976	NA
Evaporation	kaf	4.5	2.5	1.4	1.3	1.2	2.9	6	7.6	11.5	12.4	10.4	7.5	69.2
End-month content	kaf	678.5	680.7	654.7	659.8	665.8	747.3	821.5	876.2	861.1	804.3	720.9	691.3	NA
End-month elevation	ft	5832.5	5832.7	5831	5831.4	5831.7	5836.6	5840.6	5843.4	5842.7	5839.7	5835	5833.3	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	75	224	514	75	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
Alcova Reservoir (Initial content: 179.8 KAF)														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	59	107.1	176.9	200.7	115.4	58.1	930.3
Total Inflow	cfs	75	506	1438	503	504	506	992	1742	2973	3264	1877	976	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	795.1
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	34.7	106.1	175.5	199.1	114	57	921.5
Total Release	cfs	1389	501	499	499	501	499	583	1726	2949	3238	1854	958	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
Gray Reef Reservoir (Initial content: 1.2 KAF)														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	855.6
Total Inflow	cfs	1389	501	499	499	501	499	583	1571	2726	2940	1602	802	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.1	180.7	98.4	47.6	855.3
Total Release	cfs	1391	501	499	499	501	499	583	1571	2724	2939	1600	800	NA
Min Reservoir Release	cfs	500	500	500	500	500	500	500	500	500	500	800	500	NA
Max Reservoir Release	cfs	1500	500	500	500	500	500	583	1571	2725	3600	1600	800	NA

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Glendo Reservoir (Initial content: 135 KAF)														
Alcova-Glendo Gain	kaf	11.4	10.9	7.3	9	15.2	18.3	46.3	67.2	13.5	-0.1	-2.3	8.5	205.2
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	34.7	96.6	162.1	180.7	98.4	47.6	855.3
Total Inflow	kaf	96.9	40.7	38	39.7	43	49	81	163.8	175.6	180.6	96.1	56.1	1060.5
Total Inflow	cfs	1576	684	618	646	774	797	1361	2664	2951	2937	1563	943	NA
Turbine Release	kaf	0	0	0	0	0	0	11	156.9	167.3	231.4	221.4	129.1	917.1
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	17.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	0	0	0	80.2	41.8	0	122
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	12.5	158.4	168.8	313.1	264.7	130.5	1056.9
Total Release	cfs	24	25	24	24	25	24	210	2576	2837	5092	4305	2193	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.4	5.1	7	7	4.7	2.3	36.3
End-month content	kaf	229.1	267.4	303.1	340.4	381	426.6	491.7	492	491.8	351.9	176.7	100	NA
End-month elevation	ft	4607	4612	4616.3	4620.5	4624.8	4629.2	4635	4635	4635	4621.8	4599.2	4584.1	NA
Guernsey Reservoir (Initial content: 4.5 KAF)														
Glendo-Guerns Gain	kaf	3.3	2	1.8	1.5	1.1	0.7	5.1	9.2	3	2.3	0.6	5	35.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	12.5	158.4	168.8	313.1	264.7	130.5	1056.9
Total Inflow	kaf	4.8	3.5	3.3	3	2.5	2.2	17.6	167.6	171.8	315.4	265.3	135.5	1092.5
Total Inflow	cfs	78	59	54	49	45	36	296	2726	2887	5129	4315	2277	NA
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	1.2	112.1	116	257.6	208.3	105.7	800.9
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	166.9	170.8	314.3	264.4	162	1090
Total Release	cfs	5	3	5	5	4	5	168	2714	2870	5112	4300	2722	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	8.8	11.9	14.7	17.2	19.3	20.9	28	28	28	28	28	1	NA
End-month elevation	ft	4399.1	4402	4404.1	4405.8	4407.1	4408.1	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Content	kaf	1673.2	1713.8	1748	1782.7	1825.9	1900.6	2060.2	2205.6	2343.4	2084.4	1819.4	1668.7	NA

Table 25: 2021 ownership operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
North Platte Pathfinder (initial ownership: 411.1 KAF)														
Net Accrual	kaf	31.8	29.9	27.5	26.6	29	60.5	127.8	205.3	120.5	0	0	0	658.9
Evaporation	kaf	2.6	1.6	1	1	1.1	2.3	4.7	6.7	12.4	14.3	10.7	6.2	64.6
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	159.9	218.4	121.1	499.4
End-month Ownership	kaf	442.9	472.8	500.3	526.9	555.9	616.4	744.2	949.5	1070	895.8	666.7	539.4	NA
North Platte Guernsey (Initial ownership: 0 KAF)														
Net Accrual	kaf	0	0	8.8	10.2	16.1	10.5	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.2	0.5	0.3	0.4	0.6	0.6	0	0	3.2
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	43.7	0	0	43.7
End-month Ownership	kaf	0	0	8.8	19	35.1	45.6	45.3	44.9	44.3	0	0	0	NA
Inland Lakes (Initial ownership: 0 KAF)														
Net Accrual	kaf	14.4	12.7	0	0	0	0	18.9	0	0	0	0	0	46
Evaporation/Seepage	kaf	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0	0	0	0	1.4
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
End-month Ownership	kaf	14.4	27.1	27	26.9	26.8	26.7	35.6	0.1	0.1	0.1	0.1	0.1	NA
Kendrick (Initial ownership: 1073.8 KAF)														
Net Accrual	kaf	0	0	0	0	0	0	0	0	19.2	0	0	0	19.2
Evaporation	kaf	7	3.9	2.4	2.2	2.1	4.4	8.1	9.4	13.4	13.9	12.1	9.2	88.1
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	9.5	0	18.3	15.5	9.3	52.6
End-month Ownership	kaf	1066.8	1062.9	1060.5	1058.3	1056.2	1051.8	1043.7	1024.8	1044	1011.8	984.2	965.7	NA
Glendo Unit (Initial ownership: 131.2 KAF)														
Accrual	kaf	0	0	0	0	0	8	32.3	0	0	0	0	0	40.3
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1.1	1.5	2.2	2.2	1.8	1.4	13
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	6	5	4	15
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	136.4	167.6	166.1	163.9	155.7	148.9	143.5	NA
Re-regulation (Initial ownership: 0 KAF)														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
End-month total	kaf	0	0	0	0	0	0	0	0	0	0	0	0	NA
City of Cheyenne (Initial ownership: 8.3 KAF)														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0	0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.9
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.7	13.3	14	14.2	10.7	11.7	12.1	12.6	13.2	NA
Pacificorp (Initial ownership: 2 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
Other (Initial ownership: 7.9 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.5	7.4	6.9	4.9	4.8	NA

Table 26: 2021 irrigation operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Kendrick (Casper Canal)														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Kendrick (River)														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Guernsey Deliveries														
North Platte Req	kaf	0	0	0	0	0	0	0	131.7	168.8	308.3	259.4	158	1026.2
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
Total Requirement	kaf	0	0	0	0	0	0	10	166.9	170.8	314.3	264.4	162	1088.4
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	166.9	170.8	314.3	264.4	162	1090
Ownership EOM Content	kaf	1673.2	1713.8	1748	1782.7	1825.9	1900.6	2060.2	2205.6	2343.4	2084.4	1819.4	1668.7	NA

Table 27: 2021 power generation operating plan for the most probable inflow scenario (762.4 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Power Plant														
Turbine Release	kaf	32.7	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	0	0	0	709.8
Bypass	kaf	0	0	0	0	0	0	0	0	0	147.6	34.2	31.5	213.3
Maximum generation	gwh	32.652	31.519	32.199	31.781	28.567	31.08	29.491	31.218	32.399	0	0	0	280.906
Actual generation	gwh	5.437	5.223	9.876	5.332	4.786	17.06	19.058	23.058	26.105	0	0	0	115.935
Percent max generation	NA	17	17	31	17	17	55	65	74	81	0	0	0	41
Average kwh/af	NA	166	166	165	164	163	161	159	162	169	0	0	0	163
Kortes Power Plant														
Turbine Release	kaf	32.6	31.5	59.9	32.6	29.4	106.1	120.2	142.7	154.7	147.6	34.2	31.5	923
Bypass	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.303	5.607	5.057	18.249	20.674	24.544	26.608	25.387	5.882	5.418	158.754
Percent max generation	NA	20	20	37	20	20	66	77	89	100	92	21	20	49
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
Fremont Canyon														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	54.5	102.5	163.6	169.1	110.8	53.6	730.7
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	13.3	31.6	4.6	4.5	199.6
Maximum generation	gwh	0	0	0	45.891	41.486	46.336	45.508	47.214	45.692	47.202	46.842	44.825	410.996
Actual generation	gwh	0	0	0	7.137	6.466	7.261	15.16	28.619	45.692	47.202	30.692	14.686	202.915
Percent max generation	NA	0	0	0	16	16	16	33	61	100	100	66	33	49
Average kwh/af	NA	0	0	0	271	272	274	278	279	279	279	277	274	278
Alcova Power Plant														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	34.7	96.6	162.2	180.8	98.5	47.7	795.1
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	4.789	13.524	22.708	25.312	13.79	6.678	106.191
Percent max generation	NA	39	0	0	15	15	15	18	49	85	92	50	25	41
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	134

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Glendo Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	11	156.9	167.3	231.4	221.4	129.1	917.1
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	81.7	43.3	1.4	139.8
Maximum generation	gwh	0	0	0	0	0	0	2.562	27.389	26.516	25.332	20.729	14.302	116.83
Actual generation	gwh	0	0	0	0	0	0	1.236	18.026	19.221	25.332	20.729	9.042	93.586
Percent max generation	NA	0	0	0	0	0	0	48	66	72	100	100	63	80
Average kwh/af	NA	0	0	0	0	0	0	112	115	115	109	94	70	102
Guernsey Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	1.6	113.3	119	260.7	210.8	106	813
Maximum generation	gwh	0	0	0	0	0	0	0.577	3.795	3.667	3.795	3.795	3.388	19.017
Actual generation	gwh	0	0	0	0	0	0	0.577	3.795	3.667	3.795	3.795	3.388	19.017
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	69	71	71	71	71	61	69

Table 28: 2021 hydrologic operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Reservoir (Initial content: 658.6 KAF)														
Total Inflow	kaf	23.6	23.1	21.3	18.8	21	44	71.5	118.3	117.7	32.3	19.1	13.4	524.1
Total Inflow	cfs	384	388	346	306	378	716	1202	1924	1978	525	311	225	NA
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	0	0	0	526
Jetflow Release	kaf	0	0	0	0	0	0	0	0	0	58.6	58.6	47.6	164.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.8
Total Release	cfs	532	529	976	530	529	530	634	2550	1894	953	953	800	NA
Evaporation	kaf	3.9	2.1	1.2	1	1	2.1	4.3	4.1	6.5	7.1	5.8	3.9	43
End-month content	kaf	646.3	638.3	599.1	584.8	576	586.1	615.9	569.9	569.5	536.7	492.1	454.7	NA
End-month elevation	ft	6335.3	6334.7	6331.8	6330.7	6330.1	6330.8	6333.1	6329.6	6329.6	6326.9	6323.1	6319.7	NA
Kortes Reservoir (Initial content: 4.7 KAF)														
Total Inflow	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.8
Total Inflow	cfs	532	529	976	530	529	530	634	2550	1894	953	953	800	NA
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Total Release	cfs	530	529	976	530	529	530	634	2550	1894	953	953	800	NA
Min reservoir Release	cfs	528	528	974	528	528	528	528	528	528	528	528	528	NA
Max reservoir Release	cfs	530	530	975	530	530	530	634	2550	3000	1700	1700	800	NA
Pathfinder Reservoir (Initial content: 650.5 KAF)														
Sweetwater Inflow	kaf	2	2.4	2.2	2.1	1.9	3.8	9.2	6.4	3.9	1.3	0.8	0.7	36.7
Kortes-Path Gain	kaf	-0.9	-1.1	-1.6	0	0.8	3	2.5	2.1	-3.1	-3.5	-1.1	-1	-3.9
Inflow from Kortes	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Total Inflow	kaf	33.7	32.8	60.6	34.7	32.1	39.4	49.4	165.3	113.5	56.4	58.3	47.3	723.5
Total Inflow	cfs	548	551	986	564	578	641	830	2688	1907	917	948	795	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	67.4	169.1	163.6	164.1	107.7	53.6	802.1
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	32.9	31.8	4.6	4.6	4.5	219.4

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	71.9	202	195.4	168.7	112.3	58.1	1021.5
Total Release	cfs	75	506	1438	503	504	506	1208	3285	3284	2744	1826	976	NA
Evaporation	kaf	4.6	2.6	1.4	1.4	1.4	2.7	5.1	5.9	7.8	7.1	5.2	3.7	48.9
End-month content	kaf	675	675.1	645.9	648.3	651	656.6	629	586.4	496.7	377.3	318.1	303.6	NA
End-month elevation	ft	5832.3	5832.3	5830.5	5830.6	5830.8	5831.2	5829.4	5826.5	5819.8	5809	5802.5	5800.8	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	535	534	75	75	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
Alcova Reservoir (Initial content: 179.8 KAF)														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	71.9	202	195.4	168.7	112.3	58.1	1021.5
Total Inflow	cfs	75	506	1438	503	504	506	1208	3285	3284	2744	1826	976	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	886.3
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	47.6	201	194	167.1	110.9	57	1012.7
Total Release	cfs	1389	501	499	499	501	499	800	3269	3260	2718	1804	958	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
Gray Reef Reservoir (Initial content: 1.2 KAF)														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	946.8
Total Inflow	cfs	1389	501	499	499	501	499	800	3114	3037	2420	1552	802	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.6	148.7	95.3	47.6	946.5
Total Release	cfs	1391	501	499	499	501	499	800	3114	3035	2418	1550	800	NA
Min reservoir Release	cfs	500	500	500	500	500	500	800	3114	3035	2418	1550	800	NA
Max reservoir Release	cfs	3000	500	500	500	500	500	800	3115	3035	3600	3600	800	NA
Glendo Reservoir (Initial content: 135 KAF)														
Alcova-Glendo Gain	kaf	10.1	8.2	5.9	6.3	8.4	11.8	10.8	15.3	-0.6	-3.7	-1.6	8.4	79.3
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	47.6	191.5	180.6	148.7	95.3	47.6	946.5
Total Inflow	kaf	95.6	38	36.6	37	36.2	42.5	58.4	206.8	180	145	93.7	56	1025.8

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	1555	639	595	602	652	691	981	3363	3025	2358	1524	941	NA
Turbine Release	kaf	0	0	0	0	0	0	17.9	150.4	171.7	229.2	221.4	83.9	874.5
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17.9
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	0	0	0	87.6	43.8	0	131.4
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	19.4	151.9	173.2	318.3	266.7	85.4	1023.8
Total Release	cfs	24	25	24	24	25	24	326	2470	2911	5177	4337	1435	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.1	4.9	7	6.7	4.2	2	34.7
End-month content	kaf	227.8	263.4	297.7	332.3	366.1	405.2	441.1	491.1	490.9	310.5	131.4	100	NA
End-month elevation	ft	4606.8	4611.5	4615.7	4619.6	4623.3	4627.2	4630.6	4634.9	4634.9	4617.2	4591	4584.1	NA
Guernsey Reservoir (Initial content: 4.5 KAF)														
Glendo-Guerns Gain	kaf	2.2	1.5	1.2	1	1.2	1.2	0.3	2.6	-1.4	-2.9	-1.4	2.1	7.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	19.4	151.9	173.2	318.3	266.7	85.4	1023.8
Total Inflow	kaf	3.7	3	2.7	2.5	2.6	2.7	19.7	154.5	171.8	315.4	265.3	87.5	1031.4
Total Inflow	cfs	60	50	44	41	47	44	331	2513	2887	5129	4315	1470	NA
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	1.2	99	116	257.6	208.3	57.7	739.8
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	153.8	170.8	314.3	264.4	114	1028.9
Total Release	cfs	5	3	5	5	4	5	168	2501	2870	5112	4300	1916	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	7.7	10.3	12.5	14.5	16.7	18.8	28	28	28	28	28	1	NA
End-month elevation	ft	4398	4400.6	4402.4	4403.9	4405.5	4406.8	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Content	kaf	1661.1	1691.4	1717	1741.7	1771.6	1828.5	1899.3	1860.7	1770.4	1437.8	1154.9	1044.6	NA

Table 29: 2021 ownership operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
North Platte Pathfinder (initial ownership: 411.1 KAF)														
Net Accrual	kaf	22.1	22.8	20.9	19.9	22.6	48.6	78.9	7.3	0	0	0	0	243.1
Evaporation	kaf	2.6	1.6	1	1	1.1	2.2	4.3	5.7	8.4	8.4	4.1	0.9	41.3
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	17.5	284.8	243.6	86.4	632.3
End-month Ownership	kaf	433.2	456	476.9	496.8	519.4	568	646.9	654.2	628.3	335.1	87.4	0.1	NA
North Platte Guernsey (Initial ownership: 0 KAF)														
Net Accrual	kaf	0	0	6.8	7	9.4	12.6	0	0	0	0	0	0	35.8
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.2	0.4	0.3	0.3	0.4	0	0	0	2.2
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	34.8	0	0	0	34.8
End-month Ownership	kaf	0	0	6.8	13.8	23.2	35.8	35.5	35.2	0	0	0	0	NA
Inland Lakes (Initial ownership: 0 KAF)														
Net Accrual	kaf	12	9.5	0	0	0	0	11	0	0	0	0	0	32.5
Evaporation/Seepage	kaf	0.3	0.2	0.1	0	0	0.1	0.1	0.2	0	0	0	0	1
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	22.1	0	0	0	0	32.1
End-month Ownership	kaf	12	21.5	21.4	21.4	21.4	21.3	22.3	0	0	0	0	0	NA
Kendrick (Initial ownership: 1073.8 KAF)														
Net Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	7	3.9	2.4	2.3	2.3	4.4	7.9	9.1	13.1	13.4	11.8	9.2	86.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
End-month Ownership	kaf	1066.8	1062.9	1060.5	1058.2	1055.9	1051.5	1043.6	1025	998.6	966.9	939.6	921.1	NA
Glendo Unit (Initial ownership: 131.2 KAF)														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1	1.1	1.6	1.6	1.4	1	10.5
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	128.4	127.4	126.3	122.7	115.1	108.7	103.7	NA
Re-regulation (Initial ownership: 0 KAF)														
Accrual	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
End-month total	kaf	0	0	0	0	0	0	0	0	0	0	0	0	NA
City of Cheyenne (Initial ownership: 8.3 KAF)														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	1.2
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.6	13.1	13.8	14	10.5	11.4	11.8	12.3	12.9	NA
Pacificorp (Initial ownership: 2 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
Other (Initial ownership: 7.9 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.7	7.7	7.7	7.7	7.7	7.6	7.5	7.4	6.9	4.9	4.8	NA

Table 30: 2021 irrigation operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Kendrick (Casper Canal)														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Kendrick (River)														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Guernsey Deliveries														
North Platte Req	kaf	0	0	0	0	0	0	0	131.7	168.8	308.3	259.4	110	978.2
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	22.1	0	0	0	0	32.1
Total Requirement	kaf	0	0	0	0	0	0	10	153.8	170.8	314.3	264.4	114	1027.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	10	153.8	170.8	314.3	264.4	114	1028.9
Ownership EOM Cont	kaf	1661.1	1691.4	1717	1741.7	1771.6	1828.5	1899.3	1860.7	1770.4	1437.8	1154.9	1044.6	NA

Table 31: 2021 power generation operating plan for the minimum probable inflow scenario (340 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Power Plant														
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	0	0	0	526
Bypass	kaf	0	0	0	0	0	0	0	0	0	58.6	58.6	47.6	164.8
Maximum generation	gwh	32.592	31.367	31.964	31.46	28.223	31.26	30.623	31.493	30.059	0	0	0	279.041
Actual generation	gwh	5.426	5.198	9.84	5.281	4.755	5.275	6.138	25.402	18.106	0	0	0	85.421
Percent max generation	NA	17	17	31	17	17	17	20	81	60	0	0	0	31
Average kwh/af	NA	166	165	164	162	162	162	163	162	161	0	0	0	162
Kortes Power Plant														
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	32.6	37.7	156.8	112.7	58.6	58.6	47.6	690.7
Bypass	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.32	5.607	5.057	5.607	6.484	26.97	19.384	10.079	10.079	8.187	118.799
Percent max generation	NA	20	20	37	20	20	20	24	98	73	37	37	31	36
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
Fremont Canyon														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	67.4	169.1	163.6	164.1	107.7	53.6	802.1
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	32.9	31.8	4.6	4.6	4.5	219.4
Maximum generation	gwh	0	0	0	45.792	41.378	45.86	44.253	45.325	43.094	43.283	42.067	40.096	391.148
Actual generation	gwh	0	0	0	7.122	6.449	7.187	18.231	45.325	43.094	42.003	26.793	13.137	209.341
Percent max generation	NA	0	0	0	16	16	16	41	100	100	97	64	33	54
Average kwh/af	NA	0	0	0	271	271	271	270	268	263	256	249	245	261
Alcova Power Plant														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	47.6	191.5	180.7	148.8	95.4	47.7	886.3
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	0	0	0	0	60.5
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	6.569	26.81	25.298	20.832	13.356	6.678	118.933
Percent max generation	NA	39	0	0	15	15	15	25	97	95	76	48	25	46
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	134

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Glendo Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	17.9	150.4	171.7	229.2	221.4	83.9	874.5
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	89.1	45.3	1.5	149.3
Maximum generation	gwh	0	0	0	0	0	0	2.454	26.62	26.489	24.716	19.409	13.047	112.735
Actual generation	gwh	0	0	0	0	0	0	1.961	16.979	19.715	24.716	19.409	5.46	88.24
Percent max generation	NA	0	0	0	0	0	0	80	64	74	100	100	42	78
Average kwh/af	NA	0	0	0	0	0	0	110	113	115	108	88	65	101
Guernsey Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	8.4	53.6	51.8	53.6	53.6	56	277
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	1.6	100.2	119	260.7	210.8	58	751.9
Maximum generation	gwh	0	0	0	0	0	0	0.572	3.795	3.667	3.795	3.795	3.388	19.012
Actual generation	gwh	0	0	0	0	0	0	0.572	3.795	3.667	3.795	3.795	3.388	19.012
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	68	71	71	71	71	61	69

Table 32: 2021 hydrologic operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Reservoir (Initial content: 658.6 KAF)														
Total Inflow	kaf	36.9	34.1	28.4	26.5	29	61	159.3	392.8	576.1	218.2	60.9	36.2	1659.4
Total Inflow	cfs	600	573	462	431	522	992	2677	6388	9682	3549	990	608	NA
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	118.1	186.1	192.2	187.5	0	0	0	870.1
Jetflow Release	kaf	0	0	0	0	0	0	43	77.6	37.8	201.7	107.4	68.5	536
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	6.2	0	0	6.2
Total Release	kaf	32.7	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.3
Total Release	cfs	532	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Evaporation	kaf	4	2.2	1.2	1	1.2	2.3	3.9	3.9	8.3	10.9	9.2	6.4	54.5
End-month content	kaf	659.5	662.4	630.3	623.7	622.7	564.1	490.7	606.4	950	950	895	857	NA
End-month elevation	ft	6336.2	6336.4	6334.1	6333.7	6333.6	6329.1	6323	6332.4	6353.6	6353.6	6350.7	6348.6	NA
Kortes Reservoir (Initial content: 4.7 KAF)														
Total Inflow	kaf	32.7	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.3
Total Inflow	cfs	532	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	118.1	155.3	160.5	155.3	160.5	107.4	68.5	1111.7
Spillway Release	kaf	0	0	0	0	0	0	73.8	109.3	70	47.4	0	0	300.5
Total Release	kaf	32.6	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.2
Total Release	cfs	530	529	976	530	529	1921	3850	4388	3786	3381	1747	1151	NA
Min reservoir rels	cfs	530	530	974	530	530	528	528	530	3786	2400	1275	530	NA
Max reservoir rels	cfs	530	530	975	530	530	1920	3850	4550	5000	5000	3000	1300	NA
Pathfinder Reservoir (Initial content: 650.5 KAF)														
Sweetwater Inflow	kaf	3.4	3.6	2.7	2.5	2.7	6.4	19.1	45.3	44.8	13.3	4.8	3	151.6
Kortes-Path Gain	kaf	4.5	2.1	2.1	4.5	6.1	8.6	11.4	16.4	11	8.7	6.9	6.9	89.2
Inflow from Kortes	kaf	32.6	31.5	60	32.6	29.4	118.1	229.1	269.8	225.3	207.9	107.4	68.5	1412.2
Total Inflow	kaf	40.5	37.2	64.8	39.6	38.2	133.1	259.6	331.5	281.1	229.9	119.1	78.4	1653
Total Inflow	cfs	659	625	1054	644	688	2165	4363	5391	4724	3739	1937	1318	NA
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	147.3	141.5	163.6	169.1	169.1	119.9	987.1
Jetflow Release	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	89.3	72.3	69.3	4.5	381

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Release	kaf	4.6	30.1	88.4	30.9	28	31.1	151.8	146.1	252.9	241.4	238.4	124.4	1368.1
Total Release	cfs	75	506	1438	503	504	506	2551	2376	4250	3926	3877	2091	NA
Evaporation	kaf	4.5	2.5	1.4	1.3	1.4	3	6.2	8.5	13.4	14.8	12.5	9	78.5
End-month content	kaf	681.9	686.5	661.5	668.9	677.7	776.7	878.3	1055.2	1070	1043.7	911.9	856.9	NA
End-month elevation	ft	5832.7	5833	5831.5	5831.9	5832.5	5838.2	5843.5	5851.8	5852.5	5851.3	5845.2	5842.4	NA
Jetflow Release	cfs	75	506	1438	75	76	75	76	75	1501	1176	1127	76	NA
Min Release	cfs	75	75	75	75	75	75	75	75	75	75	75	75	NA
Alcova Reservoir (Initial content: 179.8 KAF)														
Total Inflow	kaf	4.6	30.1	88.4	30.9	28	31.1	151.8	146.1	252.9	241.4	238.4	124.4	1368.1
Total Inflow	cfs	75	506	1438	503	504	506	2551	2376	4250	3926	3877	2091	NA
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	127.5	135.6	190.4	196.8	196.8	114	1135.7
Spillway Release	kaf	0	29.8	30.7	0	0	0	0	0	47.8	24.7	24.7	0	157.7
Casper Canal Release	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Total Release	kaf	85.4	29.8	30.7	30.7	27.8	30.7	127.5	145.1	251.5	239.8	237	123.3	1359.3
Total Release	cfs	1389	501	499	499	501	499	2143	2360	4227	3900	3854	2072	NA
Evaporation	kaf	0.6	0.3	0.2	0.2	0.2	0.4	0.8	1	1.4	1.6	1.4	1.1	9.2
End-month content	kaf	98.4	98.4	155.9	155.9	155.9	155.9	179.4	179.4	179.4	179.4	179.4	179.4	NA
End-month elevation	ft	5459	5459	5487.9	5487.9	5487.9	5487.9	5498	5498	5498	5498	5498	5498	NA
Gray Reef Reservoir (Initial content: 1.2 KAF)														
Total Inflow	kaf	85.4	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.2	221.5	221.5	114	1293.4
Total Inflow	cfs	1389	501	499	499	501	499	2143	2205	4003	3602	3602	1916	NA
Total Release	kaf	85.5	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.1	221.4	221.4	113.9	1293.1
Total Release	cfs	1391	501	499	499	501	499	2143	2205	4001	3601	3601	1914	NA
Min reservoir rels	cfs	500	500	500	500	500	500	2100	2200	3105	3599	1298	500	NA
Max reservoir rels	cfs	1500	500	500	500	500	500	2143	2206	4002	3600	3600	1914	NA
Glendo Reservoir (Initial content: 135 KAF)														
Alcova-Glendo Gain	kaf	16.2	14.3	6.1	14.1	13.6	19	60.8	182.9	68.3	8.8	8.3	14.2	426.6
Infl from Gray Reef	kaf	85.5	29.8	30.7	30.7	27.8	30.7	127.5	135.6	238.1	221.4	221.4	113.9	1293.1
Total Inflow	kaf	101.7	44.1	36.8	44.8	41.4	49.7	188.3	318.5	306.4	230.2	229.7	128.1	1719.7

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Total Inflow	cfs	1654	741	598	729	745	808	3164	5180	5149	3744	3736	2153	NA
Turbine Release	kaf	0	0	0	0	0	0	22.6	235.3	230.1	232.5	221.4	209.4	1151.3
Low Flow Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	17.8
Spillway Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigation Release	kaf	0	0	0	0	0	0	155.2	42.1	54.3	106.8	123.3	65	546.7
Total Release	kaf	1.5	1.5	1.5	1.5	1.4	1.5	179.3	278.9	285.9	340.8	346.2	275.8	1715.8
Total Release	cfs	24	25	24	24	25	24	3013	4536	4805	5543	5630	4635	NA
Evaporation	kaf	1.3	0.9	0.8	0.9	1	1.9	3.3	4.7	6.9	7.1	5.1	2.7	36.6
End-month content	kaf	233.9	275.6	310.1	352.5	391.5	437.8	443.5	478.4	492	373.9	250.4	100	NA
End-month elevation	ft	4607.6	4613	4617.1	4621.8	4625.8	4630.3	4630.8	4633.9	4635	4624.1	4609.8	4584.1	NA
Guernsey Reservoir (Initial content: 4.5 KAF)														
Glendo-Guerns Gain	kaf	3.2	1.7	1.5	1.8	1.2	1	7.7	32.9	22.3	6.3	-0.3	4.3	83.6
Inflow from Glendo	kaf	1.5	1.5	1.5	1.5	1.4	1.5	179.3	278.9	285.9	340.8	346.2	275.8	1715.8
Total Inflow	kaf	4.7	3.2	3	3.3	2.6	2.5	187	311.8	308.2	347.1	345.9	280.1	1799.4
Total Inflow	cfs	76	54	49	54	47	41	3143	5071	5179	5645	5626	4707	NA
Turbine Release	kaf	0	0	0	0	0	0	45.7	53.6	51.8	53.6	53.6	56	314.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Spillway Release	kaf	0	0	0	0	0	0	133.3	256.3	252.4	289.3	288.9	250.3	1470.5
Total Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	179.4	311.1	307.2	346	345	306.6	1796.9
Total Release	cfs	5	3	5	5	4	5	3015	5060	5163	5627	5611	5153	NA
Evaporation	kaf	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.7	1	1.1	0.9	0.5	6
End-month content	kaf	8.7	11.5	14	16.8	19	20.9	28	28	28	28	28	1	NA
End-month elevation	ft	4399	4401.6	4403.6	4405.5	4406.9	4408.1	4411.9	4411.9	4411.9	4411.9	4411.9	4384.1	NA
Physical EOM Content	kaf	1688.3	1740.3	1777.7	1823.7	1872.7	1961.3	2025.8	2353.3	2725.3	2580.9	2270.6	2000.2	NA

Table 33: 2021 ownership operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
North Platte Pathfinder (initial ownership: 411.1 KAF)														
Net Accrual	kaf	42.2	38.2	32.1	32.4	36.6	73.5	184.8	343.3	0	0	0	0	783.1
Evaporation	kaf	2.6	1.6	1.1	1.1	1.2	2.5	5	6.7	14.2	13.8	11.8	8.2	69.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	124.2	0	0	0	94.2	238	456.4
End-month Ownership	kaf	453.3	491.5	523.6	556	592.6	666.1	726.7	1070	1055.8	1042	936	689.8	NA
North Platte Guernsey (Initial ownership: 0 KAF)														
Net Accrual	kaf	0	0	7.3	15.6	14.5	8.2	0	0	0	0	0	0	45.6
Evaporation/Seepage	kaf	0	0	0.3	0.3	0.3	0.5	0.4	0	0	0	0	0	1.8
Deliv fm Ownership	kaf	0	0	0	0	0	0	45.2	0	0	0	0	0	45.2
End-month Ownership	kaf	0	0	7.3	22.9	37.4	45.6	0	0	0	0	0	0	NA
Inland Lakes (Initial ownership: 0 KAF)														
Net Accrual	kaf	19.1	15.7	0	0	0	0	11.2	0	0	0	0	0	46
Evaporation/Seepage	kaf	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.3	0	0	0	0	1.5
Trnsfr fm Ownership	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
End-month Ownership	kaf	19.1	34.8	34.7	34.6	34.5	34.4	35.6	0.1	0.1	0.1	0.1	0.1	NA
Kendrick (Initial ownership: 1073.8 KAF)														
Net Accrual	kaf	0	0	0	0	0	0	0	25.2	132.7	0	0	0	157.9
Evaporation	kaf	7	3.9	2.3	2.1	2.3	4.5	7.9	9.7	14.1	15.7	13.4	10.1	93
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	0	15.5	9.3	24.8
End-month Ownership	kaf	1066.8	1062.9	1060.6	1058.5	1056.2	1051.7	1043.8	1069	1201.7	1186	1157.1	1137.7	NA
Glendo Unit (Initial ownership: 131.2 KAF)														
Accrual	kaf	0	0	0	0	0	11.3	32	0	0	0	0	0	43.3
Evaporation	kaf	0.9	0.5	0.3	0.3	0.3	0.5	1	1.6	2.2	2.2	1.9	1.3	13
Deliv fm Ownership	kaf	0	0	0	0	0	0	0	0	0	0	5	4	9
End-month Ownership	kaf	130.3	129.8	129.5	129.2	128.9	139.7	170.7	169.1	166.9	164.7	157.8	152.5	NA
Re-regulation (Initial ownership: 0 KAF)														
Accrual	kaf	0	0	0	0	0	0	25.1	0	255.2	0	0	0	280.3
Evaporation/Seepage	kaf	0	0	0	0	0	0	0	0.3	0.3	3.6	1.9	0	6.1

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Release	kaf	0	0	0	0	0	0	0	0	0	109	165.2	0	274.2
End-month total	kaf	0	0	0	0	0	0	25.1	24.8	279.7	167.1	0	0	NA
City of Cheyenne (Initial ownership: 8.3 KAF)														
Inflow	kaf	0.7	2.5	0.7	0.5	0.6	0.8	0.3	0.6	2.7	1.1	0.7	0.7	11.9
Evaporation	kaf	0	0	0	0	0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.9
Release	kaf	0	0	0	0	0	0	0	4	1.6	0.5	0	0	6.1
Ownership	kaf	9	11.5	12.2	12.7	13.3	14	14.2	10.7	11.6	12	12.6	13.2	NA
Pacificorp (Initial ownership: 2 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Release	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Ownership	kaf	2	2	2	2	2	2	2	2	2	2	2	2	NA
Other (Initial ownership: 7.9 KAF)														
Inflow	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Evaporation	kaf	0.1	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Release	kaf	0	0	0	0	0	0	0	0	0	0.4	1.9	0	2.3
Ownership	kaf	7.8	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.5	7	5	4.9	NA

Table 34: 2021 irrigation operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Kendrick (Casper Canal)														
Requested	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Delivered	kaf	0	0	0	0	0	0	0	9.5	13.3	18.3	15.5	9.3	65.9
Kendrick (River)														
Requested	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Delivered	kaf	0	0	0	0	0	0	0	0	0	0	0	0	0
Guernsey Deliveries														
North Platte Req	kaf	0	0	0	0	0	0	169.4	275.9	305.2	340	340	302.6	1733.1
Glendo Req	kaf	0	0	0	0	0	0	0	0	2	6	5	4	17
Inland Lakes Req	kaf	0	0	0	0	0	0	10	35.2	0	0	0	0	45.2
Total Requirement	kaf	0	0	0	0	0	0	179.4	311.1	307.2	346	345	306.6	1795.3
Seepage	kaf	0.3	0.2	0.3	0.3	0.2	0.3	0.4	1.2	3	3.1	2.5	0.3	12.1
Actual Release	kaf	0.3	0.2	0.3	0.3	0.2	0.3	179.4	311.1	307.2	346	345	306.6	1796.9
Ownership EOM Cont	kaf	1688.3	1740.3	1777.7	1823.7	1872.7	1961.3	2025.8	2353.3	2725.3	2580.9	2270.6	2000.2	NA

Table 35: 2021 power generation operating plan for the maximum probable inflow scenario (1659 KAF April - July inflow into Seminoe Reservoir).

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Seminoe Power Plant														
Turbine Release	kaf	32.7	31.5	60	32.6	29.4	118.1	186.1	192.2	187.5	0	0	0	870.1
Bypass	kaf	0	0	0	0	0	0	43	77.6	37.8	207.9	107.4	68.5	542.2
Maximum generation	gwh	32.721	31.691	32.488	32.125	28.95	31.502	29.294	30.662	32.335	0	0	0	281.768
Actual generation	gwh	5.448	5.254	9.92	5.36	4.822	19.138	29.294	30.662	32.335	0	0	0	142.233
Percent max generation	NA	17	17	31	17	17	61	100	100	100	0	0	0	50
Average kwh/af	NA	167	167	165	164	164	162	157	160	172	0	0	0	163
Kortes Power Plant														
Turbine Release	kaf	32.6	31.5	60	32.6	29.4	118.1	155.3	160.5	155.3	160.5	107.4	68.5	1111.7
Bypass	kaf	0	0	0	0	0	0	73.8	109.3	70	47.4	0	0	300.5
Maximum generation	gwh	28.346	26.712	27.606	27.606	24.94	27.606	26.712	27.606	26.712	27.606	27.606	26.712	325.77
Actual generation	gwh	5.607	5.418	10.32	5.607	5.057	20.313	26.712	27.606	26.712	27.606	18.473	11.782	191.213
Percent max generation	NA	20	20	37	20	20	74	100	100	100	100	67	44	59
Average kwh/af	NA	172	172	172	172	172	172	172	172	172	172	172	172	172
Fremont Canyon														
Turbine Release	kaf	0	0	0	26.3	23.8	26.5	147.3	141.5	163.6	169.1	169.1	119.9	987.1
Bypass	kaf	4.6	30.1	88.4	4.6	4.2	4.6	4.5	4.6	89.3	72.3	69.3	4.5	381
Maximum generation	gwh	0	0	0	45.963	41.571	46.522	45.663	47.298	45.808	47.348	47.306	45.703	413.182
Actual generation	gwh	0	0	0	7.149	6.479	7.291	41.114	39.579	45.808	47.348	47.306	33.495	275.569
Percent max generation	NA	0	0	0	16	16	16	90	84	100	100	100	73	67
Average kwh/af	NA	0	0	0	272	272	275	279	280	280	280	280	279	279
Alcova Power Plant														
Turbine Release	kaf	85.4	0	0	30.7	27.8	30.7	127.5	135.6	190.4	196.8	196.8	114	1135.7
Bypass	kaf	0	29.8	30.7	0	0	0	0	0	47.8	24.7	24.7	0	157.7
Maximum generation	gwh	18.777	0	0	27.472	24.82	27.472	26.275	27.552	26.656	27.552	27.552	26.656	260.784
Actual generation	gwh	7.259	0	0	4.175	3.781	4.175	17.595	18.984	26.656	27.552	27.552	15.96	153.689
Percent max generation	NA	39	0	0	15	15	15	67	69	100	100	100	60	59
Average kwh/af	NA	85	0	0	136	136	136	138	140	140	140	140	140	135

Accounting Item	Unit	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Glendo Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	22.6	235.3	230.1	232.5	221.4	209.4	1151.3
Bypass	kaf	1.5	1.5	1.5	1.5	1.4	1.5	156.7	43.6	55.8	108.3	124.8	66.4	564.5
Maximum generation	gwh	0	0	0	0	0	0	2.507	26.47	26.317	25.652	22.186	16.351	119.483
Actual generation	gwh	0	0	0	0	0	0	2.507	26.47	26.317	25.652	22.186	16.351	119.483
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	111	112	114	110	100	78	104
Guernsey Power Plant														
Turbine Release	kaf	0	0	0	0	0	0	45.7	53.6	51.8	53.6	53.6	56	314.3
Bypass	kaf	0.3	0.2	0.3	0.3	0.2	0.3	133.7	257.5	255.4	292.4	291.4	250.6	1482.6
Maximum generation	gwh	0	0	0	0	0	0	3.138	3.795	3.667	3.795	3.795	3.388	21.578
Actual generation	gwh	0	0	0	0	0	0	3.138	3.795	3.667	3.795	3.795	3.388	21.578
Percent max generation	NA	0	0	0	0	0	0	100	100	100	100	100	100	100
Average kwh/af	NA	0	0	0	0	0	0	69	71	71	71	71	61	69

Appendix B: Glossary

Annual Operating Plan (AOP) - An annual publication which is prepared, reviewed, and presented to the public, with a summary of the actual operations and outlook for the coming water year.

Acre-Foot (AF) - A measure of volume of water equal to an area of 1 acre covered with water 1 foot deep (43,560 cubic feet).

Basin - The watershed from which overland runoff flows into the North Platte River. When used alone in this report it refers to the North Platte River Drainage Basin upstream of Guernsey Dam.

Bypass - That amount of water released from a reservoir other than through the powerplant for those reservoirs which have a powerplant connected to them.

Cubic foot per second (cfs) - The rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute. The volume of water represented by a flow of 1 cubic foot per second for 24 hours is equivalent to 86,400 cubic feet, approximately 1.983 AF, or 646,272 gallons.

Evaporation pool - A volume of water set aside in the accounting process from which reservoir evaporation is subtracted as it occurs (used in Glendo storage accounting).

Flood pool - A physical space in the reservoir which is to be occupied only by water from flood events. In Glendo Reservoir, the volume between reservoir elevations 4635.0 feet and 4653.0 feet is reserved exclusively for flood control.

Gains - Water which enters a river in a defined reach from a source other than an upstream release. When flow released into a reach is greater than the river flow exiting the lower end of the reach, the net gain is negative (loss of water in the reach).

Giga Watt hour (GWh) - A unit of power equal to one-billion watt-hours.

Head - The difference in elevation between the reservoir water surface and the power generating turbines at a powerplant which is connected to a reservoir.

Hydromet - Computer software designed for the acquisition, processing, storage, and retrieval of hydrological and meteorological data which is gathered via satellite from remote sites.

Inflow - As used in this report is any water which enters a reservoir irrespective of whether it originated in the reach or was released from an upstream storage reservoir.

Inland Lakes - A series of four off-stream storage reservoirs on the Interstate Canal system in Nebraska which are used to store and re-release irrigation water (Lake Alice, Lake Minatare, Little Lake Alice, and Lake Winters Creek).

Megawatt (MW) – A unit of power equal to one million watts.

Natural flow - River flow which has originated from a source other than reservoir storage.

NRCS – The Natural Resources Conservation Service which is a government agency under the Department of Agriculture.

Power pool - That space in a reservoir which must be full in order to efficiently generate electrical power through an associated turbine generator.

Precipitation - A deposit on the earth of hail, mist, rain, sleet, or snow.

Runoff - That part of precipitation on the Basin which appears as flow in the North Platte River.

Silt Run - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce seepage losses.

SNOTEL - Snowpack telemetry network. A network of NRCS automated sites which continually monitor snowpack and weather conditions and transmit data to a data retrieval center in Portland, Oregon.

System - As used in the report the System includes all storage, delivery, and power generating facilities on the mainstem of the North Platte River in Wyoming.

SWE – Snow Water Equivient is the amount of water in the snowpack expressed in inches.

Water Year (WY) - October 1 through September 30.

Appendix C: Historical Watershed Runoff

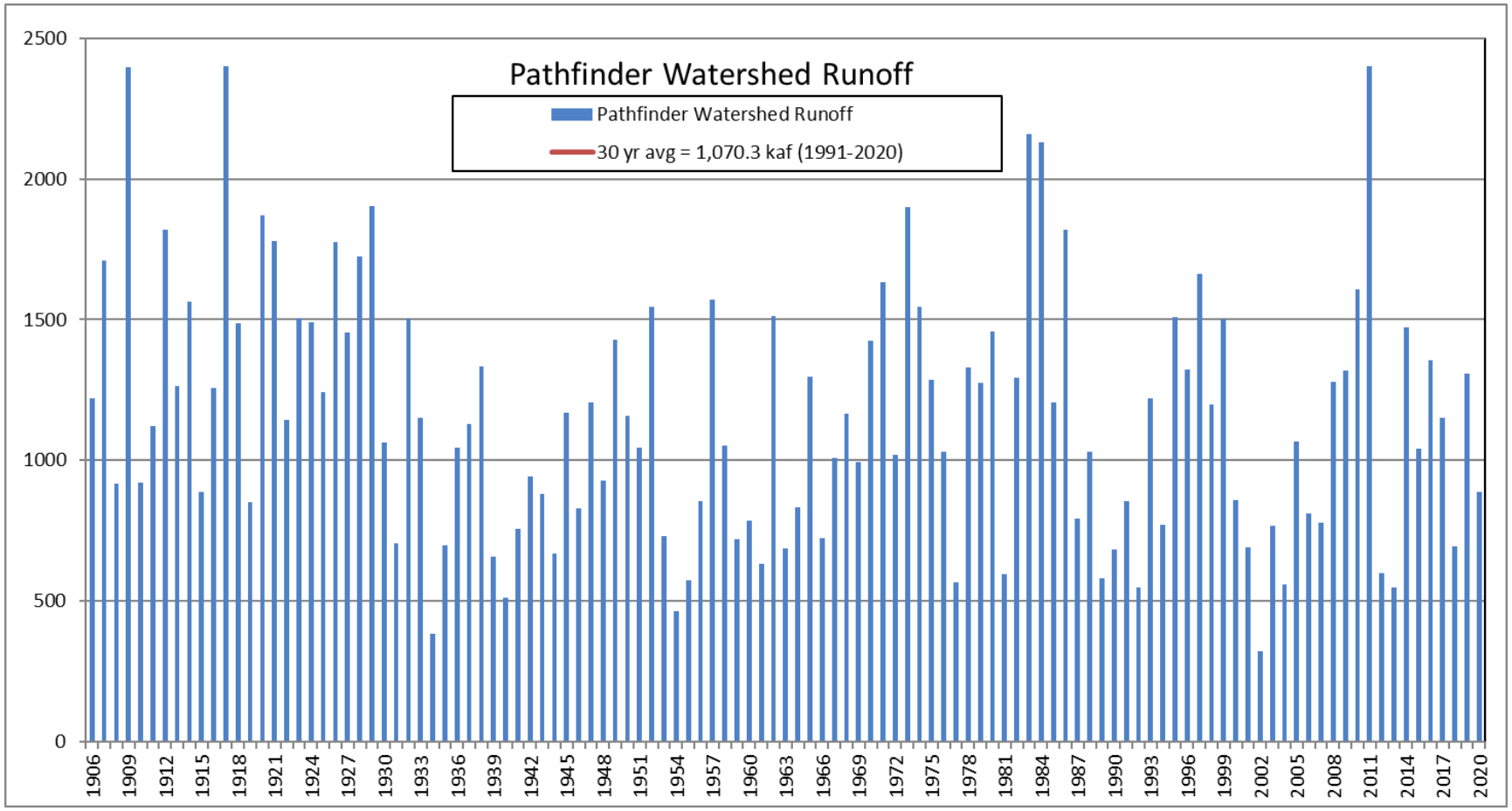

Figure 20: Pathfinder Watershed Runoff 1906-2020

Appendix D: Reservoir Data Definition Sheets

A. General:

Dam design and reservoir operation utilize reservoir capacity and water surface elevation data. To insure uniformity in the establishment, use, and publication of this data the following standard definitions of water surface elevations and reservoir capacities shall be used.

B. Water Surface Elevation Definitions:

Maximum Water Surface - The highest acceptable water surface elevation with all factors affecting the safety of the structure considered. Normally it is the highest water surface elevation resulting from a computed routing of the inflow design flood through the reservoir on the basis of established operating criteria. It is the top of surcharge capacity.

Top of Exclusive Flood Control Capacity - The reservoir water surface elevation at the top of the reservoir capacity allocated to exclusive use for the regulating of flood inflows to reduce damage downstream.

Maximum Controllable Water Surface Elevation - The highest reservoir water surface elevation at which gravity flows from the reservoir can be completely shut off.

Top of Joint Use Capacity - The reservoir water surface elevation at the top of the reservoir capacity allocated to joint use, i.e., flood control and conservation purposes.

Top of Active Conservation Capacity - The reservoir water surface elevation at the top of the capacity allocated to the storage of water for conservation purposes only.

Top of Inactive Capacity - The reservoir water surface elevation below which the reservoir will not be evacuated under normal conditions.

Top of Dead Capacity - The lowest elevation in the reservoir from which water can be drawn by gravity.

Streambed at the Dam Axis - The elevation of the lowest point in the streambed at the axis of the dam prior to construction. This elevation normally defines the zero for the area-capacity tables.

C. Capacity Definitions:

Surcharge Capacity - The reservoir capacity provided for use in passing the inflow design flood through the reservoir. It is the reservoir capacity between the maximum water surface elevation and the highest of the following elevations:

a) Top of exclusive flood control capacity

b) Top of joint use capacity

c) Top of active conservation capacity

Total Capacity - The reservoir capacity below the highest of the elevations representing the top of exclusive flood control capacity, the top of joint use capacity, or the top of active conservation capacity. In the case of a natural lake which has been enlarged, the total capacity includes the dead capacity of the lake. Total capacity is used to express the total quantity of water which can be impounded and is exclusive of surcharge capacity.

Live Capacity - The part of the total capacity from which water can be withdrawn by gravity. It is equal to the total capacity less the dead capacity.

Active Capacity - The reservoir capacity normally usable for storage and regulation of reservoir inflows to meet established reservoir operating requirements. Active capacity extends from the highest of the top of exclusive flood control capacity, the top of joint use capacity, or the top of active conservation capacity to the top of inactive capacity. It is the total capacity less the sum of the inactive and dead capacities.

Exclusive Flood Control Capacity - The reservoir capacity assigned to the sole purpose of regulating flood inflows to reduce flood damage downstream.

Joint Use Capacity - The reservoir capacity assigned to flood control purposes during certain periods of the year and to conservation purposes during other periods of the year.

Active Conservation Capacity - The reservoir capacity assigned to regulate reservoir inflow for irrigation, power, municipal, and industrial, fish and wildlife, navigation, recreation, water quality, and other purposes. It does not include exclusive flood control or joint use capacity. The active conservation capacity extends from the top of the active conservation capacity to the top of the inactive capacity.

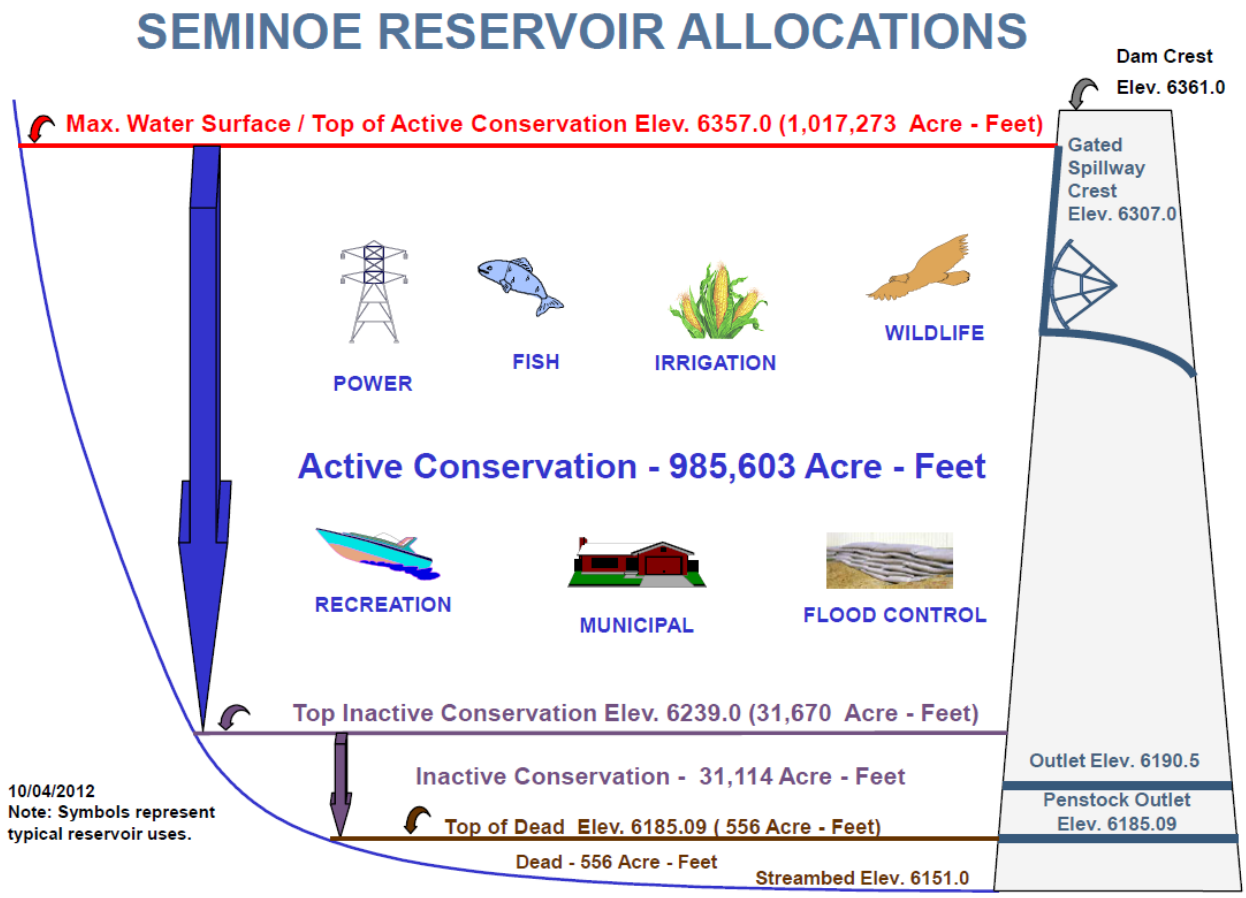

Figure 21: Seminoe Reservoir Allocation

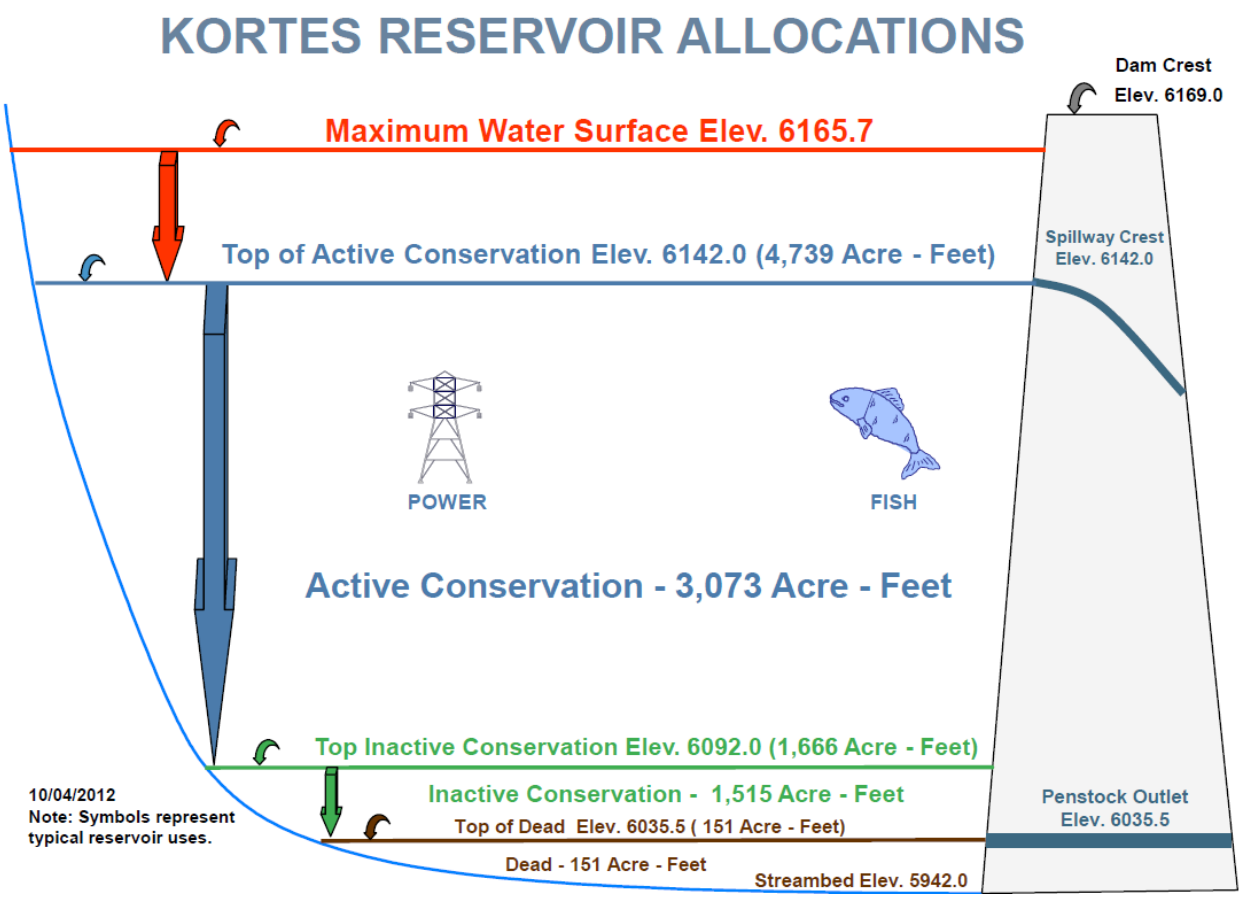

Figure 22: Kortes Reservoir Allocation

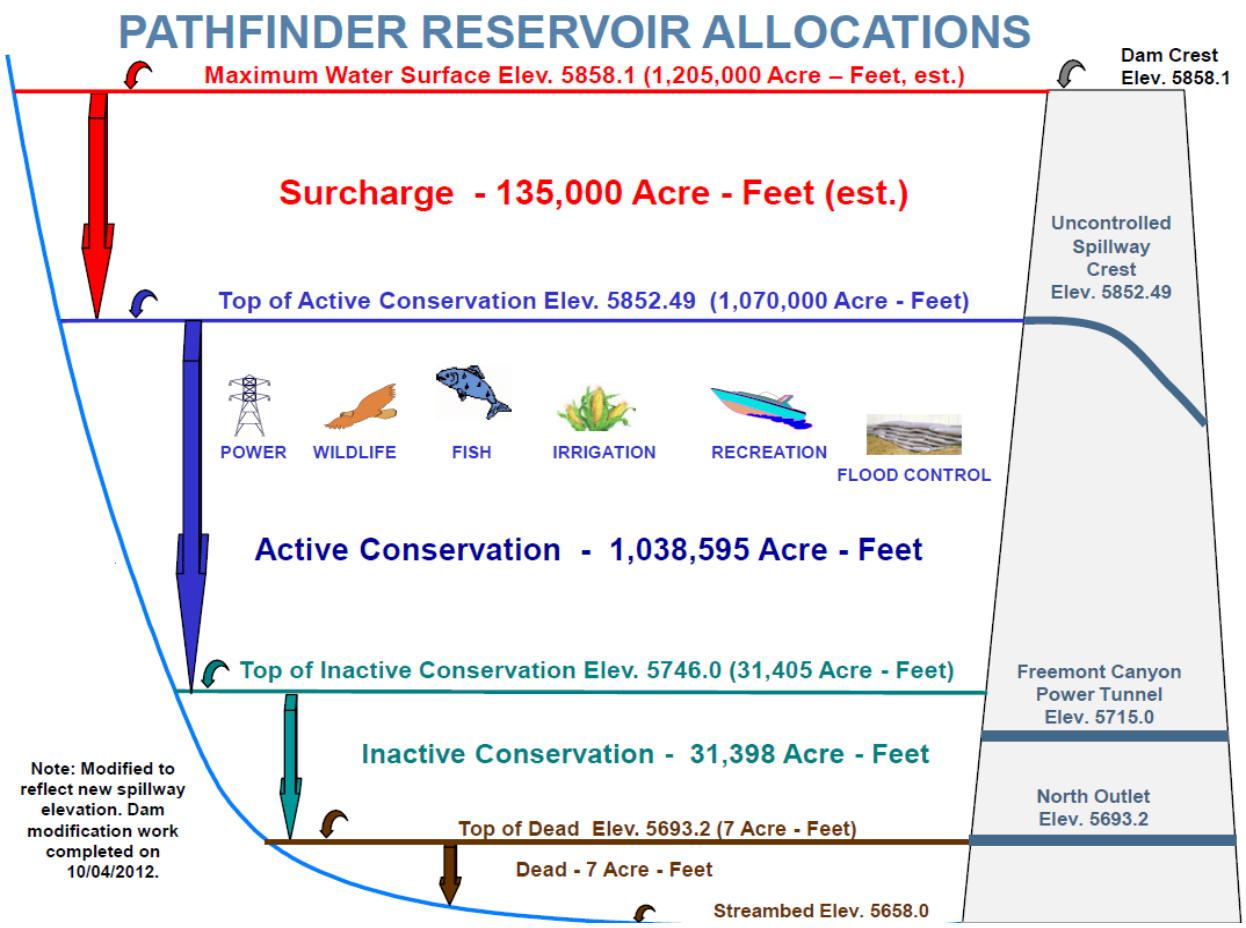

Figure 23: Pathfinder Reservoir Allocation

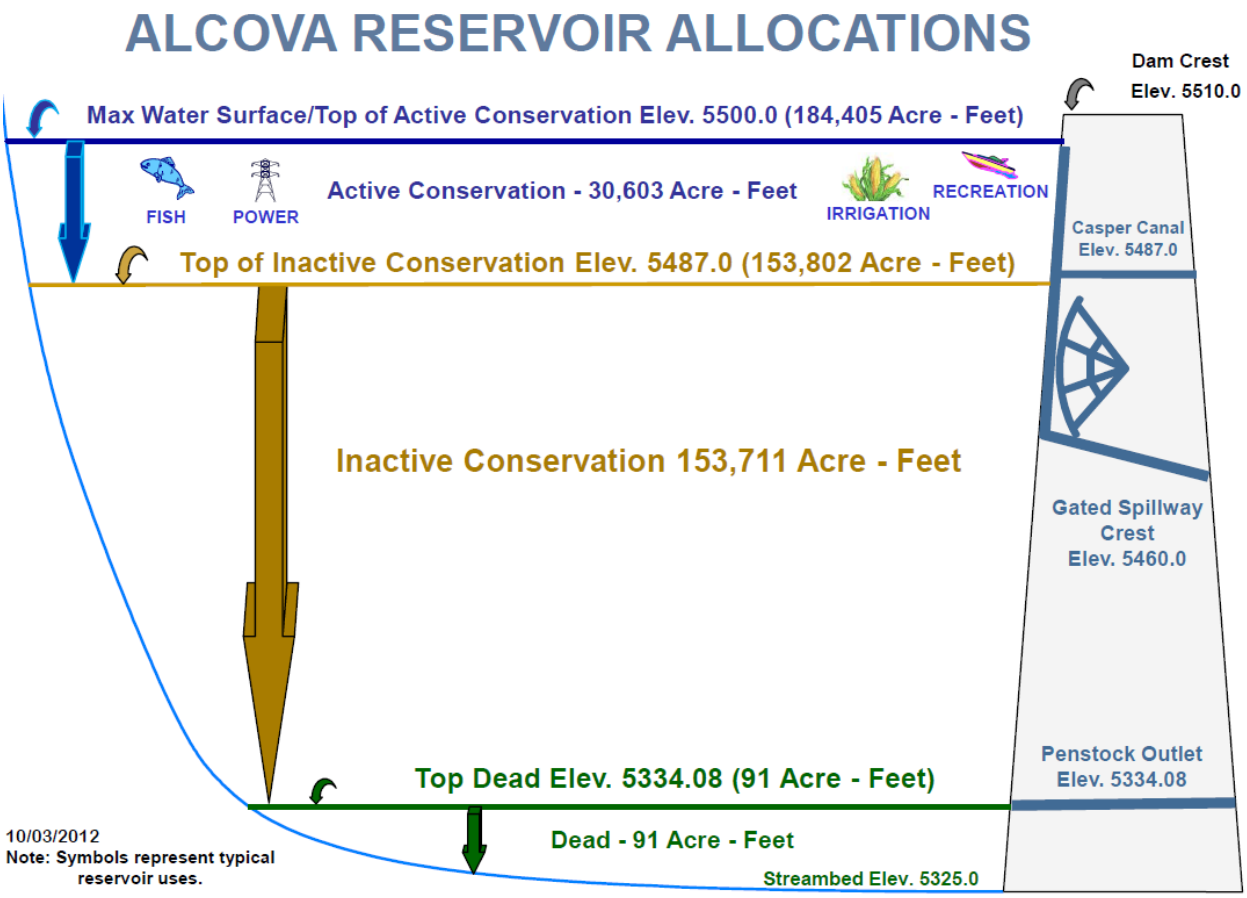

Figure 24: Alcova Reservoir Allocation

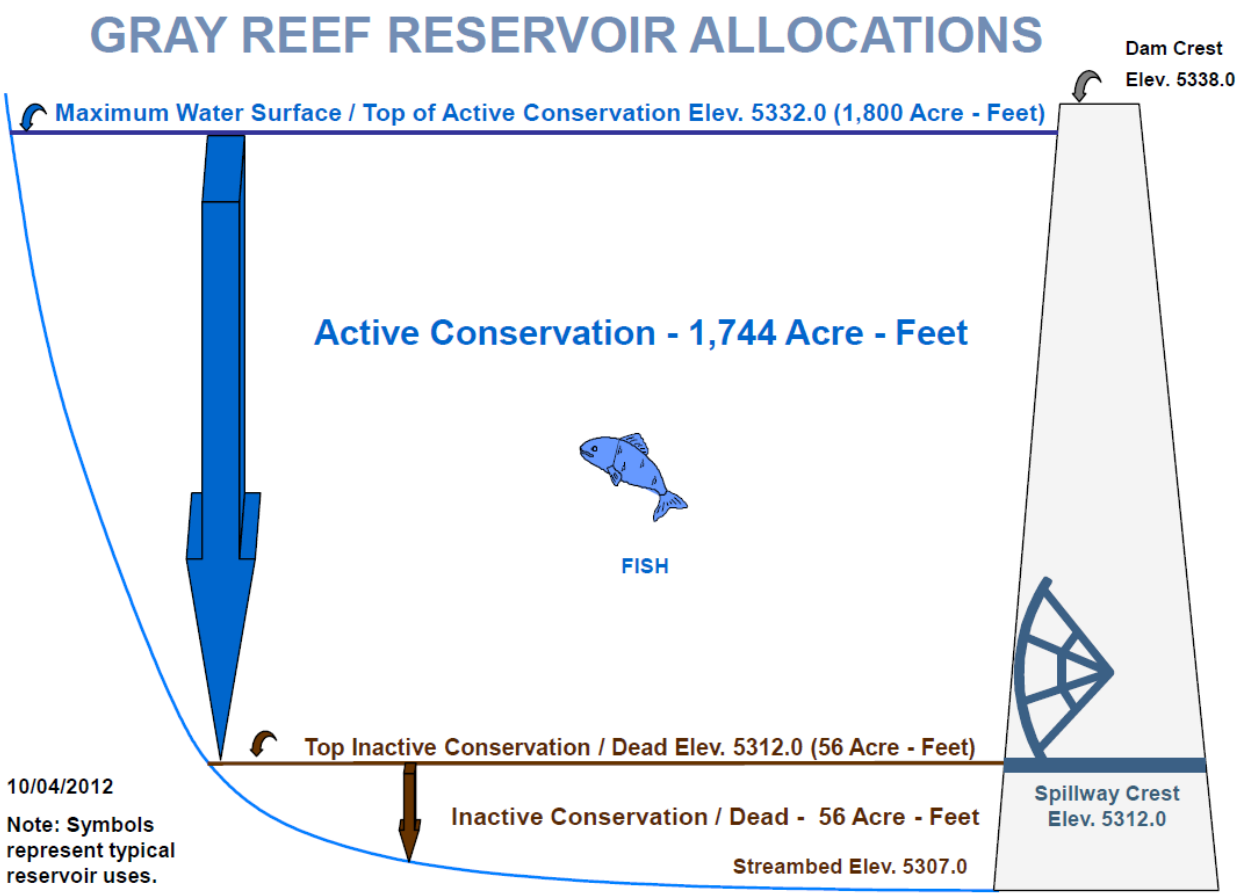

Figure 25: Gray Reef Reservoir Allocation

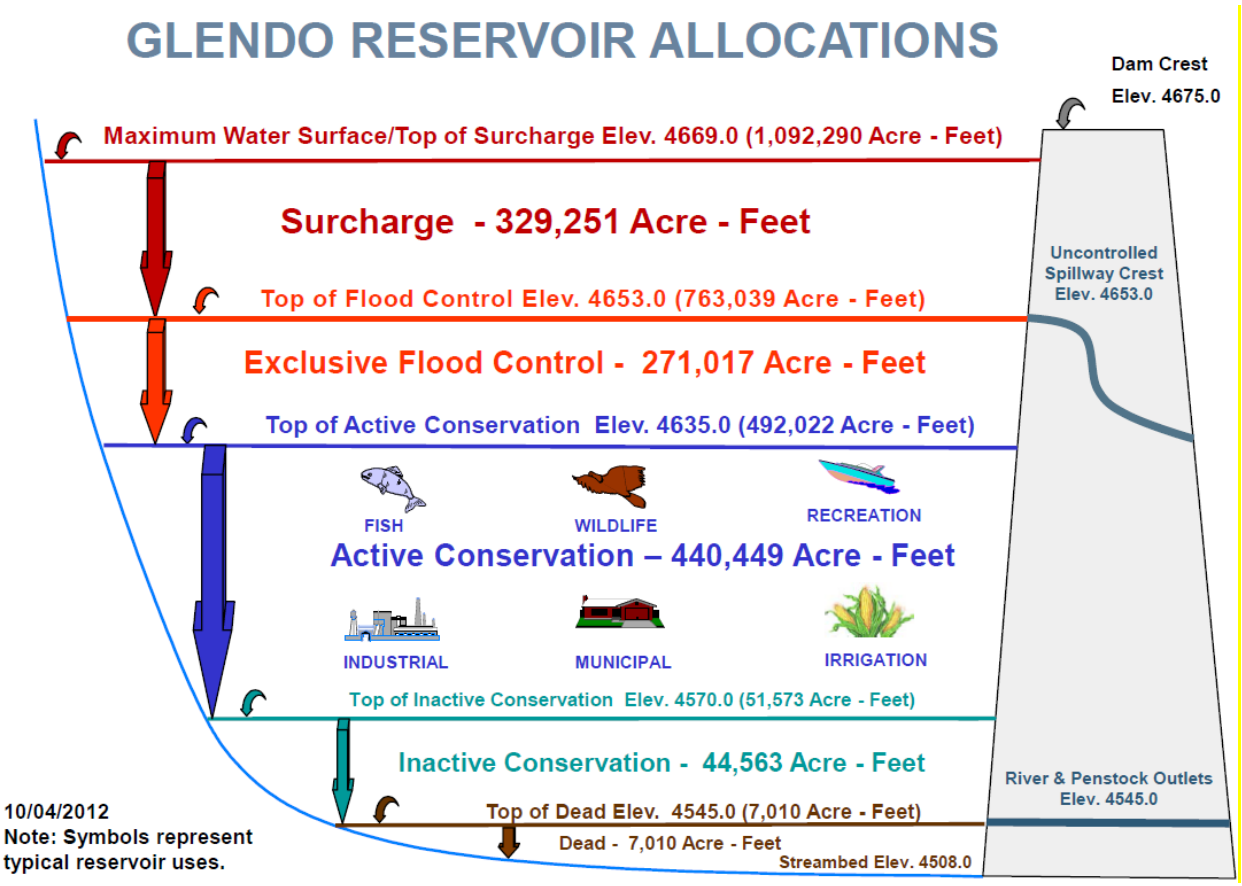

Figure 26: Glendo Reservoir Allocation

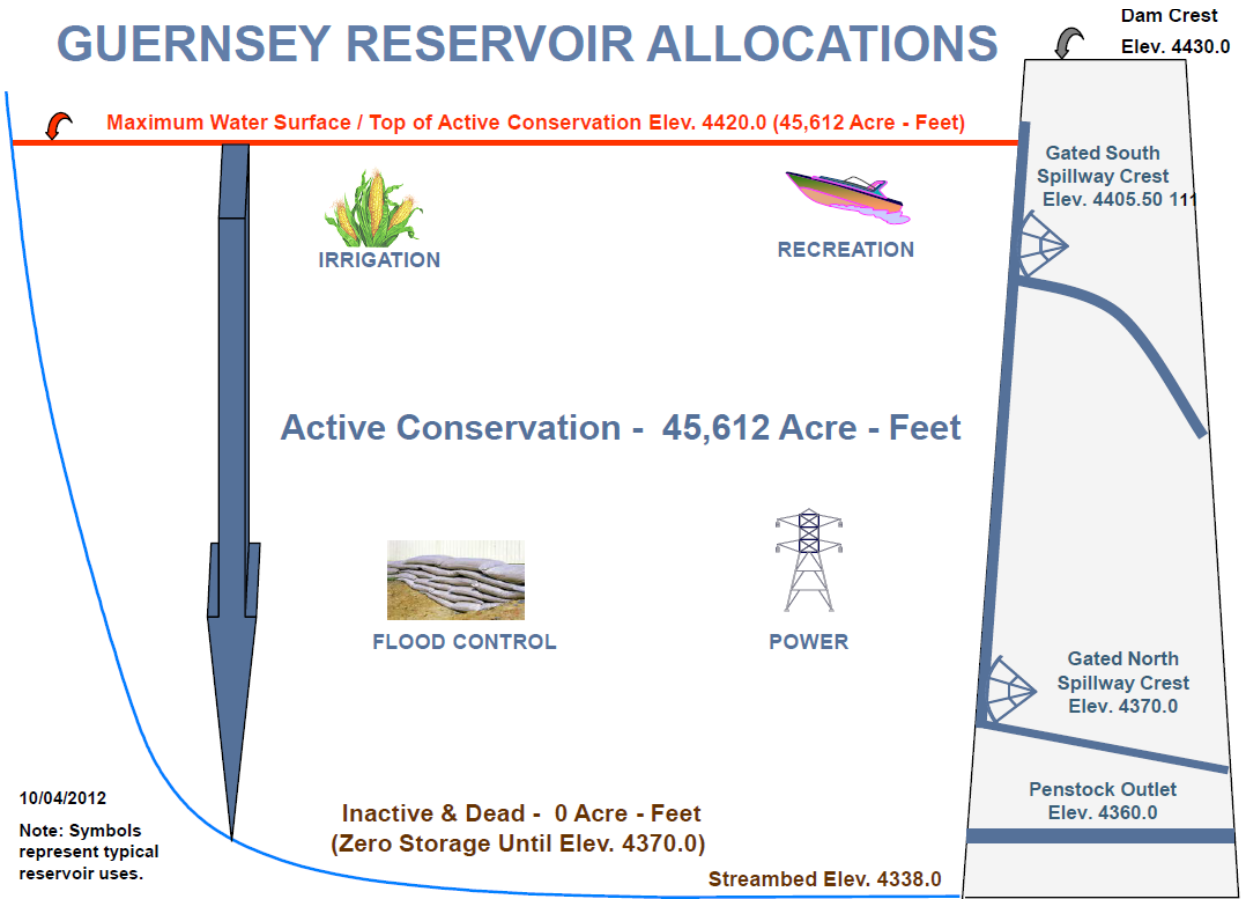

Figure 27: Guernsey Reservoir Allocation

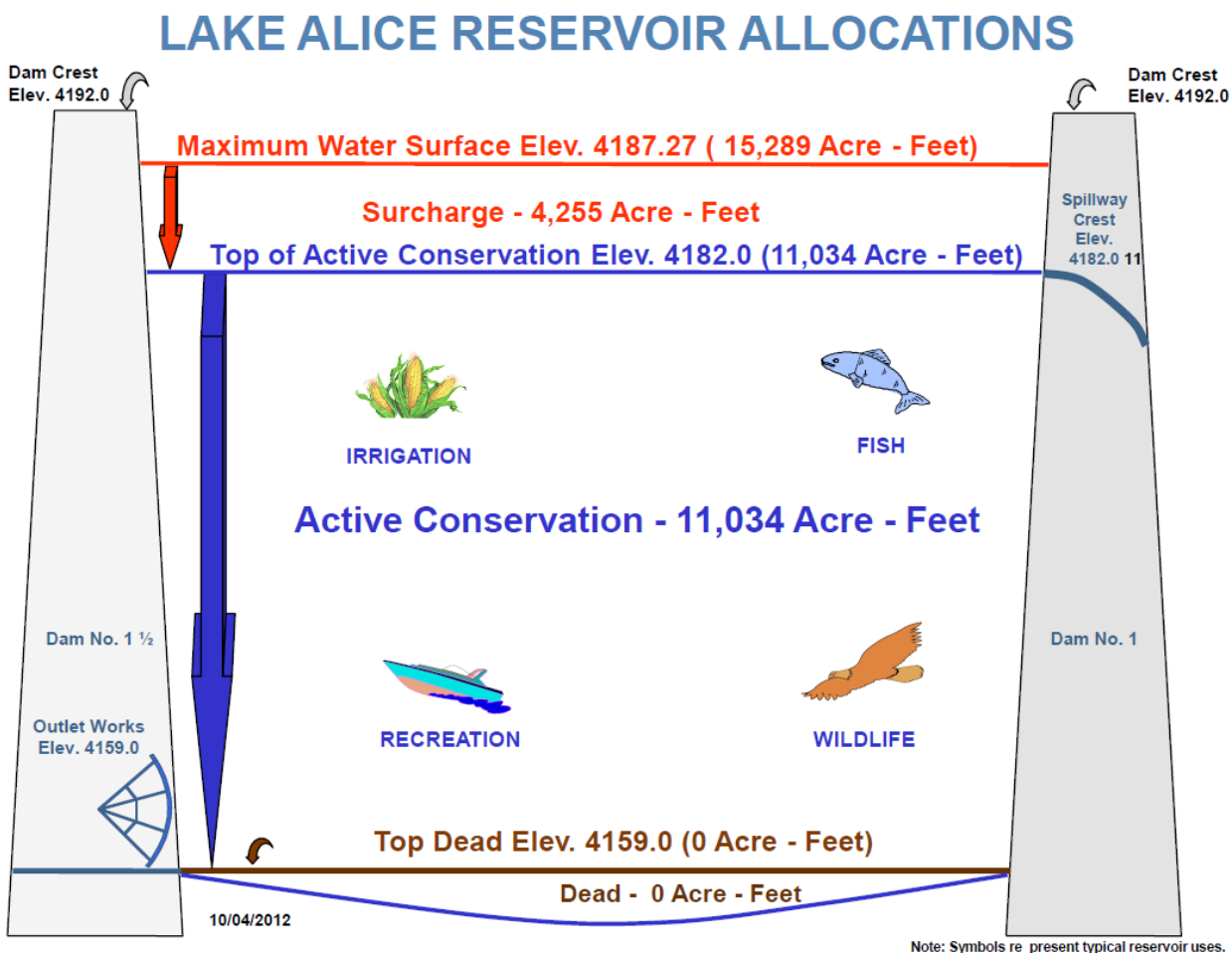

Figure 28: Lake Alice Reservoir Allocation

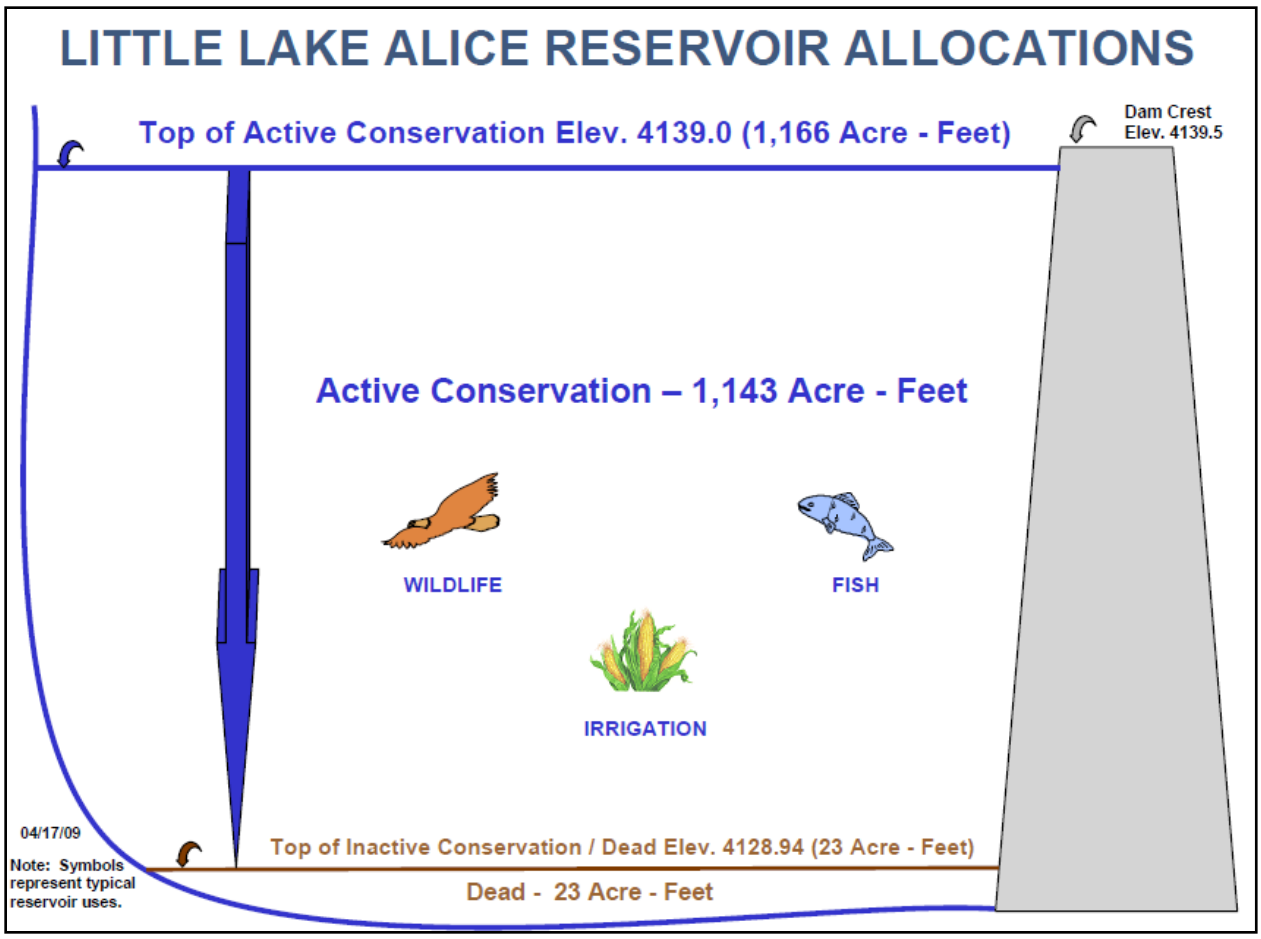

Figure 29: Little Lake Alice Reservoir Allocation

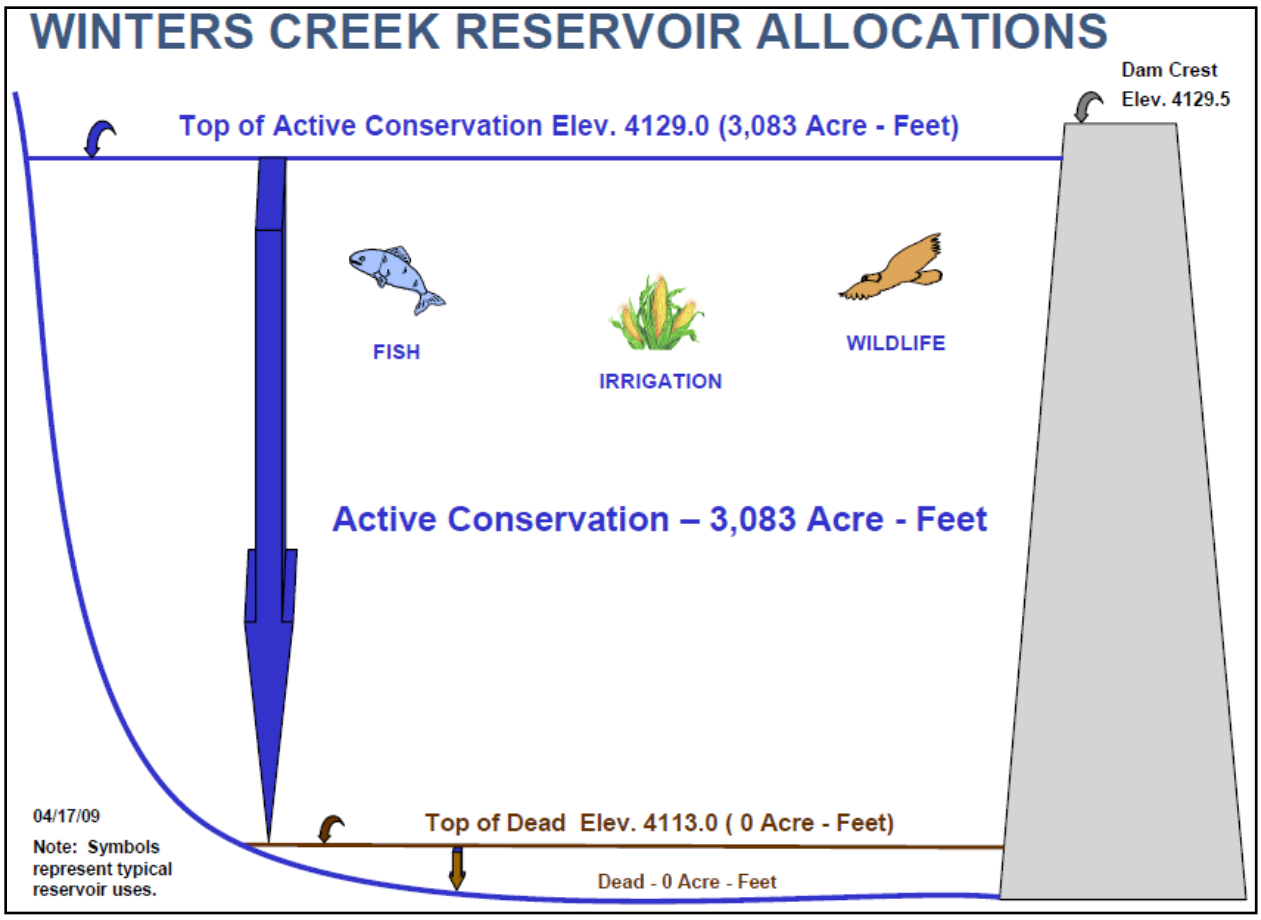

Figure 30: Winters Creek Reservoir Allocation

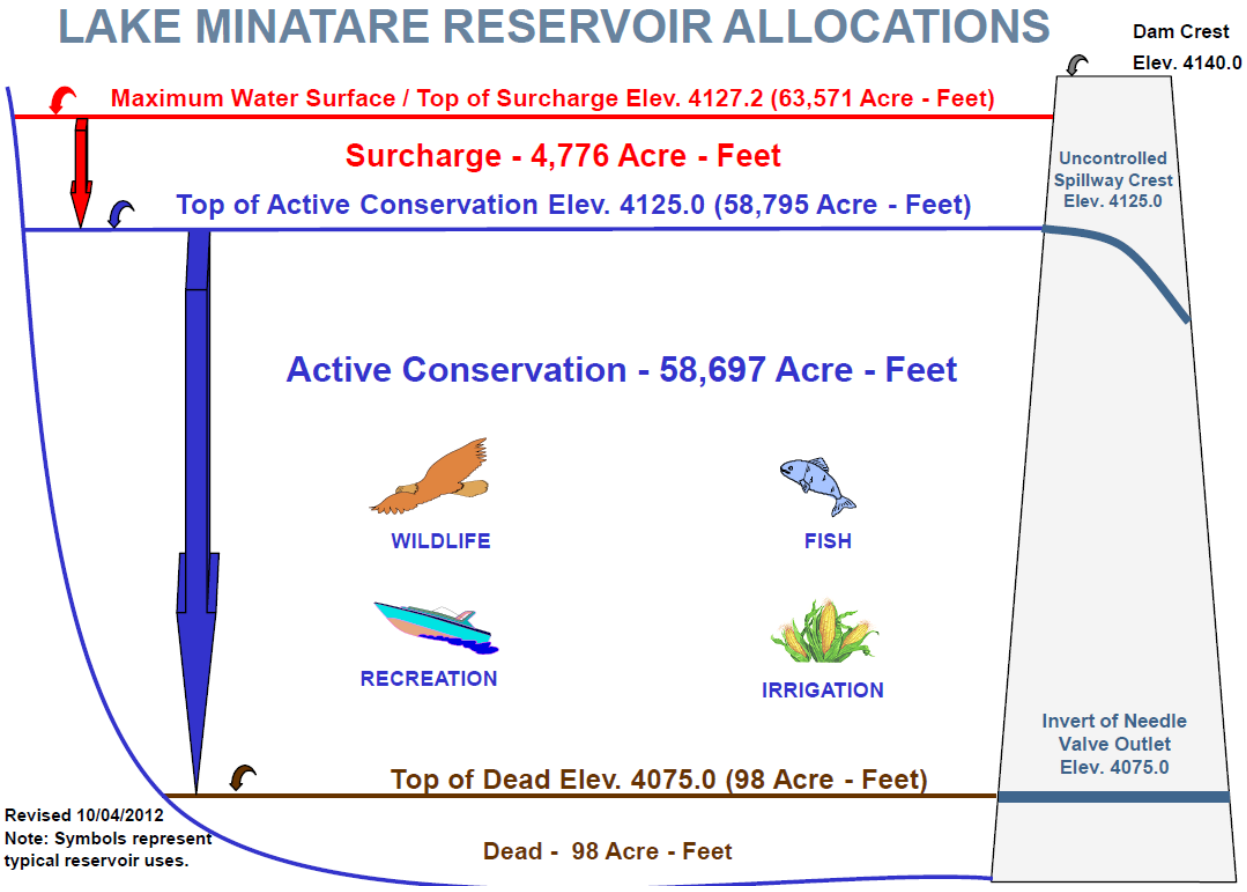

Figure 31: Lake Minatare Reservoir Allocation

Appendix E: Basin Map

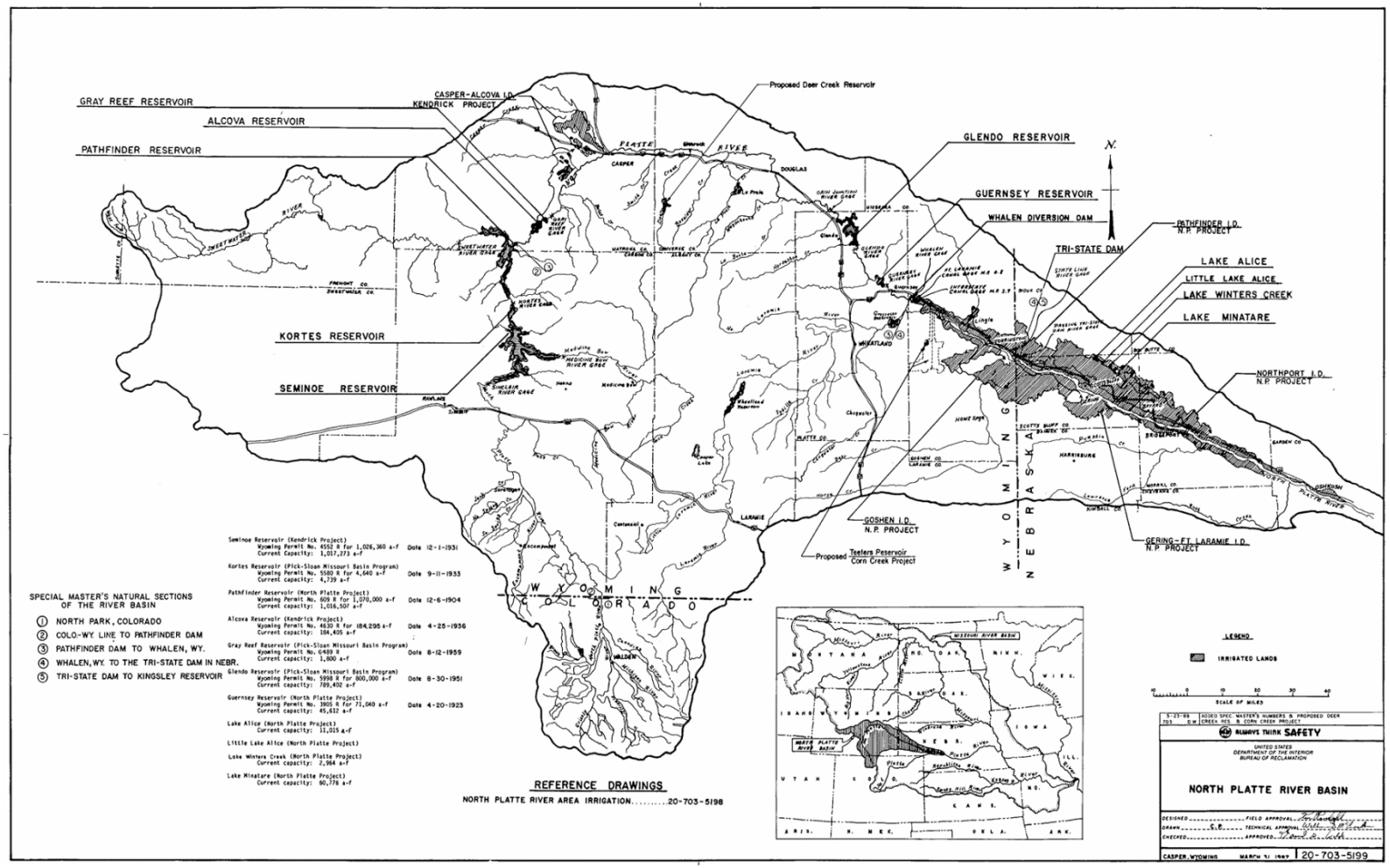

Figure 32: North Platte River Basin Map