

# RECLAMATION

*Managing Water in the West*

## Annual Operating Plans

### North Platte River Area

**Water Year 2018**

*Summary of Actual Operations*

*and*

**Water Year 2019**

*Annual Operating Plans*



U.S. Department of the Interior  
Bureau of Reclamation Great Plains  
Region Wyoming Area Office

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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 1988-2017, except for water year (WY) 2019 information which uses the years 1989-2018. 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 2018. 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 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<br>(Date Completed) | Dead<br>Storage <sup>1</sup><br>Acre-feet<br>(AF) | Active<br>Storage <sup>2</sup><br>(AF) | Total<br>Storage<br>(AF) | Minimum<br>Storage<br>(AF) | Minimum<br>Elevation<br>(feet) |
|-------------------------------|---|--|--------------------------|----------------------------|--------------------------------|
| Seminole (1939)               | 556   | 1,016,717                              | 1,017,273                | 31,670 <sup>4</sup>        | 6,239.00 <sup>4</sup>          |
| Kortes (1951)                 | 151   | 4,588                                  | 4,739                    | 1,666 <sup>4</sup>         | 6,092.00 <sup>4</sup>          |
| Pathfinder (1909)             | 7   | 1,069,993                              | 1,070,000                | 31,405 <sup>4</sup>        | 5,746.00 <sup>4</sup>          |
| Alcova (1938)                 | 91  | 184,314                                | 184,405                  | 137,610 <sup>5</sup>       | 5,479.50 <sup>5</sup>          |
| Gray Reef (1961)              | 56  | 1,744                                  | 1,800                    | 56 <sup>6</sup>            | 5,312.00 <sup>6</sup>          |
| Glendo (1958)                 | 7,010   | 756,029                                | 763,039 <sup>3</sup>     | 51,573                     | 4,570.00 <sup>7</sup>          |
| Guernsey (1927)               | 0   | 45,612                                 | 45,612                   | 0                          | 4,370.00 <sup>8</sup>          |
| <b>Total</b>                  | <b>7,871</b>                                      | <b>3,078,997</b>                       | <b>3,086,868</b>         | <b>253,980</b>             |                                |

<sup>1</sup> Storage capacity below elevation of lowest outlet

<sup>2</sup> Total storage minus dead storage

<sup>3</sup> 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)

<sup>4</sup> Minimum water surface elevation and capacity required for power generation this level is the top of inactive capacity

<sup>5</sup> 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.

<sup>6</sup> Top of dead capacity – spillway crest

<sup>7</sup> Minimum water surface elevation for power generation

<sup>8</sup> 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 2018. Table 2 depicts A Summary of Reservoir Storage Content for water year (WY) 2018 (end of month). Table 9 depicts the Actual Reservoir Operations for WY 2018.



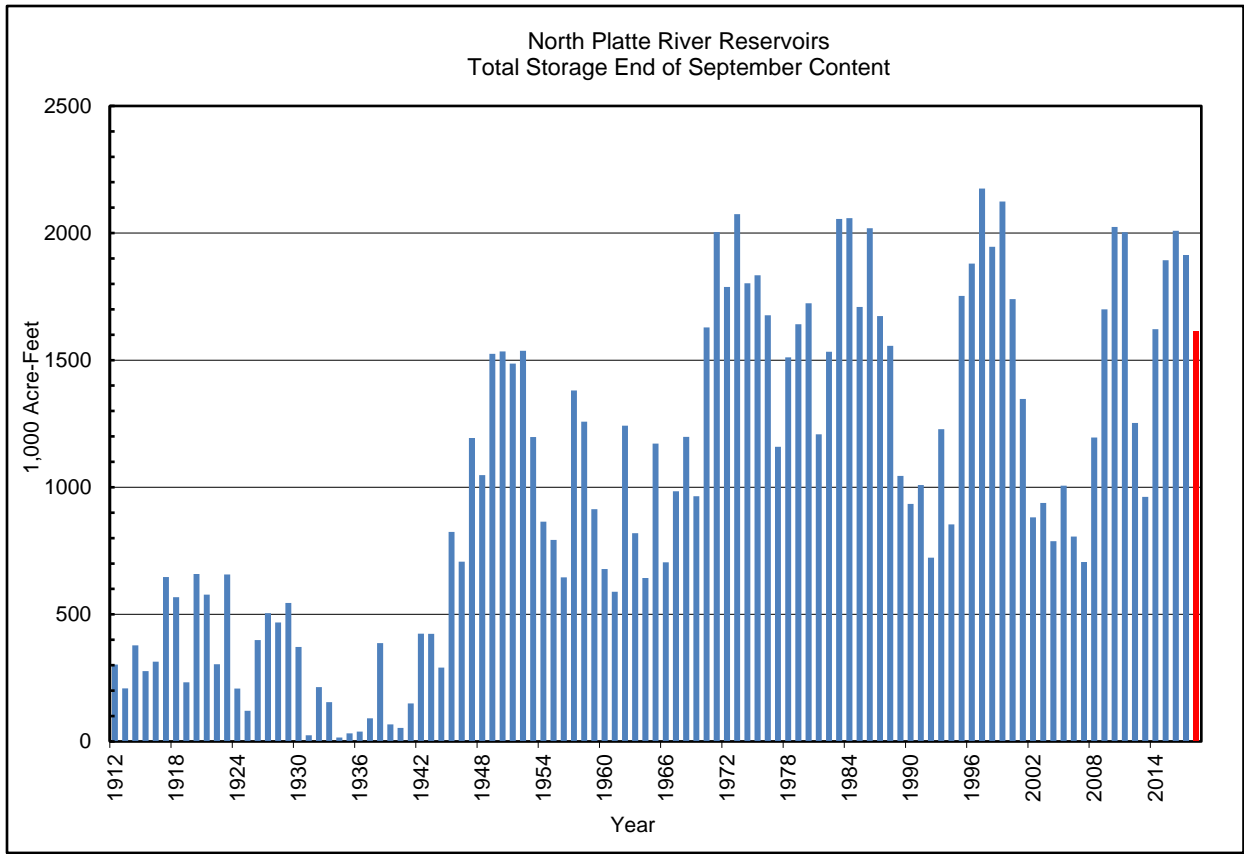
**Table 2** Summary of Reservoir Storage Content for Water Year 2018 (End of Month)

| Seminoe Reservoir |         |                     | Pathfinder Reservoir |         |                     | Alcova Reservoir <sup>3</sup> |           |                     |
|-------------------|---------|---------------------|----------------------|---------|---------------------|-------------------------------|-----------|---------------------|
| Month             | Storage | Record <sup>1</sup> | Month                | Storage | Record              | Month                         | Storage   | Record <sup>1</sup> |
| October           | 813,118 |                     | October              | 815,787 | 8                   | October                       | 157,622   |                     |
| November          | 817,550 |                     | November             | 819,770 | 9                   | November                      | 156,967   |                     |
| December          | 811,589 | 9                   | December             | 824,148 |                     | December                      | 156,696   |                     |
| January           | 808,875 | 7                   | January              | 830,650 |                     | January                       | 156,809   |                     |
| February          | 805,494 | 4                   | February             | 838,541 |                     | February                      | 156,133   |                     |
| March             | 798,096 | 3                   | March                | 845,319 |                     | March                         | 157,917   |                     |
| April             | 711,694 | 10                  | April                | 917,718 |                     | April                         | 179,912   |                     |
| May               | 772,642 |                     | May                  | 912,995 |                     | May                           | 180,303   |                     |
| June              | 772,152 |                     | June                 | 844,737 |                     | June                          | 180,107   |                     |
| July              | 744,073 |                     | July                 | 689,141 |                     | July                          | 180,156   |                     |
| August            | 703,522 |                     | August               | 611,027 |                     | August                        | 180,229   |                     |
| September         | 672,711 |                     | September            | 591,731 |                     | September                     | 180,034   |                     |
| Glendo Reservoir  |         |                     | Guernsey Reservoir   |         |                     | Total System <sup>2</sup>     |           |                     |
| Month             | Storage | Record <sup>1</sup> | Month                | Storage | Record <sup>1</sup> | Month                         | Storage   | Record <sup>1</sup> |
| October           | 149,382 |                     | October              | 11,566  |                     | October                       | 1,953,400 |                     |
| November          | 187,485 |                     | November             | 13,520  |                     | November                      | 2,001,200 |                     |
| December          | 223,007 |                     | December             | 16,146  |                     | December                      | 2,037,600 |                     |
| January           | 264,107 |                     | January              | 19,131  |                     | January                       | 2,085,600 |                     |
| February          | 297,329 |                     | February             | 21,745  |                     | February                      | 2,125,400 |                     |
| March             | 357,432 |                     | March                | 24,803  |                     | March                         | 2,190,100 |                     |
| April             | 402,780 |                     | April                | 28,537  |                     | April                         | 2,246,700 |                     |
| May               | 439,185 |                     | May                  | 28,517  |                     | May                           | 2,339,900 |                     |
| June              | 432,062 |                     | June                 | 28,616  |                     | June                          | 2,264,100 |                     |
| July              | 325,287 |                     | July                 | 28,974  |                     | July                          | 1,974,000 |                     |
| August            | 167,781 |                     | August               | 28,122  |                     | August                        | 1,697,000 |                     |
| September         | 158,013 | 5                   | September            | 5,781   |                     | September                     | 1,614,200 |                     |

<sup>1</sup> Record is the 30 year period from 1988-2017

<sup>2</sup> Total North Platte system includes storage in Seminoe, Kortes, Pathfinder, Alcova, Gray Reef, Glendo and Guernsey Reservoirs

<sup>3</sup> 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)

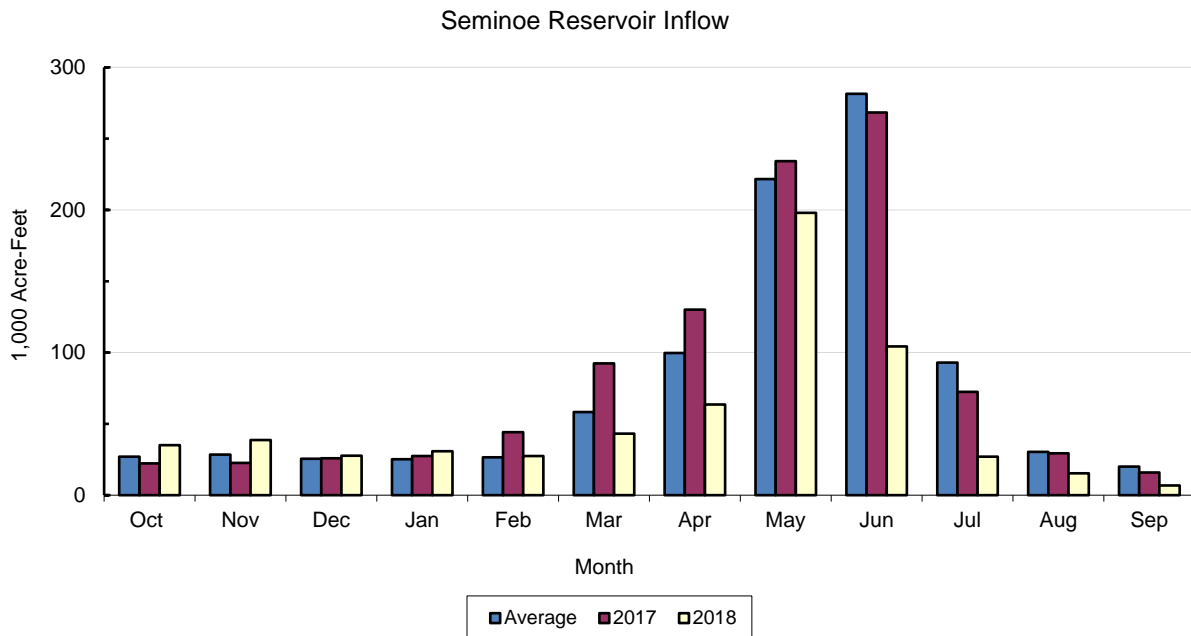


**Figure 1** North Platte River Reservoirs Total Storage End of September Content (1912-2018)

# System Operations Water Year 2018

## Seminole Reservoir Inflow

Seminole Reservoir inflows were below the 30 year average for the majority of the year. A total of 617,758 acre-feet (AF) or 66 percent of the 30 year average entered the system above Seminole Reservoir during the water year. The monthly inflows ranged from a high of 136 percent of average in November 2017 to a low of 29 percent in July 2018. The actual April through July inflow totaled 392,828 AF, which was 56 percent of the 30 year average of 695,700 AF. The Seminole computed inflow peaked for the water year on May 28, 2018, at 4,641 cubic feet per second (cfs). Figure 2 depicts a comparison of average, WY 2017 and WY 2018 monthly inflows.



**Figure 2** Seminole Reservoir Inflow

## Seminole Reservoir Storage and Releases

Seminole 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 2018, Seminole Reservoir had a storage content of 813,288 AF, which was 136 percent of average and 79 percent of capacity. The maximum Seminole Reservoir content was reached on November 28, 2017, at 818,062 AF. At the end of WY 2018, Seminole Reservoir storage content was 672,711 AF, which was 113 percent of average and 66 percent of capacity. See Figure 3 for a comparison of average, WY 2017 and WY 2018 monthly storage.

Releases from Seminole Dam averaged approximately 539 cfs in October 2017. The release remained at approximately 538 cfs through January 2018; to a maximum of 2,775 cfs on May 6, 2018. The release was approximately 800 cfs through out August and decreased to 530 cfs by September 9. The flows remained at 530 cfs through the rest of September. Table 3 depicts a summary of Seminole Reservoir information for WY 2018.

**Table 3** Seminole Reservoir Hydrologic Data for Water Year 2018

| 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       |              |                         |

| Storage-Elevation Data     | Elevation (FT) | Storage (AF) | Date                   |
|----------------------------|----------------|--------------|------------------------|
| Beginning of water year    | 6,346.05       | 813,288      | 30-Sep-17 <sub>2</sub> |
| End of water year          | 6,337.12       | 672,711      | 30-Sep-18              |
| Annual Low                 | 6,337.12       | 672,711      | 30-Sep-18              |
| Historic Low <sup>1</sup>  | 6,253.30       | 56,390       | 20-Apr-61              |
| Annual High                | 6,346.33       | 818,062      | 28-Nov-17              |
| Historic High <sup>1</sup> | 6,359.29       | 1,073,050    | 20-Jun-49              |

<sup>1</sup> The daily records for this table are only available from water year 1946.

<sup>2</sup> Represents 0001 hours on October 1

| Inflow-Outflow Data | Inflow <sup>3</sup> | Date             | Outflow | Date             |
|---------------------|---------------------|------------------|---------|------------------|
| Annual Total (AF)   | 617,758             | Oct. 17– Sep. 18 | 715,691 | Oct. 17– Sep. 18 |
| Daily Peak (CFS)    | 4,641               | 28-May-18        | 2,775   | 6-May-18         |
| Daily Minimum (CFS) | 7                   | 27-Jul-18        | 516     | 2-Oct-17         |

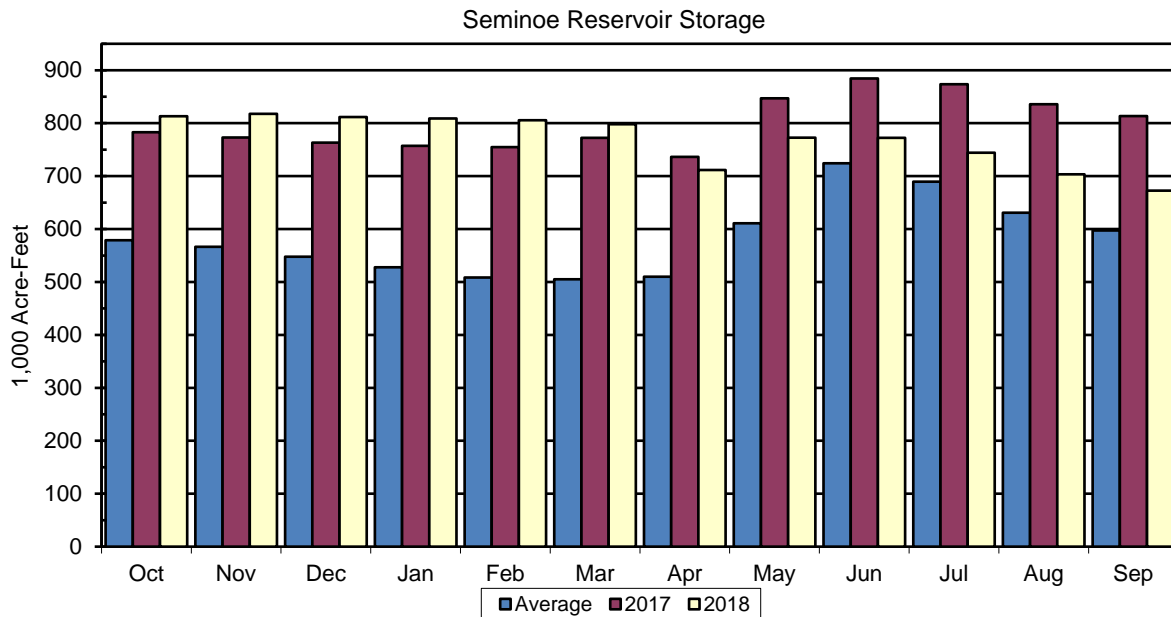
<sup>3</sup> Inflows are a computed number.

<sup>4</sup> Daily peak and minimum are releases to the river.

| Month     | Inflow |                                 | Outflow |                                 | Content <sup>6</sup> |                                 |
|-----------|--------|---------------------------------|---------|---------------------------------|----------------------|---------------------------------|
|           | KAF    | Percent of Average <sup>5</sup> | KAF     | Percent of Average <sup>5</sup> | KAF                  | Percent of Average <sup>5</sup> |
| October   | 35.0   | 130                             | 33.1    | 89                              | 813.1                | 140                             |
| November  | 38.6   | 136                             | 32.2    | 82                              | 817.6                | 144                             |
| December  | 27.7   | 109                             | 33.0    | 76                              | 811.6                | 148                             |
| January   | 30.8   | 122                             | 32.9    | 75                              | 808.9                | 153                             |
| February  | 27.5   | 103                             | 29.9    | 66                              | 805.5                | 158                             |
| March     | 43.1   | 74                              | 49.7    | 83                              | 798.1                | 158                             |
| April     | 63.5   | 64                              | 145.5   | 159                             | 711.7                | 140                             |
| May       | 198.0  | 89                              | 132.2   | 113                             | 772.6                | 126                             |
| June      | 104.3  | 37                              | 96.0    | 60                              | 772.2                | 107                             |
| July      | 27.0   | 29                              | 50.2    | 42                              | 744.1                | 108                             |
| August    | 15.3   | 50                              | 49.2    | 60                              | 703.5                | 111                             |
| September | 6.8    | 34                              | 31.8    | 65                              | 672.7                | 113                             |
| Annual    | 617.8  | 66                              | 715.7   |                                 |                      |                                 |

<sup>5</sup> The 30 year average of the period (1988-2017)

<sup>6</sup> End of month



**Figure 3** Seminoe Reservoir Storage

## 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.

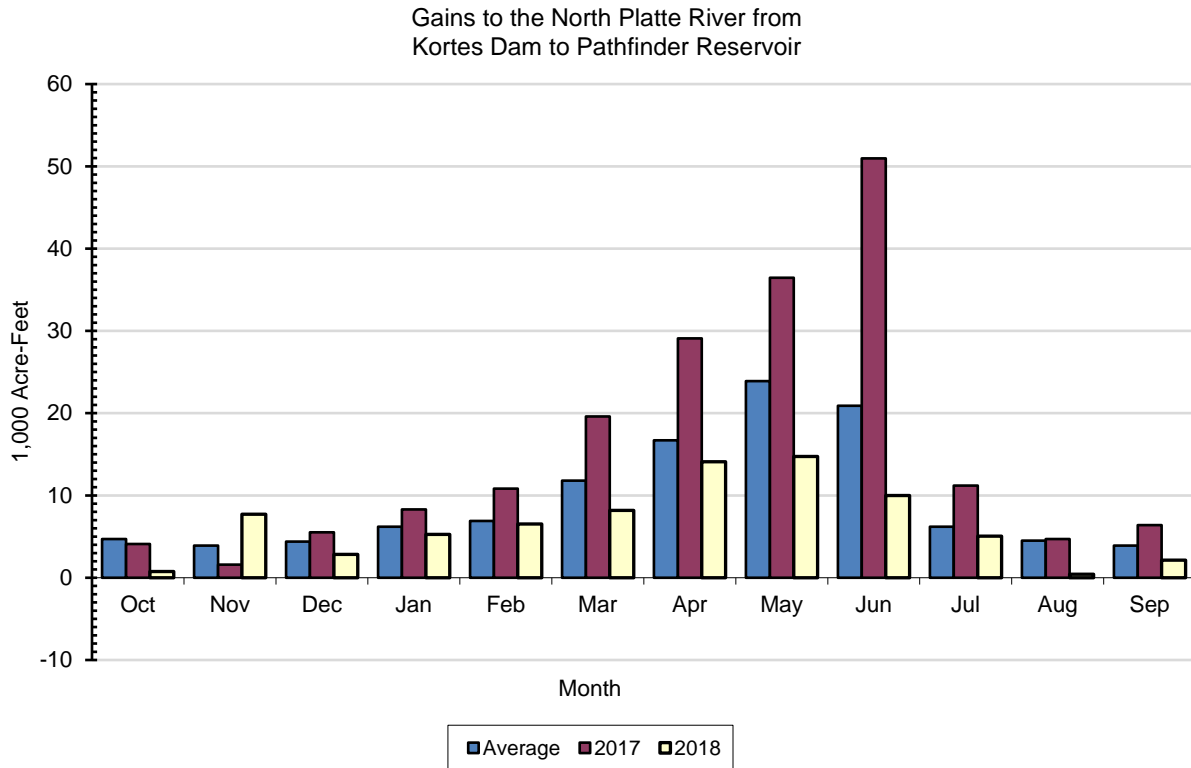
The spillway on the right abutment consists of an uncontrolled crest with a concrete-lined tunnel and has a capacity of 50,000 cfs.

Senate Bill 2553 which was passed in the 90 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 539 cfs in October 2017 and increased to approximately 1,000 cfs in late March 2018 and remained there until early April. An increase was made in early April to approximately 2,700 cfs and then decreased later in May to approximately 2,000 cfs. The Kortes Dam release peaked at 2,720 cfs on May 18, 2018. Releases were decreased to approximately 1,500 cfs by the end of June and decreased to approximately 800 cfs on July 21, 2018 which continued into August. By early September WY 2018 the flows through Kortes Powerplant were approximately 530 cfs.

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

Kortes Dam to Pathfinder Dam river gains were below average for 11 months of WY 2018. The Kortes Dam to Pathfinder Dam river gains ranged from 198 percent of average in November 2017 to 9 percent in August WY 2018. The April through July river gains were 43,873 AF, which is 65 percent of the 30 year average of 67,800 AF. Figure 4 depicts a comparison of average, WY 2017 and WY 2018 monthly river gains.



**Figure 4** Gains to the North Platte River from Kortes Dam to Pathfinder Reservoir

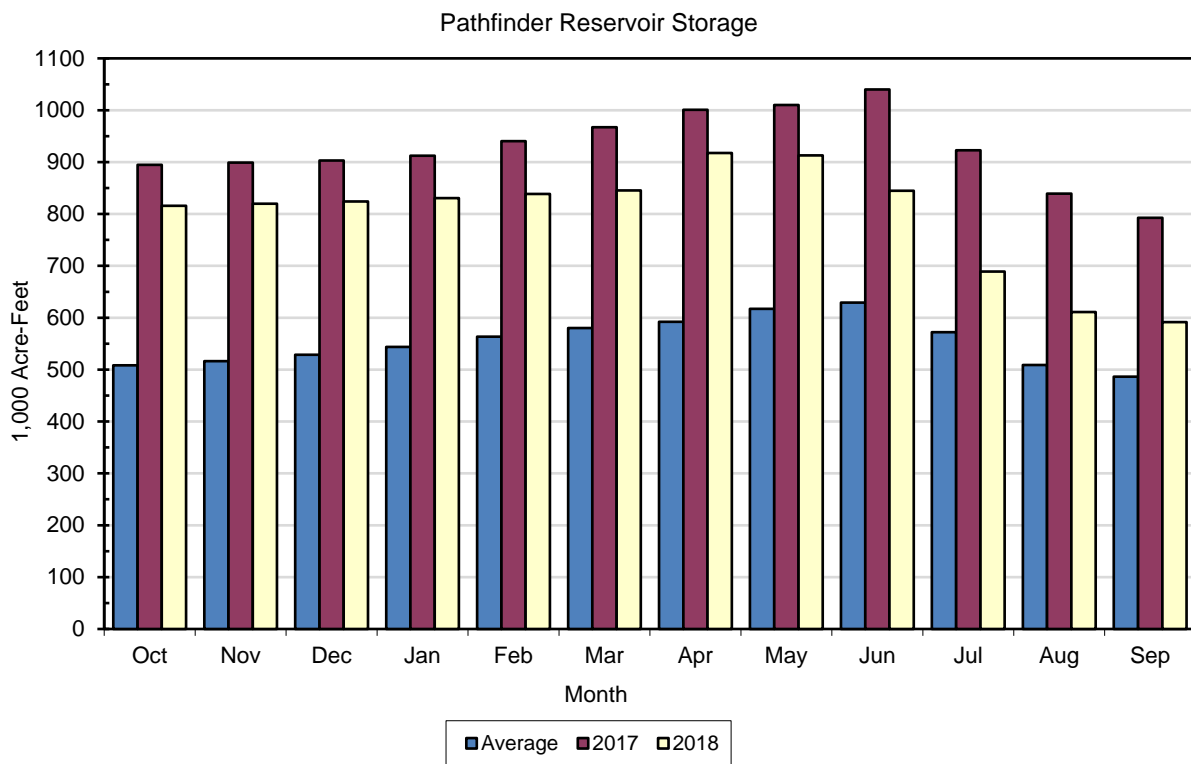
## Pathfinder Reservoir Storage and Releases

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. Re-conditioning of Unit 2 of the Fremont Canyon Powerplant was completed in August 2012. Re-conditioning 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 2018, storage in Pathfinder Reservoir was 792,751 AF, which was 163 percent of average and 74 percent of capacity. Pathfinder storage was above the 30 year average for WY

2018 (See Figure 5). The maximum Pathfinder Reservoir content for the water year peaked on May 7, 2018, at 930,741 AF which is 87 percent of capacity. The water year ended with 591,731 AF of water in storage in Pathfinder Reservoir, which was 122 percent of average and 55 percent of capacity. A continual release of water from Pathfinder Reservoir during October was maintained during the gradual drawdown of Alcova Reservoir to its winter operating range. 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 2,228 cfs on July 12, 2018. Table 4 depicts a summary of Pathfinder Reservoir storage for WY 2018.



**Figure 5** Pathfinder Reservoir Storage

**Table 4** Pathfinder Reservoir Hydrologic Data for Water Year 2018

| 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       |              |                         |



| Storage-Elevation Data       | Elevation (FT) | Storage (AF) | Date                     |
|------------------------------|----------------|--------------|--------------------------|
| Beginning of water year      | 5,839.07       | 792,751      | Oct 1, 2017 <sup>3</sup> |
| End of water year            | 5,826.89       | 591,731      | 30-Sep-18                |
| Annual Low                   | 5,826.89       | 591,731      | 30-Sep-18                |
| Historic Low <sup>2, 3</sup> | 5,690.00       | 0            | 9-Sep-58                 |
| Annual High                  | 5,846.09       | 930,741      | 7-May-18                 |
| Historic High <sup>1</sup>   | 5,853.49       | 1,093,275    | 2-Jun-16                 |

<sup>1</sup> Daily records for this table are only available from water year 1946

<sup>2</sup> From September 1958 through January 1959, Pathfinder Reservoir was drained for construction of Fremont Canyon tunnel.

<sup>3</sup> Represents 0001 hours on October 1.

| Inflow-Outflow Data | Inflow  | Date                 | Outflow | Date                  |
|---------------------|---------|----------------------|---------|-----------------------|
| Annual Total (AF)   | 793,192 | Oct. 2017 –Sep. 2018 | 928,601 | Oct. 2017 – Sep. 2018 |
| Daily Peak (CFS)    | 4,190   | 23-Apr-18            | 3,375   | 22-Jul-18             |
| Daily Minimum (CFS) | 94      | 29-Nov-17            | 86      | 30-Oct-17             |

<sup>4</sup> 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 2017 that resulted in a peak flow of 2,038 cfs.

| Month     | Gain from Kortess |                                 | Inflow <sup>6</sup> |                                 | Outflow |                                 | Content <sup>8</sup> |                                 |
|-----------|-------------------|---------------------------------|---------------------|---------------------------------|---------|---------------------------------|----------------------|---------------------------------|
|           | KAF               | Percent of Average <sup>5</sup> | KAF                 | Percent of Average <sup>5</sup> | KAF     | Percent of Average <sup>5</sup> | KAF                  | Percent of Average <sup>5</sup> |
| October   | 0.8               | 17                              | 33.9                | 81                              | 8.4     | 57                              | 815.8                | 161                             |
| November  | 7.7               | 197                             | 39.9                | 92                              | 30.0    | 89                              | 819.8                | 159                             |
| December  | 2.8               | 64                              | 35.8                | 75                              | 30.8    | 90                              | 824.2                | 156                             |
| January   | 5.3               | 85                              | 38.2                | 76                              | 31.0    | 90                              | 830.7                | 153                             |
| February  | 6.5               | 94                              | 36.4                | 70                              | 27.4    | 88                              | 838.5                | 149                             |
| March     | 8.2               | 69                              | 57.9                | 81                              | 50.1    | 94                              | 845.3                | 146                             |
| April     | 14.1              | 84                              | 159.5               | 147                             | 80.1    | 87                              | 917.7                | 155                             |
| May       | 14.7              | 62                              | 146.9               | 104                             | 143.5   | 130                             | 913                  | 148                             |
| June      | 10                | 48                              | 106.0               | 58                              | 161.9   | 100                             | 844.7                | 134                             |
| July      | 5.1               | 82                              | 55.2                | 44                              | 199.9   | 115                             | 689.1                | 120                             |
| August    | 0.4               | 9                               | 49.6                | 57                              | 119.4   | 84                              | 611                  | 120                             |
| September | 2.1               | 54                              | 33.9                | 64                              | 46.2    | 65                              | 591.7                | 122                             |
| Annual    | 77.7              | 68                              | 793.2               | 79                              | 928.6   | 97                              |                      |                                 |

<sup>5</sup> 30 year average of the period (1988-2017)

<sup>6</sup> The inflow includes the gain from Kortess Dam to Pathfinder Dam.

<sup>7</sup> Represents a negative number that makes the percentage meaningless.

<sup>8</sup> 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 a full release capability 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 and at 5,488 feet 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.

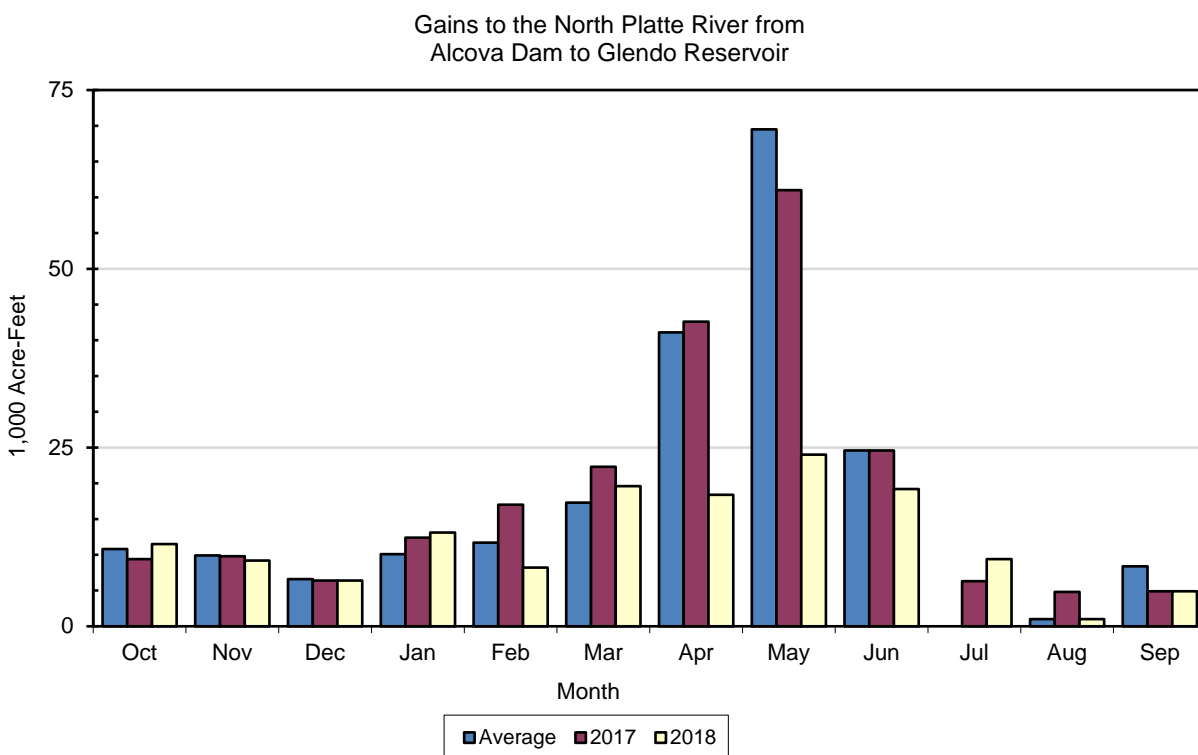
The annual drawdown of Alcova Reservoir began on October 1, 2017, and continued through October 31, 2017, when the reservoir reached its normal winter operating range of 5,488 ± one foot. The refill of Alcova Reservoir was initiated on March 31, 2018. The water surface elevation was raised to 5,498 feet on April 27, 2018, 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 re-regulate 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.

The Gray Reef releases were maintained at 500 cfs from October 1, 2017 through March 11, 2018. At the request of the Wyoming Game and Fish Department, a series of flushing flows were initiated on March 12 to March 21, 2018 for the purpose of flushing silt from spawning gravels used by trout. The flows were varied each day from 500 cfs to 2,000 cfs on the first day to clear potential ice problems, then 500 cfs to 4,000 for the remaining days. At the completion of the flushing flows, releases from Gray Reef were brought down to 500 cfs until April 4, 2018. 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 occurred on June 22, 2018, at 3,005 cfs.

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

River gains from Alcova Dam to Glendo Reservoir were below average for nine months of WY-2018. The Alcova Dam to Glendo Reservoir river gains ranged from a high of 130 percent in January 2018 to a low of 35 percent in May 2018. The 30-year average gain in July is negative, making a comparison to the July 2018 gain meaningless. The April through July gain was 71,031 AF, which was 53 percent of average. The maximum computed daily river gain of 1,024 cfs occurred on May 30, 2018, and the daily computed Glendo Reservoir inflow peaked on July 17, 2018, at 4,287 cfs. Figure 6 depicts a comparison of average, WY 2017 and WY 2018 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, (six 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 111,946 AF at the beginning of WY 2018, which was 89 percent of average and 23 percent of the active conservation of 492,022 AF. Water releases from Glendo Reservoir were initiated on April 17, 2018, in order to move water to the Inland Lakes. The reservoir reached a maximum storage for the year of 462,096 AF (elevation 4,632.44 feet) on June 8, 2018. At the end of the water year, Glendo Reservoir contained 158,013 AF of water (water surface elevation 4,596.05 feet) which was 123 percent of average and 31 percent of top of active conservation. Figure 7 depicts WY 2017 and WY 2018 end of month reservoir storage compared to average. Table 5 depicts a summary of Glendo Reservoir information for WY 2018.

**Table 5** Glendo Reservoir Hydrologic Data for Water Year 2018

| 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           | 4,653.00       | 763,039      | 271,017                 |
| Control                          | 4,669.00       | 1,092,290    | 329,251                 |
| Maximum water surface(surcharge) |                |              |                         |
| Crest of Dam (without Camber)    | 4,675.00       |              |                         |

| Storage-Elevation Data  | Elevation (FT) | Storage (AF) | Date                     |
|-------------------------|----------------|--------------|--------------------------|
| Beginning of water year | 4,586.90       | 112,123      | Oct 1, 2017 <sup>1</sup> |
| End of water year       | 4,596.05       | 158,013      | Sep 30, 2018             |
| Annual Low              | 4,586.90       | 112,123      | Oct 1, 2017              |
| Historic Low            | 4,548.10       | 15,140       | Sep 28, 1966             |
| Annual High             | 4,632.44       | 487,478      | June 8, 2018             |
| Historic High           | 4,650.94       | 758,830      | May 28, 1973             |

<sup>1</sup> Represents 0001 hours on October 1.

| Inflow-Outflow Data | Inflow  | Date             | Outflow <sup>2</sup> | Date             |
|---------------------|---------|------------------|----------------------|------------------|
| Annual Total (AF)   | 967,200 | Oct. 2017 – Sep. |                      | Oct. 2017 – Sep. |
| Daily Peak (CFS)    | 4,287   | 2018             | 896,300              | 2018             |
| Daily Minimum (CFS) | 34      | June 17, 2018    |                      | July 25, 2018    |

|                           |  |              |                      |                      |
|---------------------------|--|--------------|----------------------|----------------------|
| Peak Bypass Release (CFS) |  | Feb 22, 2018 | 7,998                | Oct 26, 2018         |
| Total Bypass Release (AF) |  |              | 10 <sup>4</sup>      | July 25, 2018        |
|                           |  |              | 4,532                | Oct. 2017- Sep. 2018 |
|                           |  |              | 115,519 <sup>3</sup> |                      |

<sup>2</sup> Includes the average daily release of approximately 25 cfs from the low flow outlet works for April-September

<sup>3</sup> A low flow outlet works was completed in 1993 to allow for a release of 25 cfs.

<sup>4</sup> The low flow out of Glendo Reservoir is due to the work being done on the spillway gates at Guernsey Dam.

| Month     | Gain from Alcova |                                 | Inflow <sup>7</sup> |                                 | Outflow |                                 | Content <sup>8</sup> |                                 |
|-----------|------------------|---------------------------------|---------------------|---------------------------------|---------|---------------------------------|----------------------|---------------------------------|
|           | KAF              | Percent of Average <sup>5</sup> | KAF                 | Percent of Average <sup>5</sup> | KAF     | Percent of Average <sup>5</sup> | KAF                  | Percent of Average <sup>5</sup> |
| October   | 11.5             | 107                             | 40.2                | 79                              | 1.8     | 93 <sup>6</sup>                 | 149.4                | 86                              |
| November  | 9.2              | 93                              | 40.2                | 90                              | 1.5     | 104 <sup>6</sup>                | 187.5                | 86                              |
| December  | 6.4              | 97                              | 37.3                | 91                              | 1.5     | 92 <sup>6</sup>                 | 223.0                | 87                              |
| January   | 13.1             | 130                             | 43.1                | 99                              | 1.6     | 96 <sup>6</sup>                 | 264.1                | 89                              |
| February  | 8.2              | 70                              | 35.3                | 85                              | 1.5     | 80 <sup>6</sup>                 | 297.3                | 88                              |
| March     | 19.6             | 113                             | 62.9                | 95                              | 1.7     | 10 <sup>6</sup>                 | 357.4                | 92                              |
| April     | 18.4             | 45                              | 65.5                | 62                              | 18.4    | 35                              | 402.8                | 92                              |
| May       | 24.0             | 35                              | 145.8               | 89                              | 106.2   | 77                              | 439.2                | 93                              |
| June      | 19.3             | 78                              | 156.3               | 94                              | 158.4   | 86                              | 432.1                | 92                              |
| July      | 9.4              | NA <sup>4</sup>                 | 188.1               | 121                             | 289.5   | 93                              | 325.3                | 104                             |
| August    | 1.0              | 101                             | 113.6               | 87                              | 267.5   | 92                              | 167.8                | 111                             |
| September | 4.9              | 58                              | 38.8                | 52                              | 46.6    | 48                              | 158.0                | 125                             |
| Annual    | 145              | 69                              | 967.2               | 90                              | 896.2   | 82                              |                      |                                 |

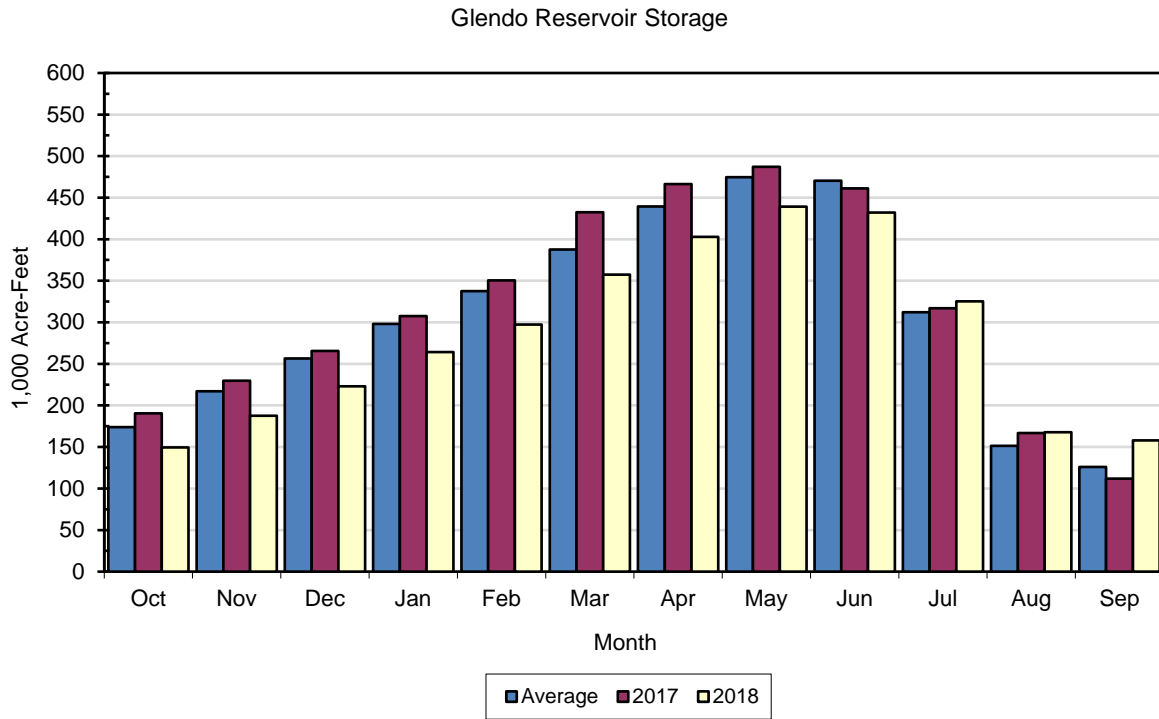
<sup>4</sup> Represents a negative number that makes the percentage meaningless.

<sup>5</sup> 30 year average is the period (1988-2017)

<sup>6</sup> 23 year average is the period (1994-2017) In 1993 a low flow valve was installed at Glendo Dam which allowed the release of 25 cfs during the non irrigation season. Therefore, a 24 year average is used for the months of October through March.

<sup>7</sup> Inflow include the gain from Alcova Dam to Glendo Dam.

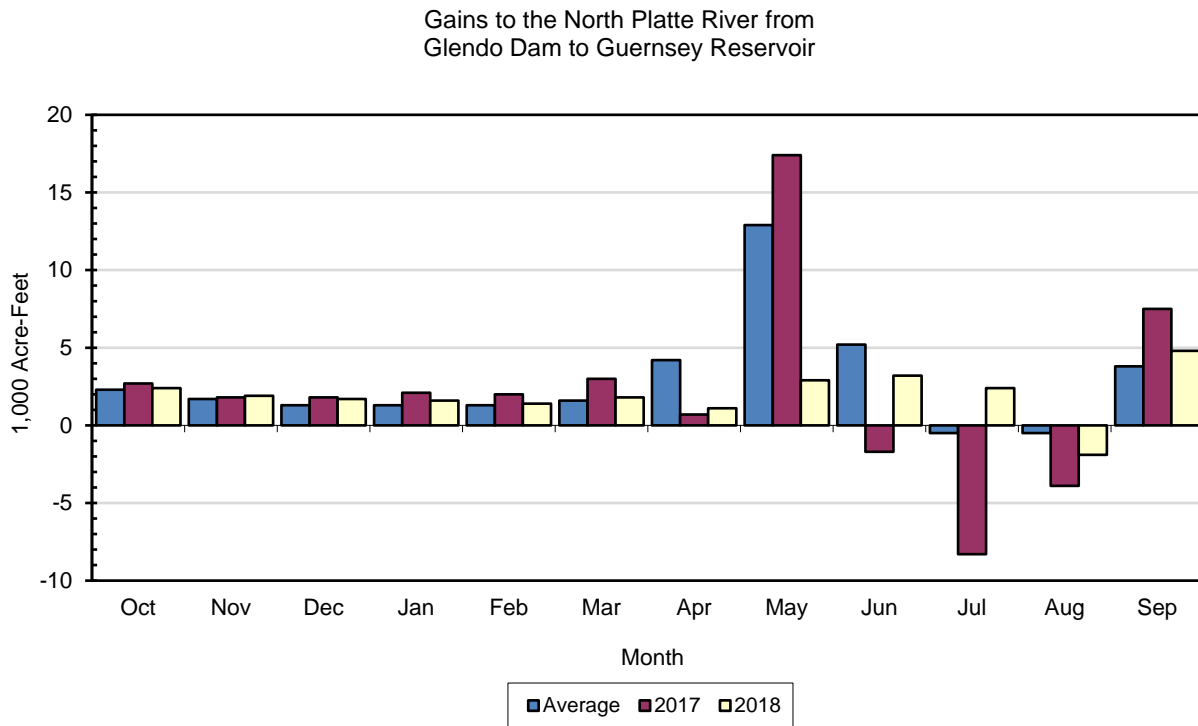
<sup>8</sup> End of month



**Figure 7** Glendo Reservoir Storage

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

The river gains between Glendo Dam and Guernsey Dam during WY 2018 were at or above average for seven months of the year. April, June, July and August gains were below average. The Glendo Dam to Guernsey Reservoir river gains ranged from a high of 131 percent of average in December 2017 to a low of 22 percent in May 2018. The month of August was negative which made a percentage value meaningless. On July 25, 2018, the daily computed inflow to Guernsey Reservoir peaked at 8,526 cfs. Figure 8 depicts a comparison of average, WY 2017 and WY 2018 monthly river gains.



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

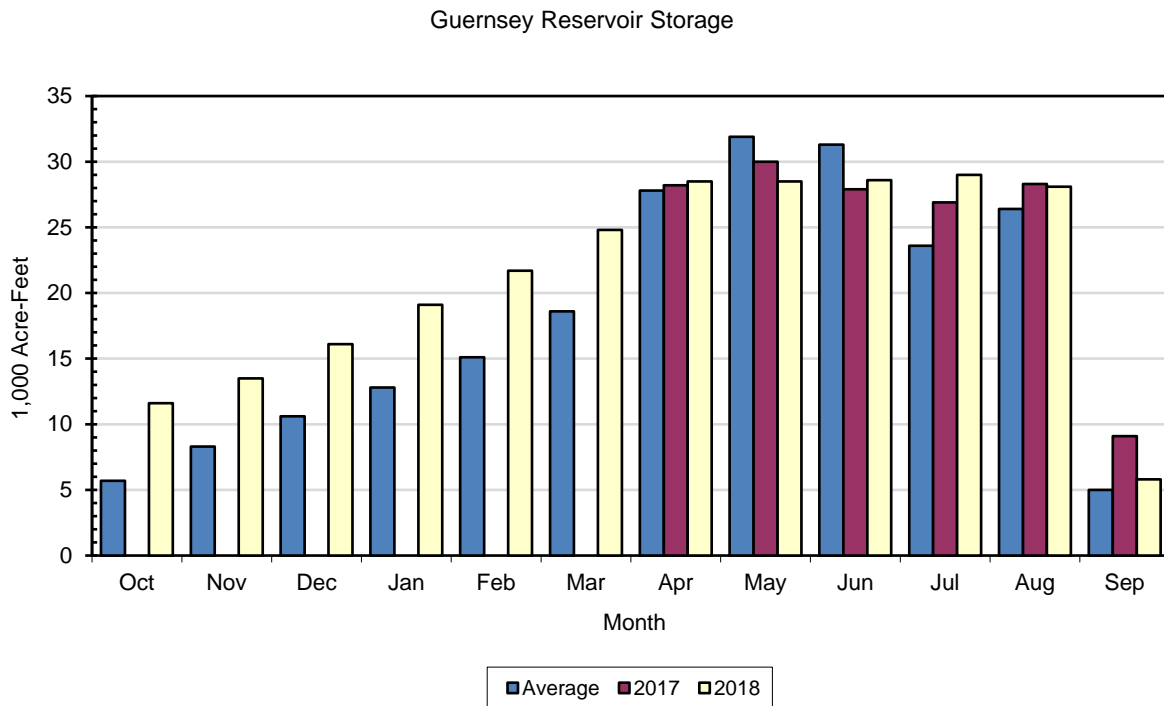
## Guernsey Reservoir Storage and Releases

Guernsey Dam located about 25 miles below Glendo Dam, again stores and re-regulates 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 greatly reduced by deposition of silt. Utilizing 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 2018, storage in Guernsey Reservoir was at 11,566 AF. Reclamation began filling Guernsey on April 17, 2018 and releases commenced on April 22, 2018 to move water into the Inland Lakes. The annual "silt run" from the reservoir was initiated on July 10 and continued for 14 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 965 AF occurred on July 23, 2018. Following the "silt run", the reservoir was refilled to approximately 29,000 AF. The reservoir reached a low storage of 4,558 AF on September 20, 2018 and peaked at 29,393 AF on May 29, 2018. See Figure 9 for WY 2017 and WY 2018 storage compared to average. Figure 9 shows in WY 2017 Guernsey Reservoir content to be zero acre-feet from

October 1 through March 31. Guernsey Reservoir was emptied to conduct the Guernsey Dam North Spillway Rehabilitation in the North Platte Project during this period.



**Figure 9** Guernsey Reservoir Storage

## Precipitation Summary for Water Year 2018

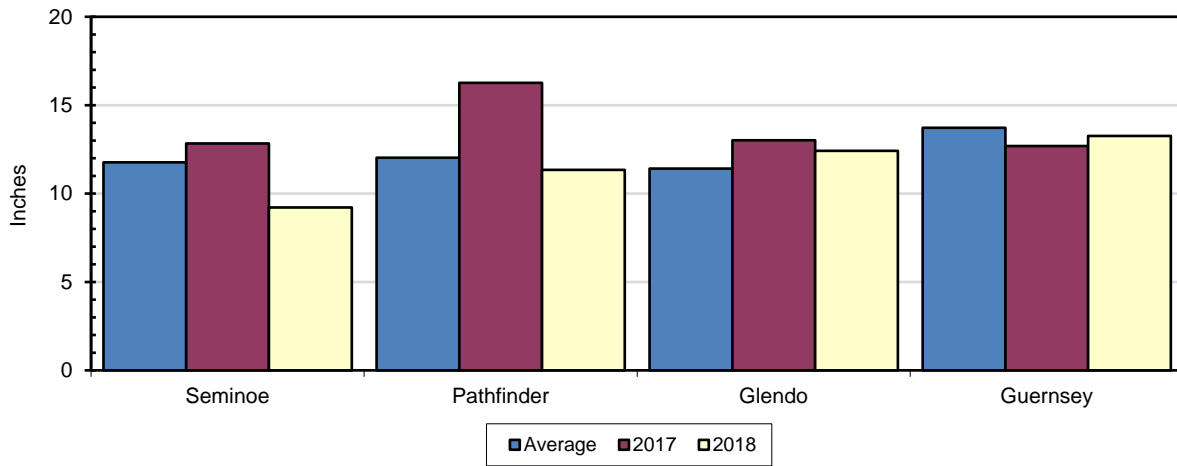
Watershed precipitation in each basin is an average of precipitation readings using several stations as indicators. The 2018 precipitation was at or below average for most of the North Platte River Basin. Three months of the year precipitation was above the 30-year average for Seminoe, six months for Pathfinder and Glendo Reservoirs, and four months for Guernsey Reservoir. Precipitation’s percent of average for the water year ranged from 109 percent in the Glendo basin to 78 percent in Seminoe basin. Pathfinder basin was at 94 percent and Guernsey basin was at 97 percent of average.

The North Platte basin received the majority of its precipitation in May and June for WY 2018. Seminoe basin precipitation was the lowest at 61 percent of average for May and 92 percent for June. The remaining North Platte Basin precipitation percents of average for May and June were as follows: Pathfinder basin - 126 percent and 146 percent, Glendo basin - 149 percent and 163 percent, and Guernsey basin- 174 percent and 85 percent.

See Figure 10 for a comparison of average, WY 2017 and WY 2018 total precipitation.



North Platte River Basin Precipitation by Watershed  
Total for the Water Year



**Figure 10** North Platte River Basin Precipitation by Watershed Total for Water Year 2018

## Snow Pack Summary for Water Year 2018

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 snow pack SWE started at 85 percent, increased 11 percent by March 1, and finished at 81 percent on May 1. In the Sweetwater River watershed, the SWE started at 80 percent of median on February 1, peaked at 82 percent on March 1, and ended the season at 70 percent by May 1. Snow in the Alcova Dam to Glendo Reservoir watershed began at 79 percent of median on February 1, peaked at 71 percent by March 1, and finished at 40 percent on May 1. Table 6 shows a summary of snowpack for WY 2018.

**Table 6** North Platte Snowpack Water Content for 2018

| Watershed            | Feb 1            |                                | Mar 1            |                                | Apr 1            |                                | May 1            |                                |
|----------------------|------------------|--------------------------------|------------------|--------------------------------|------------------|--------------------------------|------------------|--------------------------------|
|                      | SWE <sup>1</sup> | Percent of Median <sup>2</sup> | SWE <sup>1</sup> | Percent of Median <sup>2</sup> | SWE <sup>1</sup> | Percent of Median <sup>2</sup> | SWE <sup>1</sup> | Percent of Median <sup>2</sup> |
| Seminoe Reservoir    | 12.3             | 85                             | 17.0             | 96                             | 21.3             | 90                             | 20.4             | 81                             |
| Pathfinder Reservoir | 7.3              | 80                             | 9.1              | 82                             | 12.1             | 82                             | 10.8             | 70                             |
| Glendo Reservoir     | 4.9              | 79                             | 6.0              | 71                             | 7.7              | 70                             | 3.6              | 40                             |

<sup>1</sup> SWE (Snow Water Equivalent) is the amount of water in the snowpack expressed in inches.

<sup>2</sup> Median is based on the 1981-2010 period.

## Allocation for Water Year 2018

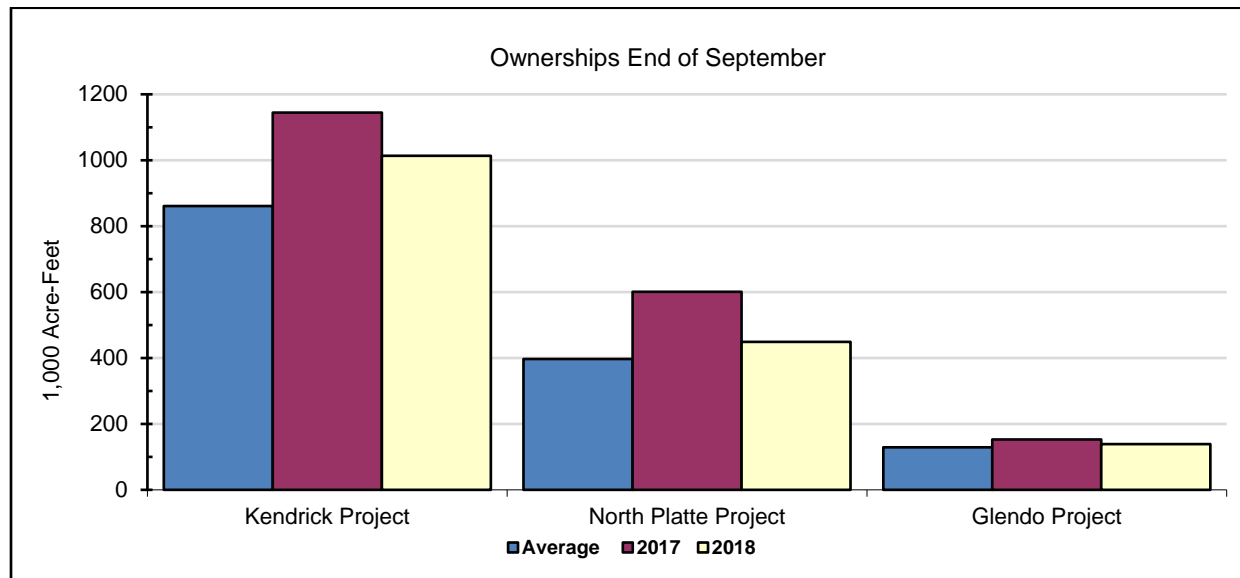
Due to the above average carryover entering the water year and timely spring precipitation, an allocation was not required for the 2018 water year.

## Ownerships for Water Year 2018

Stored water which is held in accounts for various entities is referred to as their ownership. At the beginning of WY 2018, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 600,892 AF of water, which is 151 percent of average. The Kendrick ownership contained 1,144,253 AF of water, which is 133 percent of average. The Glendo ownership contained 152,592 AF of water, which is 118 percent of average.

The total amount of water stored at the end of WY 2018 in the mainstem reservoirs for use in WY 2019 was 1,614,245 AF which was 115 percent of average.

At the end of WY 2018, the North Platte Project ownership (includes North Platte Pathfinder and North Platte Guernsey), contained 449,072 AF of water which is 113 percent of average. The Glendo ownership contained 138,622 AF of water which is 107 percent of average. The Kendrick ownership contained 1,013,268 AF, which is 118 percent of average. The Operational/Re-regulation water account contained 7,209 AF. Also stored in the North Platte storage system was 4,074 AF for the city of Cheyenne, 0 AF 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 2018.



**Figure 11** Ownership End of September

## North Platte River Forecast 2018

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 Seminole 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 to result 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 2018.

**Table 7** Summary of Forecasts of April-July Runoff for Water Year 2018

| Forecast Points    | Feb 1 |                | Mar 1 |                | Apr 1 |                | May 1            |                | Actual April-July KAF | Pct of Apr-Jul Average <sup>1</sup> |
|--------------------|-------|----------------|-------|----------------|-------|----------------|------------------|----------------|-----------------------|-------------------------------------|
|                    | KAF   | Pct of Average | KAF   | Pct of Average | KAF   | Pct of Average | KAF              | Pct of Average |                       |                                     |
| Seminole Reservoir | 575   | 83             | 575   | 83             | 575   | 83             | 525 <sup>2</sup> | 75             | 392.8                 | 56                                  |
| Sweetwater River   | 40    | 75             | 40    | 75             | 40    | 75             | 30 <sup>3</sup>  | 56             | 35.0                  | 65                                  |
| Alcova to Glendo   | 120   | 89             | 100   | 74             | 100   | 74             | 50 <sup>4</sup>  | 37             | 71.0                  | 53                                  |

<sup>1</sup> Average is based on the 1988-2017 period.

<sup>2</sup> The May 1 forecast includes an actual April inflow of 63,540 AF.

<sup>3</sup> The May 1 forecast includes an actual April inflow of 9,247 AF.

<sup>4</sup> The May 1 forecast includes an actual April inflow of 18,363 AF.



Table 8 (Continued) Summary of North Platte River System Ownership for Water Year 2018

| Summary of North Platte River Systems Ownerships for Water Year 2018 (Acre-Feet) |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
|--|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|--------|-------|--------|
| Months   | SEP   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY    | JUN   | JUL    | AUG    | SEP   | TOTAL  |
| <b>City of Cheyenne</b>  |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
| Evaporation  |       | -4    | -27   | -10   | 0     | -4    | -3    | -56   | -35    | -22   | -23    | -25    | -32   | -241   |
| Stored   |       | 675   | 593   | 687   | 756   | 629   | 825   | 366   | 256    | 168   | 599    | 968    | 1,380 | 7,902  |
| Used   |       | -154  | -151  | -144  | -141  | -10   | -68   | -342  | -7,033 | -791  | -65    | -20    | -270  | -9,189 |
| Ownership total  |       | 6,119 | 6,534 | 7,067 | 7,682 | 8,297 | 9,051 | 9,019 | 2,207  | 1,562 | 2,073  | 2,996  | 4,074 |        |
| <b>Actual Ownership</b>  | 5,602 | 6,119 | 6,534 | 7,067 | 7,682 | 8,297 | 9,051 | 9,019 | 2,207  | 1,562 | 2,073  | 2,996  | 4,074 |        |
| <b>Pacific Corp (PP&amp;L)</b>   |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
| Evaporation  |       | -11   | 0     | -5    | -1    | -2    | -4    | -5    | -18    | -24   | -25    | -30    | -27   | -152   |
| Accrual  |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 46     | 24    | 25     | 30     | 27    | 152    |
| Delivery   |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0     | 0      | 0      | 0     | 0      |
| Ownership total  |       | 1,989 | 1,989 | 1,984 | 1,983 | 1,981 | 1,977 | 1,972 | 2,000  | 2,000 | 2,000  | 2,000  | 2,000 |        |
| <b>Actual Ownership</b>  | 2,000 | 1,989 | 1,989 | 1,984 | 1,983 | 1,981 | 1,977 | 1,972 | 2,000  | 2,000 | 2,000  | 2,000  | 2,000 |        |
| <b>WDC Ownership</b>   |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
| 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     | 0      |
| <b>Actual Ownership</b>  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0     | 0      | 0      | 0     | 0      |
| <b>Operational Ownership</b>   |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
| Evaporation  |       | -55   | -1    | -19   | -3    | -7    | -20   | -42   | -67    | -105  | -100   | -76    | -61   | -556   |
| Accrual  |       | 0     | 0     | 0     | 0     | 0     | 1,268 | 0     | 3      | 0     | 0      | 0      | 3,037 | 4,308  |
| Delivery   |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | -533  | -2,331 | -1,621 | 0     | -4,485 |
| Evaporation payback  |       |       |       |       |       |       |       |       |        | 0     | 0      | 0      | 0     | 0      |
| Ownership total  |       | 7,887 | 7,886 | 7,867 | 7,864 | 7,857 | 9,105 | 9,063 | 8,999  | 8,361 | 5,930  | 4,233  | 7,209 |        |
| <b>Actual Ownership</b>  | 7,942 | 7,887 | 7,886 | 7,867 | 7,864 | 7,857 | 9,105 | 9,063 | 8,999  | 8,361 | 5,930  | 4,233  | 7,209 |        |
| <b>Re-Regulation Water</b>   |       |       |       |       |       |       |       |       |        |       |        |        |       |        |
| Evaporation  |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0     | 0      | 0      | 0     | 0      |
| Accrual  |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -18    | 0     | 0      | 0      | 0     | -18    |
| Delivery   |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0     | 0      | 0      | 0     | 0      |
| Evaporation Payback  |       |       |       |       |       |       |       |       |        | 0     | 0      | 0      | 0     | 0      |
| Re-Regulation Transfer   |       |       |       |       |       |       | 0     | 0     | 0      | 0     | 0      | 0      | 0     | 0      |
| Ownership total  |       | 18    | 18    | 18    | 18    | 18    | 18    | 18    | 0      | 0     | 0      | 0      | 0     | 0      |
| <b>Actual Ownership</b>  | 18    | 18    | 18    | 18    | 18    | 18    | 18    | 18    | 0      | 0     | 0      | 0      | 0     | 0      |

**A/** In 1992, the Wyoming State Engineer granted an exchange which allows Pacific Power to exchange direct flows in the winter months (Oct-Apr) 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, 2018, until June 30, 2018, when the last 14 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. In April and May, 41,068 AF was transferred to the Inland Lakes.

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

**Table 9 Actual Reservoir Operations for Water Year 2018**

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2017

HYDROLOGY OPERATIONS

| Seminoe Reservoir Operations    |     | Initial Content 813.3 Kaf |        |        |        |        | Operating Limits: Max 1017.3 Kaf, 6357.00 Ft.<br>Min 31.7 Kaf, 6239.02 Ft. |        |        |        |        |        |        |
|---------------------------------|-----|---------------------------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|--------|
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar  | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 35.0                      | 38.6   | 27.7   | 30.8   | 27.5   | 43.1   | 63.5   | 198.0  | 104.3  | 27.0   | 15.3   | 6.8    |
| Total Inflow                    | cfs | 569.                      | 649.   | 450.   | 501.   | 495.   | 701.   | 1067.  | 3220.  | 1753.  | 439.   | 249.   | 114.   |
| Turbine Release                 | kaf | 33.1                      | 32.0   | 33.0   | 32.9   | 29.8   | 49.7   | 145.5  | 132.2  | 96.0   | 50.2   | 49.2   | 31.8   |
| Jetflow Release                 | kaf | 0.0                       | 0.2    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 33.1                      | 32.2   | 33.0   | 32.9   | 29.8   | 49.7   | 145.5  | 132.2  | 96.0   | 50.2   | 49.2   | 31.8   |
| Total Release                   | cfs | 539.                      | 541.   | 537.   | 535.   | 538.   | 808.   | 2445.  | 2148.  | 1613.  | 816.   | 800.   | 535.   |
| Evaporation                     | kaf | 2.1                       | 5.3    | 0.6    | 0.6    | 1.0    | 0.9  | 4.5    | 4.9    | 8.7    | 8.1    | 6.7    | 5.8    |
| End-month content               | kaf | 813.1                     | 817.5  | 811.6  | 808.9  | 805.5  | 798.1  | 711.7  | 772.6  | 772.2  | 744.1  | 703.5  | 672.7  |
| End-month elevation             | ft  | 6346.0                    | 6346.3 | 6346.0 | 6345.8 | 6345.6 | 6345.2   | 6339.7 | 6343.6 | 6343.6 | 6341.8 | 6339.2 | 6337.1 |
| Kortes Reservoir Operations     |     | Initial Content 4.7 Kaf   |        |        |        |        | Operating Limits: Max 4.8 Kaf, 6142.73 Ft.<br>Min 1.7 Kaf, 6092.73 Ft.     |        |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar  | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 33.1                      | 32.2   | 33.0   | 32.9   | 29.9   | 49.7   | 145.5  | 132.2  | 96.0   | 50.2   | 49.2   | 31.8   |
| Total Inflow                    | cfs | 539.                      | 541.   | 537.   | 535.   | 538.   | 808.   | 2445.  | 2149.  | 1614.  | 816.   | 800.   | 534.   |
| Turbine Release                 | kaf | 33.1                      | 29.9   | 33.0   | 32.5   | 29.1   | 49.7   | 128.6  | 130.2  | 96.0   | 50.2   | 49.2   | 31.8   |
| Spillway Release                | kaf | 0.0                       | 2.2    | 0.0    | 0.4    | 0.8    | 0.0  | 16.9   | 1.9    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 33.1                      | 31.4   | 33.0   | 32.9   | 29.9   | 49.7   | 145.5  | 132.1  | 96.0   | 50.2   | 49.2   | 31.8   |
| Total Release                   | cfs | 539.                      | 540.   | 537.   | 535.   | 538.   | 808.   | 2444.  | 2149.  | 1613.  | 816.   | 800.   | 534.   |
| Pathfinder Reservoir Operations |     | Initial Content 792.8 Kaf |        |        |        |        | Operating Limits: Max 1095.0 Kaf, 5853.56 Ft.<br>Min 31.4 Kaf, 5746.00 Ft. |        |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar  | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Sweetwater Inflow               | kaf | 5.4                       | 5.3    | 4.8    | 4.5    | 4.7    | 6.4  | 9.2    | 13.4   | 9.7    | 2.7    | 1.5    | 1.3    |
| Kortes-Path Gain                | kaf | 0.0                       | 2.5    | 0.0    | 0.7    | 1.9    | 1.8  | 4.8    | 1.4    | 0.3    | 2.3    | 0.0    | 0.9    |
| Inflow from Kortes              | kaf | 33.1                      | 32.0   | 31.0   | 33.0   | 29.8   | 49.7   | 145.5  | 132.1  | 96.0   | 50.2   | 48.1   | 31.7   |
| Total Inflow                    | kaf | 38.5                      | 39.8   | 35.8   | 38.2   | 36.4   | 57.9   | 159.5  | 146.9  | 106.0  | 55.2   | 49.6   | 33.9   |
| Total Inflow                    | cfs | 551.                      | 670.   | 583.   | 621.   | 656.   | 941.   | 2681.  | 2389.  | 1781.  | 898.   | 806.   | 570.   |
| Turbine Release                 | kaf | 3.7                       | 25.7   | 26.4   | 26.8   | 23.2   | 45.5   | 75.5   | 137.4  | 137.8  | 156.9  | 111.2  | 41.2   |
| Jetflow Release                 | kaf | 4.7                       | 4.3    | 4.3    | 4.2    | 4.2    | 4.6  | 4.5    | 6.1    | 24.1   | 43.0   | 8.2    | 5.0    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 8.4                       | 30.0   | 30.8   | 31.0   | 27.4   | 50.1   | 80.1   | 143.5  | 161.9  | 200.0  | 119.4  | 46.2   |
| Total Release                   | cfs | 136.                      | 504.   | 500.   | 504.   | 494.   | 815.   | 1345.  | 2334.  | 2721.  | 3251.  | 1942.  | 777.   |
| Evaporation                     | kaf | 2.5                       | 5.9    | 0.7    | 0.7    | 1.1    | 1.0  | 7.1    | 8.1    | 12.3   | 10.9   | 8.3    | 7.0    |
| End-month content               | kaf | 815.8                     | 819.8  | 824.1  | 830.7  | 838.5  | 845.3  | 917.8  | 913.0  | 844.7  | 689.1  | 611.0  | 591.7  |
| End-month elevation             | ft  | 5840.3                    | 5840.5 | 5840.7 | 5841.1 | 5841.5 | 5841.8   | 5845.5 | 5845.2 | 5841.8 | 5833.2 | 5828.2 | 5826.9 |
| Alcova Reservoir Operations     |     | Initial Content 180.3 Kaf |        |        |        |        | Operating Limits: Max 184.4 Kaf, 5500.00 Ft.<br>Min 145.3 Kaf, 5483.12 Ft. |        |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar  | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 8.4                       | 30.0   | 30.8   | 31.0   | 27.4   | 50.1   | 80.1   | 143.5  | 161.9  | 199.9  | 119.4  | 46.2   |
| Total Inflow                    | cfs | 136.                      | 504.   | 500.   | 504.   | 494.   | 815.   | 1345.  | 2334.  | 2721.  | 3251.  | 1942.  | 777.   |
| Turbine Release                 | kaf | 30.8                      | 29.9   | 30.9   | 30.8   | 28.0   | 48.2   | 57.2   | 132.1  | 149.1  | 183.0  | 103.2  | 32.1   |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Casper Canal Release            | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 10.1   | 11.5   | 15.4   | 14.8   | 13.1   |
| Total Release                   | kaf | 30.8                      | 29.9   | 30.9   | 30.8   | 28.0   | 48.2   | 57.2   | 142.1  | 160.6  | 198.4  | 118.0  | 45.2   |
| Total Release                   | cfs | 501.                      | 503.   | 503.   | 501.   | 504.   | 784.   | 962.   | 2148.  | 2506.  | 2976.  | 1678.  | 540.   |
| Evaporation                     | kaf | 0.3                       | 0.7    | 0.1    | 0.1    | 0.1    | 0.1  | 0.8    | 1.0    | 1.5    | 1.5    | 1.3    | 1.2    |
| End-month content               | kaf | 157.6*                    | 157.0* | 156.7* | 156.8* | 156.1* | 157.9*   | 179.9* | 180.3* | 180.1* | 180.2* | 180.2* | 180.0* |
| End-month elevation             | ft  | 5488.7                    | 5488.4 | 5488.3 | 5488.3 | 5488.0 | 5488.8   | 5498.2 | 5498.3 | 5498.3 | 5498.3 | 5498.3 | 5498.2 |

**Table 9 (Continued) Actual Reservoir Operations for Water Year 2018**

| NORTH PLATTE RIVER OPERATING PLAN |     |                 |        |        |           |        |        |                       |        |        |                        |        |        |
|-----------------------------------|-----|-----------------|--------|--------|-----------|--------|--------|-----------------------|--------|--------|------------------------|--------|--------|
| Year Beginning Oct 2017           |     |                 |        |        |           |        |        |                       |        |        |                        |        |        |
| Gray Reef Reservoir Operations    |     | Initial Content |        |        | 1.2 Kaf   |        |        | Operating Limits: Max |        |        | 1.7 Kaf, 5331.44 Ft.   |        |        |
|                                   |     |                 |        |        |           |        |        | Min                   |        |        | 0.0 Kaf, 5306.00 Ft.   |        |        |
|                                   |     | Oct             | Nov    | Dec    | Jan       | Feb    | Mar    | Apr                   | May    | Jun    | Jul                    | Aug    | Sep    |
| Total Inflow                      | kaf | 30.8            | 29.8   | 30.9   | 30.8      | 28.0   | 48.2   | 57.2                  | 132.1  | 149.1  | 183.0                  | 103.2  | 32.1   |
| Total Inflow                      | cfs | 501.            | 503.   | 503.   | 501.      | 504.   | 784.   | 962.                  | 2148.  | 2506.  | 2976.                  | 1678.  | 540.   |
| Total Release                     | kaf | 30.7            | 29.8   | 30.9   | 30.9      | 27.9   | 47.8   | 57.6                  | 131.9  | 148.8  | 182.9                  | 103.1  | 32.4   |
| Total Release                     | cfs | 500.            | 501.   | 502.   | 502.      | 502.   | 778.   | 968.                  | 2145.  | 2500.  | 2975.                  | 1676.  | 545.   |
|                                   |     |                 |        |        |           |        |        |                       |        |        |                        |        |        |
| Glendo Reservoir Operations       |     | Initial Content |        |        | 111.9 Kaf |        |        | Operating Limits: Max |        |        | 763.0 Kaf, 4653.00 Ft. |        |        |
|                                   |     |                 |        |        |           |        |        | Min                   |        |        | 51.6 Kaf, 4570.01 Ft.  |        |        |
|                                   |     | Oct             | Nov    | Dec    | Jan       | Feb    | Mar    | Apr                   | May    | Jun    | Jul                    | Aug    | Sep    |
| Alcova-Glendo Gain                | kaf | 11.5            | 9.2    | 6.4    | 13.1      | 8.2    | 19.6   | 18.4                  | 24.0   | 19.3   | 9.4                    | 1.0    | 4.9    |
| Infl from Gray Reef               | kaf | 28.7            | 31.0   | 30.9   | 30.0      | 27.1   | 43.3   | 47.1                  | 121.8  | 137.0  | 178.7                  | 112.6  | 33.9   |
| Total Inflow                      | kaf | 40.2            | 40.2   | 37.3   | 43.1      | 35.3   | 62.9   | 65.5                  | 145.8  | 156.3  | 188.1                  | 113.6  | 38.8   |
| Total Inflow                      | cfs | 654.            | 676.   | 606.   | 700.      | 635.   | 1023.  | 1101.                 | 2370.  | 2627.  | 3060.                  | 1848.  | 652.   |
| Turbine Release                   | kaf | 0.0             | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 16.9                  | 105.8  | 151.0  | 235.6                  | 235.6  | 37.1   |
| Low Flow Release                  | kaf | 1.8             | 1.5    | 1.5    | 1.5       | 1.5    | 1.5    | 1.5                   | 1.5    | 1.5    | 1.5                    | 1.5    | 1.5    |
| Spillway Release                  | kaf | 0.0             | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 0.2                   | 0.1    | 5.8    | 52.4                   | 30.5   | 8.0    |
| Irrigation Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 18.4                  | 106.2  | 158.4  | 289.5                  | 267.5  | 46.6   |
| Total Release                     | kaf | 1.8             | 1.5    | 1.5    | 1.6       | 1.5    | 1.7    | 18.4                  | 106.2  | 158.4  | 289.5                  | 267.5  | 46.6   |
| Total Release                     | cfs | 29.             | 25.    | 25.    | 26.       | 28.    | 28.    | 308.                  | 1728.  | 2662.  | 4709.                  | 4351.  | 783.   |
| Evaporation                       | kaf | 1.0             | 0.7    | 0.3    | 0.4       | 0.5    | 1.1    | 1.8                   | 3.1    | 5.1    | 5.4                    | 3.6    | 2.0    |
| End-month content                 | kaf | 149.4           | 187.5  | 223.0  | 264.1     | 297.3  | 357.4  | 402.8                 | 439.2  | 432.1  | 325.3                  | 167.8  | 158.0  |
| End-month elevation               | ft  | 4594.5          | 4600.0 | 4606.1 | 4611.6    | 4615.6 | 4622.3 | 4626.9                | 4630.4 | 4629.7 | 4618.9                 | 4597.8 | 4596.1 |
|                                   |     |                 |        |        |           |        |        |                       |        |        |                        |        |        |
| Guernsey Reservoir Operations     |     | Initial Content |        |        | 9.1 Kaf   |        |        | Operating Limits: Max |        |        | 45.6 Kaf, 4419.99 Ft.  |        |        |
|                                   |     |                 |        |        |           |        |        | Min                   |        |        | 0.0 Kaf, 4370.00 Ft.   |        |        |
|                                   |     | Oct             | Nov    | Dec    | Jan       | Feb    | Mar    | Apr                   | May    | Jun    | Jul                    | Aug    | Sep    |
| Glendo-Guerns Gain                | kaf | 2.4             | 1.9    | 1.7    | 1.6       | 1.4    | 1.8    | 1.1                   | 2.9    | 3.2    | 2.4                    | -1.9   | 4.8    |
| Inflow from Glendo                | kaf | 1.8             | 1.5    | 1.6    | 1.6       | 1.5    | 1.7    | 18.3                  | 106.2  | 158.4  | 289.6                  | 265.6  | 46.6   |
| Total Inflow                      | kaf | 4.2             | 3.4    | 3.3    | 3.2       | 2.9    | 3.5    | 19.4                  | 109.1  | 161.6  | 292.0                  | 265.6  | 51.4   |
| Total Inflow                      | cfs | 68.             | 57.    | 53.    | 53.       | 52.    | 56.    | 326.                  | 1775.  | 2716.  | 4747.                  | 4320.  | 863.   |
| Turbine Release                   | kaf | 0.0             | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 8.6                   | 62.3   | 50.0   | 26.8                   | 62.4   | 28.8   |
| Seepage                           | kaf | 1.5             | 1.3    | 0.6    | 0.2       | 0.2    | 0.2    | 0.2                   | 1.2    | 3.0    | 3.1                    | 2.5    | 0.3    |
| Spillway Release                  | kaf | 0.0             | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 6.4                   | 55.4   | 117.5  | 261.2                  | 210.8  | 44.1   |
| Total Release                     | kaf | 1.5             | 1.3    | 0.6    | 0.2       | 0.2    | 0.2    | 15.2                  | 108.6  | 160.6  | 291.1                  | 265.6  | 73.3   |
| Total Release                     | cfs | 24.             | 22.    | 9.     | 3.        | 3.     | 3.     | 256.                  | 1765.  | 2700.  | 4734.                  | 4320.  | 1232.  |
| Evaporation                       | kaf | 0.2             | 0.1    | 0.1    | 0.1       | 0.1    | 0.2    | 0.4                   | 0.6    | 0.9    | 0.5                    | 0.8    | 0.4    |
| End-month content                 | kaf | 11.6*           | 13.5*  | 16.1*  | 19.1*     | 21.7*  | 24.8*  | 28.5*                 | 28.5*  | 28.6*  | 29.0*                  | 28.1*  | 5.8*   |
| End-month elevation               | ft  | 4401.7          | 4403.2 | 4405.1 | 4407.0    | 4408.5 | 4410.3 | 4412.2                | 4412.2 | 4412.2 | 4412.4                 | 4412.0 | 4395.6 |
| Physical EOM Cont                 | kaf | 1953.4          | 2001.2 | 2037.6 | 2085.6    | 2125.4 | 2190.1 | 2246.7                | 2339.9 | 2264.1 | 1974.0                 | 1697.0 | 1614.2 |



## Flood Benefits for Water Year 2018

**Table 10** Flood Damage Prevented by Dams for WY 2018 (on the North Platte River Basin System)

| DAMS       | WATER YEAR 2018 | PRIOR TO 2018 <sup>2</sup> | ACCUMULATED TOTAL <sup>1</sup> |
|------------|-----------------|----------------------------|--------------------------------|
| SEMINOE    | \$0             | \$97,991,400               | \$97,991,400                   |
| PATHFINDER | \$0             | \$33,110,200               | \$33,110,200                   |
| ALCOVA     | \$0             | \$3,142,100                | \$3,142,100                    |
| GLENDON    | \$427,700       | \$239,195,200              | \$239,622,900                  |
| TOTAL      | \$427,700       | \$373,438,900              | \$373,866,600                  |

<sup>1</sup> This data is received from the Army Corps of Engineers Omaha District Office and is revised every October.

<sup>2</sup> The period of assessment is 1970 through 2018 except for Glendo Dam, which is 1964 through 2018.

## Generation for water year 2018

Power generation was above average for Fremont Canyon and Alcova powerplants; all others were below average in WY 2018. See Table 11 for a breakdown of generation by powerplant.

**Table 11** Power Generation Water Year 2018

| Powerplant     | Gross generation <sup>1</sup> (GWh) | Percent of Average <sup>2</sup> |
|----------------|-------------------------------------|---------------------------------|
| Seminole       | 105.2                               | 85                              |
| Kortes         | 115.6                               | 89                              |
| Fremont Canyon | 239.9                               | 114                             |
| Alcova         | 109.2                               | 103                             |
| Glendo         | 78.0                                | 98                              |
| Guernsey       | 16.5                                | 97                              |
| Total Basin    | 664.4                               | 100                             |

<sup>1</sup> Generation is reported in giga-watt hours (GWh).

<sup>2</sup> 30 year average (1988-2017)

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

**Table 12** North Platte River Powerplant Data

| Powerplant     | Number of Units | Capacity Each Unit (kw) | Total <sup>2</sup> Installed Capacity (kw) | Normal Operating Head (feet) | Output At rated Head (cfs) | 30 year Average <sup>1</sup> (GWh) |
|----------------|-----------------|-------------------------|--|------------------------------|----------------------------|------------------------------------|
| Seminole       | 3               | 15,000 <sup>3</sup>     | 51,750 <sup>3</sup>                        | 97-227                       | 4,050                      | 124.0                              |
| Kortes         | 3               | 12,000                  | 36,000                                     | 192-204                      | 2,910                      | 130.0                              |
| Fremont Canyon | 2               | 33,400                  | 66,800                                     | 247-363                      | 3,080                      | 210.7                              |
| Alcova         | 2               | 19,500                  | 41,400                                     | 153-165                      | 4,100                      | 106.1                              |
| Glendo         | 2               | 19,000                  | 38,000                                     | 73-156                       | 3,400                      | 79.8                               |
| Guernsey       | 2               | 3,200                   | 6,400                                      | 89-91                        | 1,340                      | 17.0                               |
| Total          | 14              | ---                     | 237,200                                    | ---                          | ---                        | 667.6                              |

<sup>1</sup> 1988-2017

<sup>2</sup> Installed capacity from Monthly Report of Power Operations-Powerplant (Form PO&M 59)

<sup>3</sup> A Mechanical restriction allows a 42,000 kw generation, 12,000 kws per unit.

# Proposed Operations for Water Year 2019

Three operation studies were developed for the System to establish an AOP for WY 2019. 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 2019 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 1,614,245 AF at the beginning of the WY 2019. This amount was 115 percent of the 30 year average (1989-2018) and 57 percent of active conservation capacity.

## Seminole Reservoir

### Most Probable Condition - 2019

October through March -- Seminole Reservoir has a storage of 672,711 AF at the beginning of WY 2019, which is 113 percent of the 30-year average and 66 percent of active conservation capacity. Planned turbine releases from Seminole Reservoir are approximately 530 cfs for October through February with an increase to 1,100 cfs in March. Reservoir storage would decrease to about 623,900 AF by March 31, 2019. The releases are based on an estimated Seminole inflow for the October through March period of 183,300 AF. The planned Seminole and Kortes release of 530 cfs for October through February 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 1,600 cfs for April and 2,600 cfs for May, June, and July, then decrease to 2,000 cfs in August, and 800 cfs in September. There is no bypass expected in the most probable scenario. Seminole Reservoir storage will reach a maximum of 863,800 AF by the end of June. Projected carryover storage of about 659,000 AF at the end of the water year would be 111 percent of average and 65 percent of active conservation capacity.

### **Reasonable Minimum Condition - 2019**

October through March -- Planned water release for this period under reasonable minimum inflow condition will be approximately 530 cfs until March. 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 147,100 AF for the period, which is 36,200 AF less than the most probable condition. March 31 reservoir content is expected to be approximately 605,800 AF.

April through September -- Seminole water releases will be at 800 cfs through April, increasing to 1,100 cfs in May, and increasing to approximately 2,600 cfs in June. Releases will decrease through July, August, and September to 2,000 cfs, 1,400 cfs, and 800 cfs respectively. Under the minimum condition scenario the June content will be approximately 623,900 AF, and the water year will end with a content of 417,500 AF which is 70 percent of average and 41 percent of active conservation capacity.

### **Reasonable Maximum Condition - 2019**

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 make room in Seminole Reservoir for spring runoff. Although inflows to Seminole Reservoir are higher under these conditions, actual changes in winter operations are made gradually until it is evident that the inflow quantities being experienced are showing a trend towards the maximum inflows for the water year. October through March inflows under this condition would be 220,700 AF, which is 37,400 AF more than the most probable runoff condition. The reservoir content would increase from 605,300 AF at the end of March to 819,300 AF by the end of June under these conditions.

April through September -- Seminole Reservoir release for March will be approximately 2,000 cfs, then releases will increase to about 4,000 cfs in April, 5,000 cfs in May, and 6,000 cfs in June. Releases will then decrease to approximately 2,600 cfs in July, 1,000 cfs for August, and 800 cfs for September. Inflows for the April through July period will be approximately 1,353,100 AF, which is 585,800 AF more than the most probable runoff condition. Seminole Reservoir will reach its maximum end of month content for the year in July with approximately 873,000 AF in storage. This plan of operation would result in an end of year carryover storage of 845,800 AF, which would be 142 percent of average and 83 percent of active conservation capacity. Figure 12 depicts a comparison of Minimum, Most Probable, and Maximum Seminole Inflows. Figure 13 depicts a comparison of Minimum, Most Probable, and Maximum Seminole Storage.

Seminole Reservoir Inflow

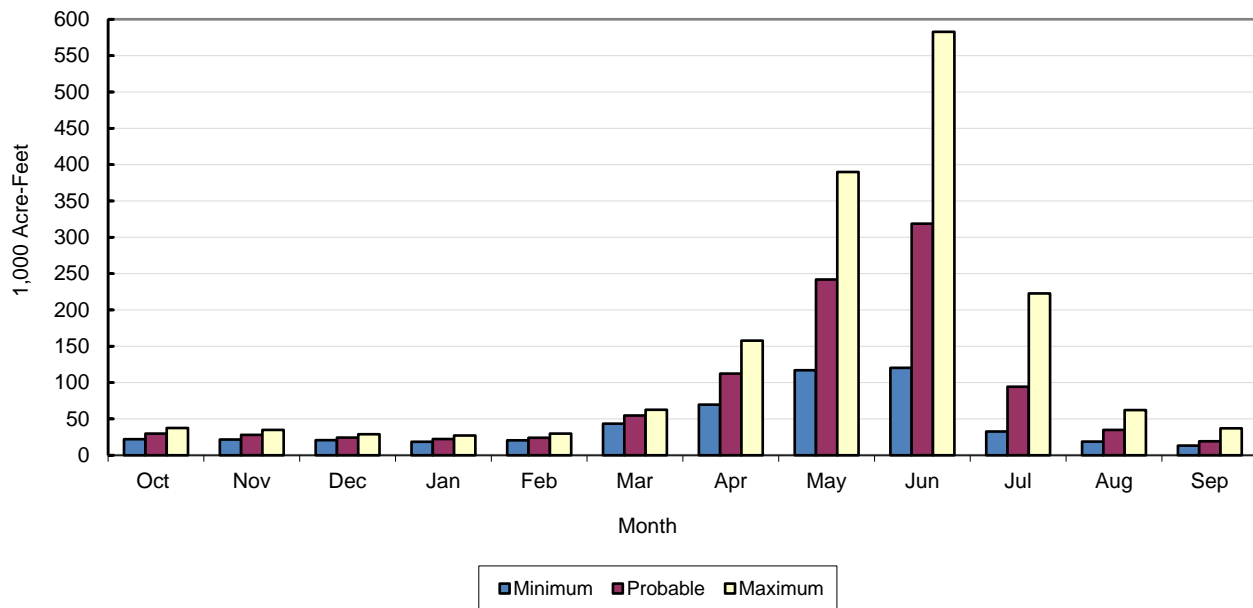


Figure 12 Seminole Reservoir Inflow (Predicted for Water Year 2019)

Seminole Reservoir Storage

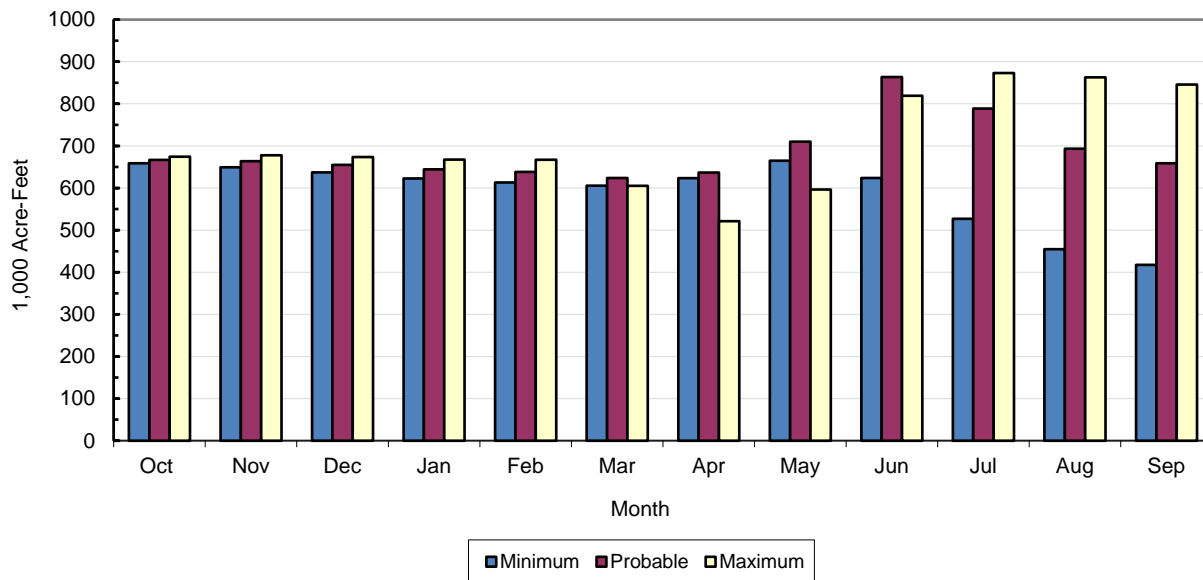


Figure 13 Seminole Reservoir Storage (Predicted for Water Year 2019)

## Pathfinder Reservoir

### Most Probable Condition - 2019

October through March -- Pathfinder Reservoir had a storage of 591,731 AF at the beginning of WY 2019, which is 121 percent of the 30 year average and 55 percent of active conservation capacity. Under this condition, gains to the river between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 31,600 AF for the October-March period. Fremont Canyon Powerplant releases will be reduced during October to allow Alcova Reservoir water surface level to be lowered to  $5,488.0 \pm 1$  foot, which is the normal elevation range for winter operation. 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 658,500 AF at the end of March.

April through September -- Pathfinder Reservoir storage will reach a maximum content of about 770,200 AF by the end of May and be drawn down to a storage content of about 658,300 AF by the end of the water year, which would be 134 percent of average. River gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are estimated at about 73,500 AF for the April-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  $5,498 \pm 1$  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 March to approximately 800 cfs, 1,200 cfs in April, 1,700 cfs in May, and 3,000 cfs in June. Releases will decrease to 2,700 cfs for August, and approximately 1,200 cfs in September.

### Reasonable Minimum Condition - 2019

October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam, including the Sweetwater River, are expected to be 13,300 AF for the October-March period. Pathfinder Reservoir storage will decline to about 619,500 AF by the end of February. 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 Dam and Pathfinder Dam, including the Sweetwater River, are estimated at about 19,900 AF for the April-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  $5,498 \text{ ft} \pm 1$  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 3,600 cfs, during July, and then reduced as irrigation demands drop off to end the water year at approximately 900 cfs during September. If reasonable minimum runoff develops, Pathfinder reservoir content at the end of the water year will be about 287,600 AF, which would be 59 percent of average and 27 percent of active conservation capacity.

### **Reasonable Maximum Condition - 2019**

October through March -- Under this condition, river gains between Kortes Dam and Pathfinder Dam are expected to be 49,200 AF for the period. Pathfinder Reservoir content increases through this period from 620,100 AF at the end of October to 701,800 AF by the end of March.

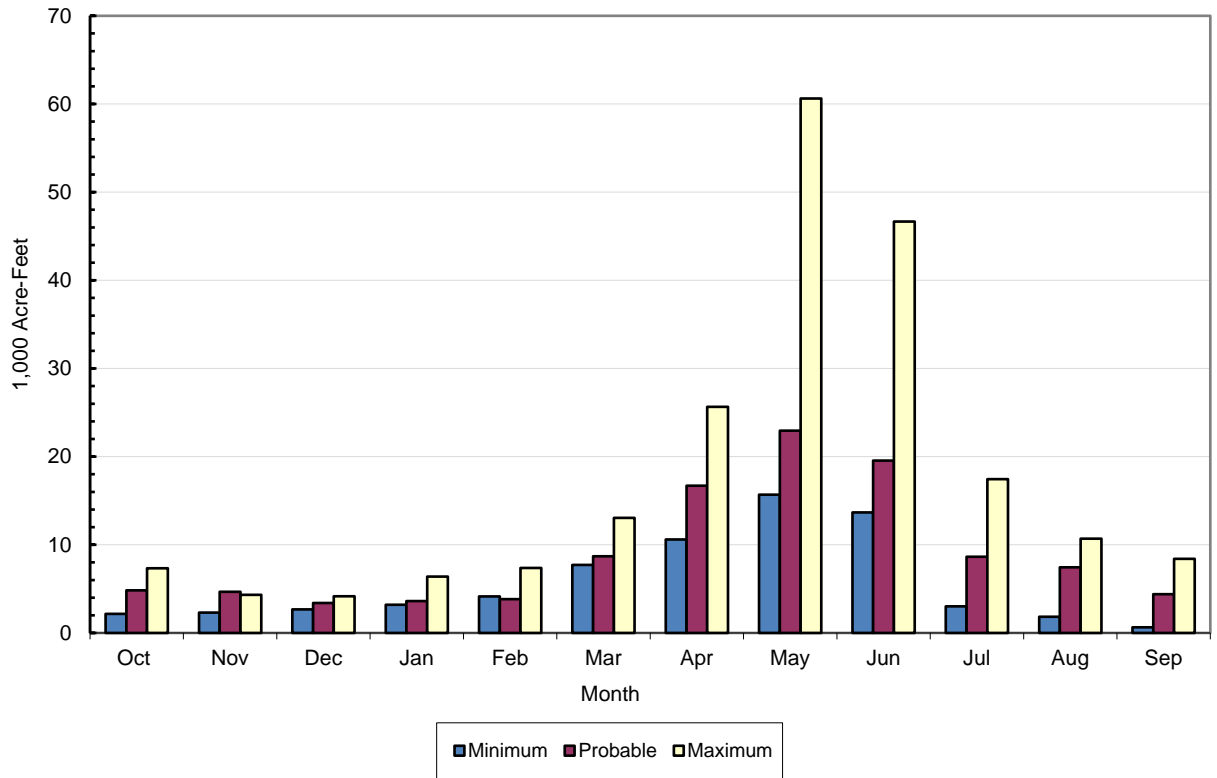
April through September -- In April, water releases from Fremont Canyon Powerplant will be increased as Alcova Reservoir is refilled to water surface elevation  $5,498 \pm 1$  foot. The rate of release will be increased through the summer as needed to meet downstream irrigation demands. Pathfinder Reservoir would reach a maximum content of 1,070,000 AF at the end of June. Releases will increase to approximately 1,300 cfs in March, 3,000 cfs in April and 3,200 cfs in May, and peaking at 4,700 cfs in June. They will decrease to approximately 3,300 cfs in July, 3,100 cfs in August and 1,800 cfs in September.

The Pathfinder Reservoir end of year storage content is projected to be about 846,700 AF, which would be 173 percent of average, and 79 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 through the jet flow gates below Pathfinder Dam.

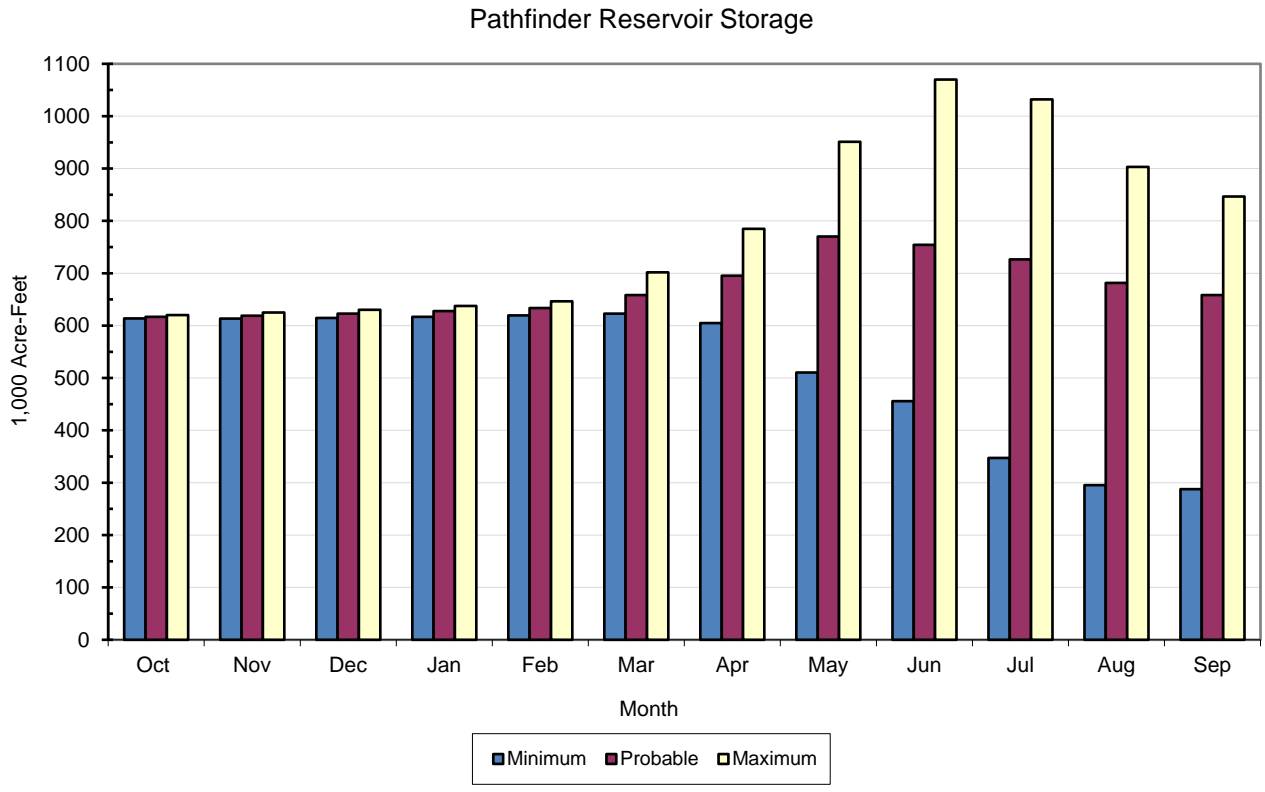
Figure 14 depicts a comparison of Minimum, Most Probable, and Maximum river gains from Kortes Dam to Pathfinder Reservoir. Figure 15 depicts a comparison of Minimum, Most Probable, and Maximum Pathfinder Storage.

Gains to the North Platte River from Kortes Dam  
to Pathfinder Reservoir including Sweetwater River



**Figure 14** Gains to the North Platte River from Kortes Dam to Pathfinder Reservoir (Predicted for Water Year 2019)





**Figure 15** Pathfinder Reservoir Storage (Predicted for Water Year 2019)

## Alcova Reservoir

### **Most Probable Condition - 2019**

October through March -- During October, Alcova Reservoir will be drawn down to the normal winter operating range of 5,488.0  $\pm$  1 foot and will be maintained there through March. The October through February releases for WY 2019 will be maintained at approximately 500 cfs. The 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.

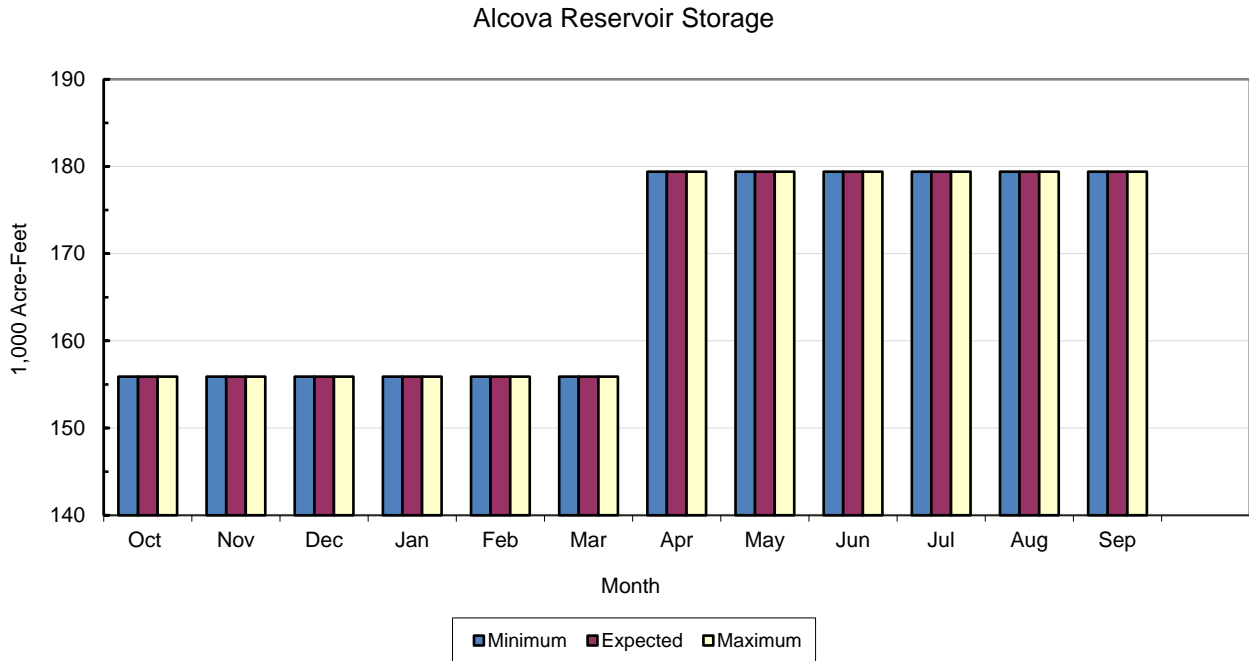
April through September -- During April, the reservoir will be refilled to water surface elevation 5,498 feet (179,400 AF). This level will be maintained within  $\pm$  1 foot to provide the necessary water surface elevation to make irrigation deliveries to Casper Canal and for recreational purposes. About 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 47,700 AF and May-September releases to the river from Alcova Reservoir will total approximately 635,300 AF which will be re-regulated in Gray Reef Reservoir.

### **Reasonable Minimum Condition - 2019**

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-September period to meet Kendrick Project irrigation requirements. April releases are scheduled to be approximately 47,900 AF and May-September releases to the North Platte River from Alcova Reservoir will total approximately 699,400 AF. Water released from Alcova Reservoir will be re-regulated in Gray Reef Reservoir.

### **Reasonable Maximum Condition - 2019**

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-September period to meet Kendrick Project irrigation requirements. March releases will be approximately 79,400 AF, and April releases will be approximately 155,400 AF. May-September releases to the North Platte River from Alcova Reservoir will total approximately 900,200 AF. Figure 16 depicts a comparison of Minimum, Most Probable, and Maximum Alcova Storage.



**Figure 16** Alcova Reservoir Storage (Predicted for Water Year 2019)

## Gray Reef Reservoir

### Most Probable Condition - 2019

October through March -- Releases October through February from Gray Reef Dam will be maintained at approximately 500 cfs. 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 March and April, approximately 1,500 cfs in May, and 2,800 cfs in June. Releases will decrease to 2,700 cfs in July, 2,400 cfs in August, and 1,000 cfs in September.

### Reasonable Minimum Condition - 2019

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, 2,500 cfs in May, 3,200 cfs June, and 3,300 cfs in July. The releases will be decreased to approximately 1,900 in August and 700 cfs in September as irrigation water is moved downstream. These predicted flows may be redistributed as the irrigators adjust their use of water from storage.

### **Reasonable Maximum Condition - 2019**

October through March -- Operation of Gray Reef Reservoir winter releases will be the same as under the most probable condition through February and increasing to 1,300 cfs in March.

April through September -- The release from Gray Reef Reservoir will increase to approximately 2,600 cfs in April, 3,000 cfs in May, and 4,400 cfs in June. The July releases will decrease to approximately 3,000 cfs, 2,800 cfs in August, and approximately 1,600 cfs for September.

## **Glendo and Guernsey Reservoirs**

### **Most Probable Condition - 2019**

October through March -- Glendo Reservoir had a storage of 158,013 AF at the beginning of WY 2019, which is 123 percent of average and 32 percent of active conservation capacity of 492,022 AF. Glendo Reservoir storage will increase to approximately 409,700 AF by the end of March, which will be 107 percent of average and 83 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 5,781 AF at the beginning of WY 2019, which is 123 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 19,100 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 490,300 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 during April 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 120,000 AF by the end of September.

### **Reasonable Minimum Condition - 2019**

October through March -- Guernsey Reservoir had a storage of 5,781 AF at the beginning of WY 2019. Under the reasonable minimum inflow conditions, natural inflow will be stored during the winter which will increase the Guernsey Reservoir content to 19,100 AF by the end of March. Glendo Reservoir content will increase from the carryover storage of 158,013 AF to an end of March content of 386,800 AF.

April through September -- During April, releases from Glendo Reservoir will be scheduled to refill Guernsey Reservoir. Glendo Reservoir storage will increase to about 438,800 AF by the end of May and reach its highest level of 449,200 AF at the end of June.

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 612,800 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 120,000 AF of water in Glendo Reservoir at the end of September. Guernsey Reservoir content will be 2,000 AF at the end of September.

### **Reasonable Maximum Condition - 2019**

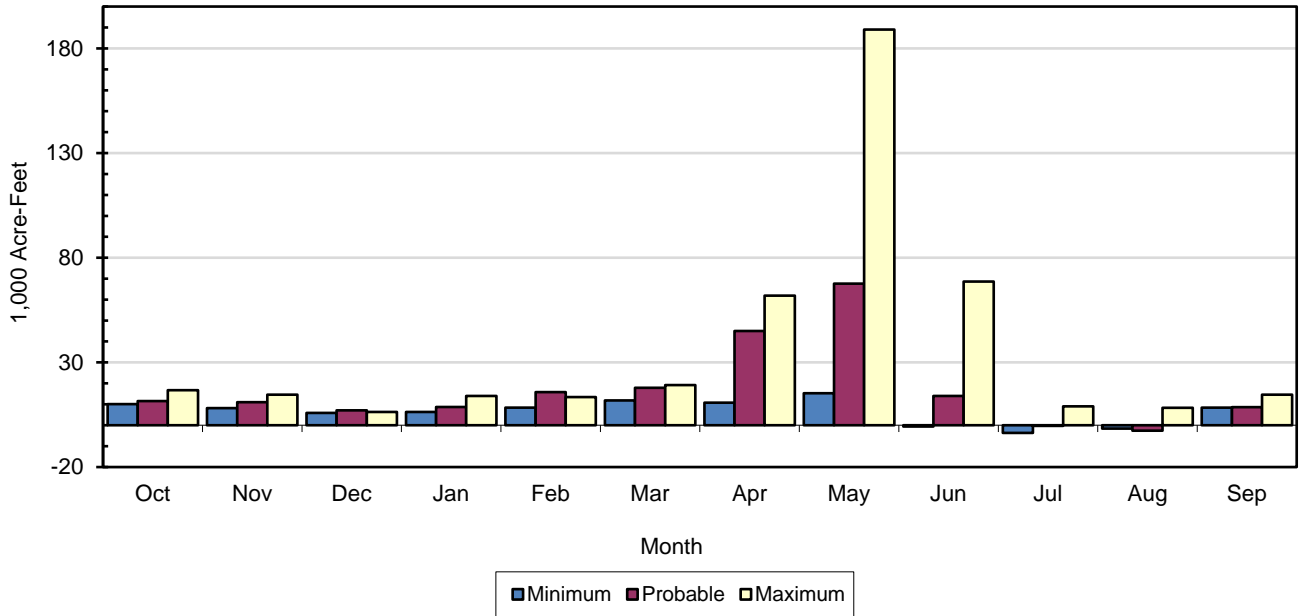
October through March -- Guernsey Reservoir had a storage of 5,781 AF at the beginning of WY 2019. Natural inflow will be stored during the winter which will increase Guernsey Reservoir content to 19,100 AF by the end of March. Glendo Reservoir content is expected to increase from the starting content of 158,013 AF to an end of March content of 361,000 AF.

April through September -- Under maximum conditions, re-regulation water will be released as natural flow to meet irrigation demands until the supply is used as required. An annual total of 1,798,000 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 490,000 AF in June. During September, releases will be scheduled to lower Guernsey Reservoir to approximately 2,000 AF.

The operating plan shown assumes no downstream flow restrictions and normal irrigation deliveries. Glendo storage is projected to decrease to about 259,700 AF by the end of July and will be about 120,000AF by the end of September. End of year Glendo storage would be 94 percent of average and the Total System storage at the end of the water year would be 2,000,400 AF, 143 percent of average.

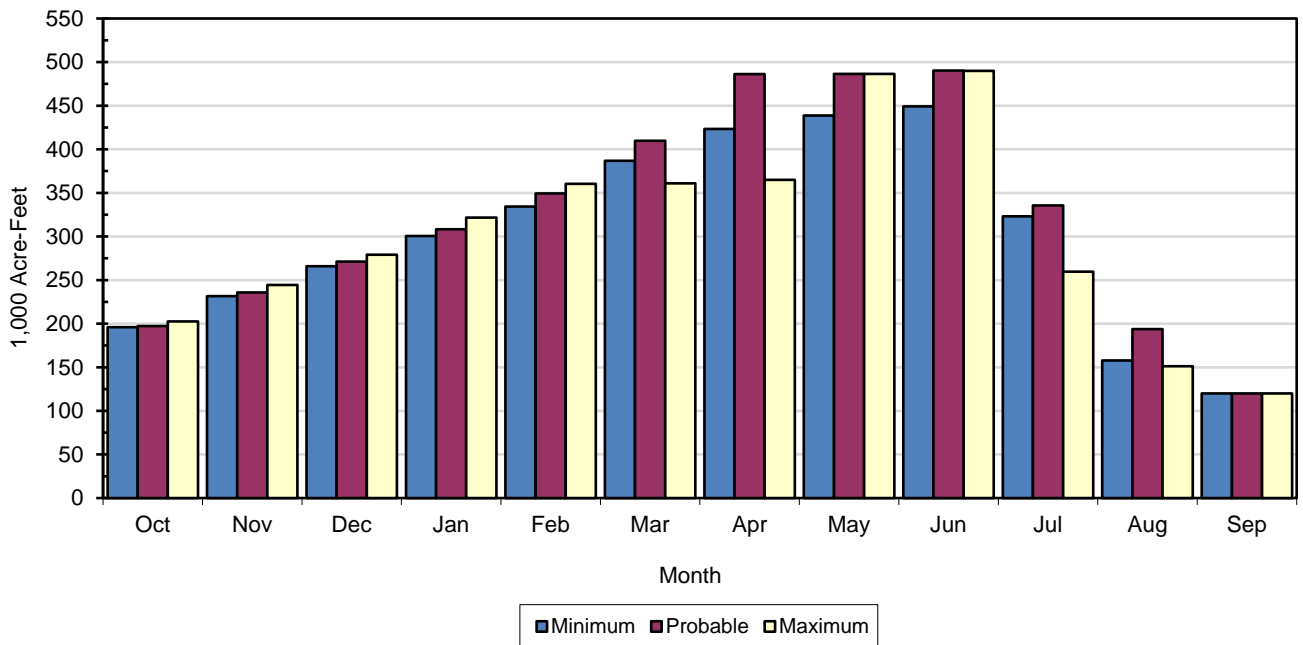
Figure 17 depicts a comparison of Minimum, Most Probable, and Maximum river gains from Alcova Dam to Glendo Reservoir. Figure 18 depicts a comparison of Minimum, Most Probable, and Maximum Glendo Reservoir Storage.

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



**Figure 17** Gains to North Platte River from Alcova Dam to Glendo Reservoir (Predicted for Water Year 2019)

Glendo Reservoir Storage



**Figure 18** Glendo Reservoir Storage (Predicted for Water Year 2019)

## Ownerships

### Most Probable Condition - 2019

Stored water which is held in active conservation capacity accounts for various entities is referred to as their ownership. At the close of WY 2019, the North Platte Project storage ownership is expected to be at 517,300 AF (129 percent of average); the Kendrick Project storage ownership is expected to be at 948,700 AF (111 percent of average). Glendo storage ownership at the end of WY 2019 is expected to be 143,500 AF (111 percent of average).

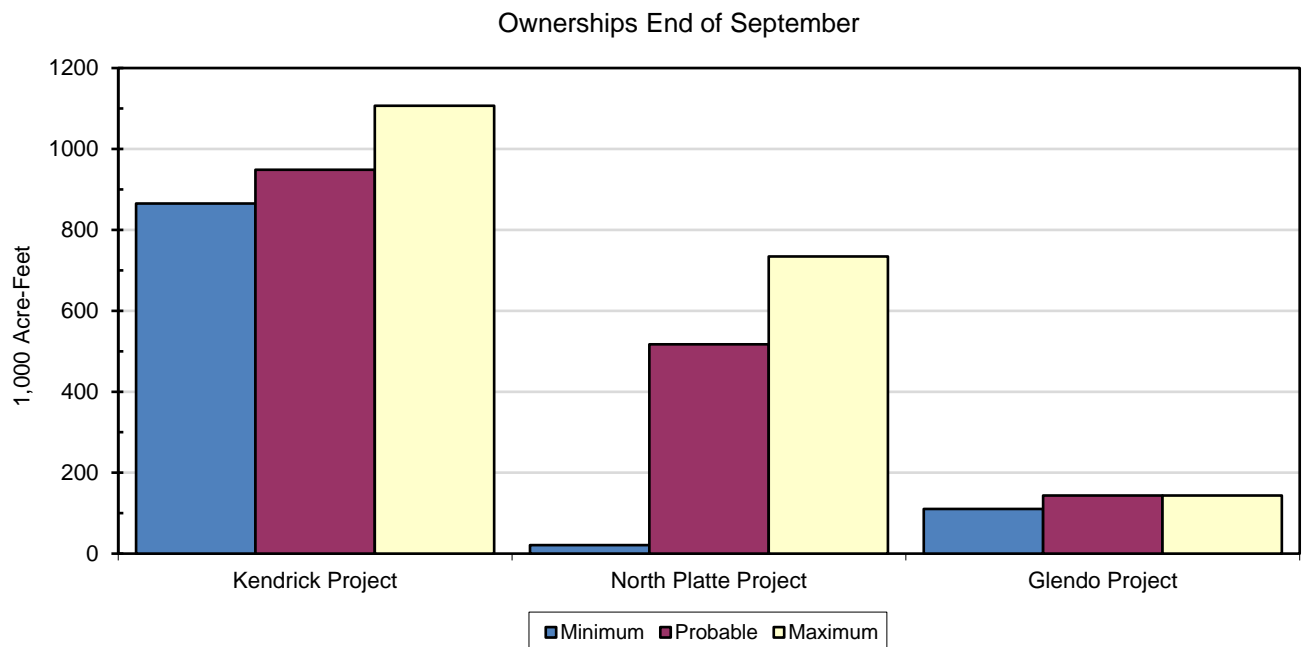
### Reasonable Minimum Condition - 2019

The North Platte Project storage ownership is expected to be at 21,100 AF (5 percent of average) at the close of WY 2019. The Kendrick Project storage ownership is expected to be near 865,400 AF which is 101 percent of average at the close of the water year. The Kendrick Project ownership will not accrue any water under the reasonable minimum conditions, and Glendo storage ownership is expected to be 110,300 AF (86 percent of average) at the close of WY 2019.

### Reasonable Maximum Condition - 2019

Under reasonable maximum inflow conditions all storage water ownerships, in the North Platte River system, will fill during the WY 2019. About 979,000 AF will be captured in the reservoirs as re-regulation water in the North Platte System under maximum condition. The water in the re-regulation water account will be released from the System as natural flow to meet irrigation demands.

Figure 19 depicts a comparison of Minimum, Most Probable, and Maximum, Kendrick, North Platte Project, and Glendo Project Ownerships at the end of WY 2019.



**Figure 19** Ownerships at the End of September (Predicted for Water Year 2019)

## Most Probable Generation Water Year 2019

The most probable power generation breakdown for each powerplant.

**Table 13** Most Probable Power Generation Water Year 2019

| Powerplant     | Gross generation <sup>1</sup> (GWh) | Percent of Average <sup>2</sup> |
|----------------|-------------------------------------|---------------------------------|
| Seminole       | 164.164                             | 124                             |
| Kortes         | 166.720                             | 128                             |
| Fremont Canyon | 218.980                             | 103                             |
| Alcova         | 122.693                             | 116                             |
| Glendo         | 94.524                              | 118                             |
| Guernsey       | 19.110                              | 113                             |
| Total Basin    | 786.191                             | 117                             |

<sup>1</sup> Gross generation is based on October 2019 storage and most probable inflow.

Gross generation is reported in giga-watt hours (GWh).

<sup>2</sup> 30 year average (1989-2018)



The Facilities Management Division creates a schedule of maintenance for all generating units. See Table 14 for the maintenance schedule for WY 2019.

**Table 14** Proposed Generating Unit Maintenance Schedule (October 2018 through September 2019)

| <b><u>Facility and Unit No.</u></b> | <b><u>Scheduled Period</u></b> |          | <b><u>Description of Work</u></b> |
|-------------------------------------|--------------------------------|----------|-----------------------------------|
| Seminole Unit #1                    | 10-01-18 through               | 12-20-18 | Annual Maintenance                |
| Seminole Unit #2                    | 10-01-18 through               | 12-13-18 | Annual Maintenance                |
| Seminole Unit #3                    | 0-01-18 through                | 01-17-19 | Annual Maintenance                |
| Kortes Unit #1                      | 02-25-19 through               | 04-11-19 | Annual Maintenance                |
| Kortes Unit #2                      | 1-22-19 through                | 02-21-19 | Annual Maintenance                |
| Kortes Unit #3                      | 11-19-18 through               | 01-03-19 | Annual Maintenance                |
| Fremont Unit #1                     | 10-10-18 through 01-31-19      |          | Annual Maintenance                |
| Fremont Unit #1                     | 10-01-18 through 01-31-19      |          | Penstock Recoating                |
| Fremont Unit #2                     | 01-10-17 through 02-12-19      |          | Annual Maintenance                |
| Fremont Unit #2                     | 10-01-18 through 02-12-19      |          | Penstock Recoating                |
| Alcova Unit #1                      | 02-21-19 through 03-21-19      |          | Annual Maintenance                |
| Alcova Unit #1                      | 03-25-19 through 03-28-19      |          | Penstock Inspection               |
| Alcova Unit #2                      | 01-15-19 through 02-19-19      |          | Annual Maintenance                |
| Alcova Unit #2                      | 03-25-19 through 03-28-19      |          | Penstock Inspection               |
| Glendo Unit #1                      | 01-07-19 through               | 01-31-19 | Annual Maintenance                |
| Glendo Unit #1                      | 04-15-19 through               | 04-18-19 | Relay Testing                     |
| Glendo Unit #2                      | 12-03-18 through               | 12-27-18 | Annual Maintenance                |
| Glendo Unit #2                      | 04-15-19 through               | 04-18-19 | Relay Testing                     |
| Guernsey Unit #1                    | 10-01-18 through 03-17-19      |          | Surge Tank Recoating              |

|                  |                           |                      |
|------------------|---------------------------|----------------------|
| Guernsey Unit #1 | 02-05-19 through 02-28-19 | Annual Maintenance   |
| Guernsey Unit #2 | 10-01-18 through 03-17-19 | Surge Tank Recoating |
| Guernsey Unit #2 | 11-06-18 through 12-06-18 | Annual Maintenance   |

**Table 15 Most Probable Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 8: 5

Based on Most Probable April - July Inflow: Seminoe 767.3 kaf, Sweetwater 51.8 kaf, Glendo 126.3 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

HYDROLOGY OPERATIONS

| Seminoe Reservoir Operations |     | Initial Content 672.8 Kaf |        |        |        |        |        | Operating Limits: Max 1017.3 Kaf, 6357.00 Ft. |        |        | Min 31.7 Kaf, 6239.02 Ft. |        |        |
|------------------------------|-----|---------------------------|--------|--------|--------|--------|--------|---|--------|--------|---------------------------|--------|--------|
|                              |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr   | May    | Jun    | Jul                       | Aug    | Sep    |
| Total Inflow                 | kaf | 29.8                      | 28.1   | 24.4   | 22.3   | 24.1   | 54.6   | 112.4   | 241.8  | 318.7  | 94.4                      | 34.8   | 19.2   |
| Total Inflow                 | cfs | 485.                      | 472.   | 397.   | 363.   | 434.   | 888.   | 1889.   | 3932.  | 5356.  | 1535.                     | 566.   | 323.   |
| Turbine Release              | kaf | 32.6                      | 31.4   | 32.5   | 32.5   | 29.3   | 67.6   | 95.2  | 160.5  | 155.3  | 160.5                     | 123.0  | 49.0   |
| Jetflow Release              | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0    | 0.0    | 0.0                       | 0.0    | 0.0    |
| Spillway Release             | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0    | 0.0    | 0.0                       | 0.0    | 0.0    |
| Total Release                | kaf | 32.6                      | 31.4   | 32.5   | 32.5   | 29.3   | 67.6   | 95.2  | 160.5  | 155.3  | 160.5                     | 123.0  | 49.0   |
| Total Release                | cfs | 530.                      | 528.   | 529.   | 529.   | 528.   | 1099.  | 1600.   | 2610.  | 2610.  | 2610.                     | 2000.  | 823.   |
| Evaporation                  | kaf | 4.0                       | 2.1    | 1.2    | 1.2    | 1.2    | 2.4    | 4.5   | 4.6    | 8.5    | 9.7                       | 7.8    | 5.2    |
| End-month content            | kaf | 666.7                     | 663.8  | 655.2  | 644.3  | 638.5  | 623.9  | 636.9   | 710.2  | 863.8  | 788.6                     | 693.3  | 659.0* |
| End-month elevation          | ft  | 6336.7                    | 6336.5 | 6335.9 | 6335.1 | 6334.7 | 6333.7 | 6334.6  | 6339.6 | 6349.0 | 6344.6                    | 6338.5 | 6336.2 |

| Kortes Reservoir Operations |     | Initial Content 4.7 Kaf |      |      |      |      |       | Operating Limits: Max 4.8 Kaf, 6142.73 Ft. |       |       | Min 1.7 Kaf, 6092.73 Ft. |       |      |
|-----------------------------|-----|-------------------------|------|------|------|------|-------|--|-------|-------|--------------------------|-------|------|
|                             |     | Oct                     | Nov  | Dec  | Jan  | Feb  | Mar   | Apr  | May   | Jun   | Jul                      | Aug   | Sep  |
| Total Inflow                | kaf | 32.6                    | 31.4 | 32.5 | 32.5 | 29.3 | 67.6  | 95.2                                       | 160.5 | 155.3 | 160.5                    | 123.0 | 49.0 |
| Total Inflow                | cfs | 530.                    | 528. | 529. | 529. | 528. | 1099. | 1600.                                      | 2610. | 2610. | 2610.                    | 2000. | 823. |
| Turbine Release             | kaf | 32.5                    | 31.4 | 32.5 | 32.5 | 29.3 | 67.6  | 95.2                                       | 160.5 | 155.3 | 160.5                    | 123.0 | 49.0 |
| Spillway Release            | kaf | 0.0                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0                      | 0.0   | 0.0  |
| Total Release               | kaf | 32.5                    | 31.4 | 32.5 | 32.5 | 29.3 | 67.6  | 95.2                                       | 160.5 | 155.3 | 160.5                    | 123.0 | 49.0 |
| Total Release               | cfs | 529.                    | 528. | 529. | 529. | 528. | 1099. | 1600.                                      | 2610. | 2610. | 2610.                    | 2000. | 823. |

| Pathfinder Reservoir Operations |     | Initial Content 591.7 Kaf |        |        |        |        |        | Operating Limits: Max 1095.0 Kaf, 5853.56 Ft. |        |        | Min 31.4 Kaf, 5746.00 Ft. |        |        |
|---------------------------------|-----|---------------------------|--------|--------|--------|--------|--------|---|--------|--------|---------------------------|--------|--------|
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr   | May    | Jun    | Jul                       | Aug    | Sep    |
| Sweetwater Inflow               | kaf | 3.3                       | 3.7    | 3.6    | 3.7    | 3.9    | 5.0    | 12.7  | 18.4   | 15.9   | 4.8                       | 2.1    | 1.3    |
| Kortes-Path Gain                | kaf | 1.2                       | -0.5   | 0.2    | 1.0    | 2.0    | 4.5    | 6.3   | 8.3    | 2.8    | 4.3                       | 6.6    | 3.6    |
| Inflow from Kortes              | kaf | 32.5                      | 31.4   | 32.5   | 32.5   | 29.3   | 67.6   | 95.2  | 160.5  | 155.3  | 160.5                     | 123.0  | 49.0   |
| Total Inflow                    | kaf | 37.0                      | 34.6   | 36.3   | 37.2   | 35.2   | 77.1   | 114.2   | 187.2  | 174.0  | 169.6                     | 131.7  | 53.9   |
| Total Inflow                    | cfs | 602.                      | 581.   | 590.   | 605.   | 634.   | 1254.  | 1919.   | 3045.  | 2924.  | 2758.                     | 2142.  | 906.   |
| Turbine Release                 | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 23.8   | 45.0   | 67.5  | 100.9  | 163.6  | 169.1                     | 162.2  | 65.5   |
| Jetflow Release                 | kaf | 7.7                       | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 4.5   | 4.6    | 15.8   | 16.9                      | 4.6    | 4.5    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0    | 0.0    | 0.0                       | 0.0    | 0.0    |
| Total Release                   | kaf | 7.7                       | 30.1   | 30.9   | 30.9   | 28.0   | 49.6   | 72.0  | 105.5  | 179.4  | 186.0                     | 166.8  | 70.0   |
| Total Release                   | cfs | 125.                      | 506.   | 503.   | 503.   | 504.   | 807.   | 1210.   | 1716.  | 3015.  | 3025.                     | 2713.  | 1176.  |
| Evaporation                     | kaf | 4.3                       | 2.3    | 1.4    | 1.4    | 1.3    | 2.7    | 5.3   | 6.9    | 10.5   | 11.4                      | 9.7    | 7.3    |
| End-month content               | kaf | 616.7                     | 618.9  | 622.9  | 627.8  | 633.7  | 658.5  | 695.4   | 770.2  | 754.3  | 726.5                     | 681.7  | 658.3  |
| End-month elevation             | ft  | 5828.6                    | 5828.7 | 5829.0 | 5829.3 | 5829.7 | 5831.3 | 5833.5  | 5837.8 | 5837.0 | 5835.4                    | 5832.7 | 5831.3 |

| Alcova Reservoir Operations |     | Initial Content 180.0 Kaf |        |        |        |        |        | Operating Limits: Max 184.4 Kaf, 5500.00 Ft. |        |        | Min 145.3 Kaf, 5483.12 Ft. |        |        |
|-----------------------------|-----|---------------------------|--------|--------|--------|--------|--------|--|--------|--------|----------------------------|--------|--------|
|                             |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul                        | Aug    | Sep    |
| Total Inflow                | kaf | 7.7                       | 30.1   | 30.9   | 30.9   | 28.0   | 49.6   | 72.0   | 105.5  | 179.4  | 186.0                      | 166.8  | 70.0   |
| Total Inflow                | cfs | 125.                      | 506.   | 503.   | 503.   | 504.   | 807.   | 1210.  | 1716.  | 3015.  | 3025.                      | 2713.  | 1176.  |
| Turbine Release             | kaf | 31.1                      | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.7   | 95.0   | 164.7  | 166.1                      | 149.9  | 59.6   |
| Spillway Release            | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0                        | 0.0    | 0.0    |
| Casper Canal Release        | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 9.5    | 13.3   | 18.3                       | 15.5   | 9.3    |
| Total Release               | kaf | 31.1                      | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.7   | 104.5  | 178.0  | 184.4                      | 165.4  | 68.9   |
| Total Release               | cfs | 506.                      | 501.   | 499.   | 499.   | 501.   | 800.   | 802.   | 1700.  | 2991.  | 2999.                      | 2690.  | 1158.  |
| Evaporation                 | kaf | 0.7                       | 0.3    | 0.2    | 0.2    | 0.2    | 0.4    | 0.8  | 1.0    | 1.4    | 1.6                        | 1.4    | 1.1    |
| End-month content           | kaf | 155.9*                    | 155.9* | 155.9* | 155.9* | 155.9* | 155.9* | 179.4*                                       | 179.4* | 179.4* | 179.4*                     | 179.4* | 179.4* |
| End-month elevation         | ft  | 5487.9                    | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5498.0                                       | 5498.0 | 5498.0 | 5498.0                     | 5498.0 | 5498.0 |

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 8: 5

Based on Most Probable April - July Inflow: Seminoe 767.3 kaf, Sweetwater 51.8 kaf, Glendo 126.3 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| Gray Reef Reservoir Operations |     | Initial Content |        |        |        |        |        | 1.3 Kaf   |        |        | Operating Limits: Max |        |        | 1.7 Kaf, 5331.44 Ft.   |                       |       |       |
|--------------------------------|-----|-----------------|--------|--------|--------|--------|--------|-----------|--------|--------|-----------------------|--------|--------|------------------------|-----------------------|-------|-------|
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Min                   | Jul    | Aug    | Sep                    | 0.0 Kaf, 5306.00 Ft.  |       |       |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  | -----                 | ----- | ----- |
| Total Inflow                   | kaf | 31.1            | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.7      | 95.0   | 164.7  | 166.1                 | 149.9  | 59.6   |                        |                       |       |       |
| Total Inflow                   | cfs | 506.            | 501.   | 499.   | 499.   | 501.   | 800.   | 802.      | 1545.  | 2768.  | 2701.                 | 2438.  | 1002.  |                        |                       |       |       |
| Total Release                  | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.6      | 94.9   | 164.6  | 166.0                 | 149.8  | 59.5   |                        |                       |       |       |
| Total Release                  | cfs | 499.            | 501.   | 499.   | 499.   | 501.   | 800.   | 800.      | 1543.  | 2766.  | 2700.                 | 2436.  | 1000.  |                        |                       |       |       |
| Glendo Reservoir Operations    |     | Initial Content |        |        |        |        |        | 158.0 Kaf |        |        | Operating Limits: Max |        |        | 763.0 Kaf, 4653.00 Ft. |                       |       |       |
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Min                   | Jul    | Aug    | Sep                    | 51.6 Kaf, 4570.01 Ft. |       |       |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  | -----                 | ----- | ----- |
| Alcova-Glendo Gain             | kaf | 11.5            | 11.0   | 7.1    | 8.7    | 15.8   | 17.9   | 45.0      | 67.6   | 14.0   | -0.3                  | -2.6   | 8.6    |                        |                       |       |       |
| Infl from Gray Reef            | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.6      | 94.9   | 164.6  | 166.0                 | 149.8  | 59.5   |                        |                       |       |       |
| Total Inflow                   | kaf | 42.2            | 40.8   | 37.8   | 39.4   | 43.6   | 67.1   | 92.6      | 162.5  | 178.6  | 165.7                 | 147.2  | 68.1   |                        |                       |       |       |
| Total Inflow                   | cfs | 686.            | 686.   | 615.   | 641.   | 785.   | 1091.  | 1556.     | 2643.  | 3001.  | 2695.                 | 2394.  | 1144.  |                        |                       |       |       |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 12.2      | 157.7  | 167.2  | 230.5                 | 221.4  | 136.8  |                        |                       |       |       |
| 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    |                        |                       |       |       |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 0.0                   | 0.0    | 0.0    |                        |                       |       |       |
| Irrigation Release             | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 3.3    | 0.0       | 0.0    | 0.0    | 81.1                  | 59.6   | 0.0    |                        |                       |       |       |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.5    | 4.8    | 13.7      | 159.2  | 168.7  | 313.1                 | 282.5  | 138.3  |                        |                       |       |       |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 27.    | 78.    | 230.      | 2589.  | 2835.  | 5092.                 | 4594.  | 2324.  |                        |                       |       |       |
| Evaporation                    | kaf | 1.4             | 0.9    | 0.8    | 0.9    | 1.0    | 1.9    | 3.3       | 5.1    | 6.9    | 6.8                   | 4.6    | 2.5    |                        |                       |       |       |
| End-month content              | kaf | 197.3           | 235.7  | 271.2  | 308.2  | 349.3  | 409.7  | 486.3     | 486.5* | 490.3* | 335.6                 | 193.7# | 120.0* |                        |                       |       |       |
| End-month elevation            | ft  | 4602.4          | 4607.9 | 4612.5 | 4616.9 | 4621.5 | 4627.6 | 4634.5    | 4634.5 | 4634.9 | 4620.0                | 4601.9 | 4588.6 |                        |                       |       |       |
| Guernsey Reservoir Operations  |     | Initial Content |        |        |        |        |        | 5.8 Kaf   |        |        | Operating Limits: Max |        |        | 45.6 Kaf, 4419.99 Ft.  |                       |       |       |
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Min                   | Jul    | Aug    | Sep                    | 0.0 Kaf, 4370.00 Ft.  |       |       |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  | -----                 | ----- | ----- |
| Glendo-Guerns Gain             | kaf | 3.4             | 2.1    | 1.8    | 1.5    | 1.1    | 0.6    | 5.7       | 8.5    | 2.7    | 2.3                   | 0.3    | 5.2    |                        |                       |       |       |
| Inflow from Glendo             | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.5    | 4.8    | 13.7      | 159.2  | 168.7  | 313.1                 | 282.5  | 138.3  |                        |                       |       |       |
| Total Inflow                   | kaf | 4.9             | 3.6    | 3.3    | 3.0    | 2.6    | 5.4    | 19.4      | 167.7  | 171.4  | 315.4                 | 282.8  | 143.5  |                        |                       |       |       |
| Total Inflow                   | cfs | 80.             | 60.    | 54.    | 49.    | 47.    | 88.    | 326.      | 2727.  | 2880.  | 5129.                 | 4599.  | 2412.  |                        |                       |       |       |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.6       | 53.6   | 51.8   | 53.6                  | 53.6   | 55.8   |                        |                       |       |       |
| Seepage                        | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4       | 1.2    | 3.0    | 3.1                   | 2.5    | 0.3    |                        |                       |       |       |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 112.2  | 115.6  | 257.6                 | 225.8  | 112.9  |                        |                       |       |       |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 10.0      | 167.0  | 170.4  | 314.3                 | 281.9  | 169.0  |                        |                       |       |       |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 22.    | 16.    | 168.      | 2716.  | 2864.  | 5112.                 | 4585.  | 2840.  |                        |                       |       |       |
| Evaporation                    | kaf | 0.2             | 0.2    | 0.2    | 0.2    | 0.2    | 0.3    | 0.5       | 0.7    | 1.0    | 1.1                   | 0.9    | 0.5    |                        |                       |       |       |
| End-month content              | kaf | 9.0*            | 10.9*  | 12.5*  | 13.8*  | 15.0*  | 19.1*  | 28.0*     | 28.0*  | 28.0*  | 28.0*                 | 28.0*  | 2.0*   |                        |                       |       |       |
| End-month elevation            | ft  | 4399.3          | 4401.1 | 4402.4 | 4403.4 | 4404.3 | 4407.0 | 4411.9    | 4411.9 | 4411.9 | 4411.9                | 4411.9 | 4388.0 |                        |                       |       |       |
| Physical EOM Cont              | kaf | 1652.1          | 1691.7 | 1724.2 | 1756.5 | 1798.9 | 1873.6 | 2032.5    | 2180.8 | 2322.3 | 2064.6                | 1782.6 | 1625.2 |                        |                       |       |       |

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 8: 5

Based on Most Probable April - July Inflow: Seminoe 767.3 kaf, Sweetwater 51.8 kaf, Glendo 126.3 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

OWNERSHIP OPERATIONS

| North Platte Pathfinder |     | Initial Ownership 449.0 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |       |       |        |       |       |       |
|-------------------------|-----|--|--------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Net Accrual             | kaf | 31.4   | 29.6   | 27.1   | 25.8  | 28.7  | 61.6  | 126.4 | 205.8 | 84.6   | 0.0   | 0.0   | 0.0   |
| Evaporation             | kaf | 2.9  | 1.7    | 1.1    | 1.2   | 1.3   | 2.5   | 5.0   | 7.1   | 12.8   | 14.1  | 10.6  | 6.1   |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 159.1 | 235.7 | 127.1 |
| End-month Ownership     | kaf | 480.4  | 510.0  | 537.1  | 562.9 | 591.6 | 653.2 | 779.6 | 985.4 | 1070.0 | 896.8 | 650.5 | 517.3 |
| North Platte Guernsey   |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |        |       |       |       |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Net Accrual             | kaf | 0.0  | 0.0    | 7.4    | 8.7   | 15.7  | 13.8  | 0.0   | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   |
| Evaporation/Seepage     | kaf | 0.0  | 0.0    | 1.5    | 1.5   | 1.2   | 1.1   | 0.4   | 0.4   | 0.6    | 0.6   | 0.0   | 0.0   |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 43.6  | 0.0   | 0.0   |
| End-month Ownership     | kaf | 0.0  | 0.0    | 7.4    | 16.1  | 31.8  | 45.6  | 45.2  | 44.8  | 44.2   | 0.0   | 0.0   | 0.0   |
| Inland Lakes            |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |        |       |       |       |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Net Accrual             | kaf | 13.4   | 11.6   | 0.0    | 0.0   | 0.0   | 0.0   | 21.0  | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   |
| Evaporation/Seepage     | kaf | 1.5  | 1.5    | 0.1    | 0.1   | 0.1   | 0.1   | 0.2   | 0.3   | 0.0    | 0.0   | 0.0   | 0.0   |
| Trnsfr fm Ownership     | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 10.0  | 35.3  | 0.0    | 0.0   | 0.0   | 0.0   |
| End-month Ownership     | kaf | 13.4   | 25.0   | 24.9   | 24.8  | 24.7  | 24.6  | 35.6  | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   |
| Kendrick                |     | Initial Ownership 1013.3 Kaf, Accrued this water year: 0.0 Kaf |        |        |       |       |       |       |       |        |       |       |       |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Net Accrual             | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 60.4   | 0.0   | 0.0   | 0.0   |
| Evaporation             | kaf | 6.7  | 3.5    | 2.3    | 2.3   | 2.2   | 4.3   | 7.7   | 8.9   | 12.6   | 13.6  | 11.8  | 9.1   |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 9.5   | 0.0    | 18.3  | 15.5  | 9.3   |
| End-month Ownership     | kaf | 1006.6   | 1003.1 | 1000.8 | 998.5 | 996.3 | 992.0 | 984.3 | 965.9 | 1026.3 | 994.4 | 967.1 | 948.7 |
| Glendo Unit             |     | Initial Ownership 138.7 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |       |       |        |       |       |       |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Accrual                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 3.6   | 29.4  | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   |
| Evaporation             | kaf | 0.9  | 0.5    | 0.3    | 0.3   | 0.3   | 0.6   | 1.1   | 1.5   | 2.2    | 2.2   | 1.9   | 1.4   |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 6.0   | 5.0   | 4.0   |
| End-month Ownership     | kaf | 137.8  | 137.3  | 137.0  | 136.7 | 136.4 | 139.4 | 167.7 | 166.2 | 164.0  | 155.8 | 148.9 | 143.5 |
| Re-regulation           |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |        |       |       |       |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun    | Jul   | Aug   | Sep   |
| Accrual                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.1   | 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   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   |
| Release                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.1   | 0.0   | 0.0   |
| End-month total         | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.1   | 0.1   | 0.1    | 0.0   | 0.0   | 0.0   |

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 8: 5

Based on Most Probable April - July Inflow: Seminoe 767.3 kaf, Sweetwater 51.8 kaf, Glendo 126.3 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| City of Cheyenne        |     | Initial Ownership 4.1 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------|-----|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.7                        | 2.5    | 0.7    | 0.5    | 0.6    | 0.8    | 0.3    | 0.6    | 0.5    | 1.1    | 0.7    | 0.7    |
| Evaporation             | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 4.0    | 1.8    | 0.5    | 0.0    | 0.0    |
| Ownership               | kaf | 4.8                        | 7.3    | 8.0    | 8.5    | 9.1    | 9.8    | 10.0   | 6.5    | 5.1    | 5.6    | 6.2    | 6.9    |
| Pacificorp              |     | Initial Ownership 2.0 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Ownership               | kaf | 2.0                        | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| Other                   |     | Initial Ownership 7.2 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.0    | 2.0    | 0.8    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 0.1                        | 0.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.5    | 2.0    | 1.0    |
| Ownership               | kaf | 7.1                        | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 8.0    | 9.9    | 10.6   | 10.0   | 7.9    | 6.8    |
| IRRIGATION DELIVERY     |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| Kendrick (Casper Canal) |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Delivered               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Kendrick (River)        |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Guernsey Deliveries     |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| North Platte Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 131.7  | 168.4  | 308.3  | 276.9  | 165.0  |
| Glendo Req              | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 2.0    | 6.0    | 5.0    | 4.0    |
| Inland Lakes Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 10.0   | 35.3   | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Requirement       | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 10.0   | 167.0  | 170.4  | 314.3  | 281.9  | 169.0  |
| Seepage                 | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4    | 1.2    | 3.0    | 3.1    | 2.5    | 0.3    |
| Actual Release          | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 10.0   | 167.0  | 170.4  | 314.3  | 281.9  | 169.0  |
| Ownership EOM Cont      | kaf | 1652.1                     | 1691.7 | 1724.2 | 1756.5 | 1798.9 | 1873.6 | 2032.5 | 2180.8 | 2322.3 | 2064.6 | 1782.6 | 1625.2 |

**Table 15 (Continued) Most Probable Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 8: 5

Based on Most Probable April - July Inflow: Seminoe 767.3 kaf, Sweetwater 51.8 kaf, Glendo 126.3 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

POWER GENERATION

|                        |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Seminoe Power Plant    |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 32.6   | 31.4   | 32.5   | 32.5   | 29.3   | 67.6   | 95.2   | 160.5  | 155.3  | 160.5  | 123.0  | 49.0   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 20.541 | 19.756 | 20.748 | 26.591 | 29.255 | 32.191 | 31.154 | 32.989 | 32.376 | 33.250 | 33.485 | 31.971 |
| Actual generation      | gwh | 5.444  | 5.244  | 5.416  | 5.384  | 4.835  | 11.142 | 15.684 | 26.809 | 26.916 | 28.088 | 21.003 | 8.198  |
| Percent max generation |     | 27.    | 27.    | 26.    | 20.    | 17.    | 35.    | 50.    | 81.    | 83.    | 84.    | 63.    | 26.    |
| Average kwh/af         |     | 167.   | 167.   | 167.   | 166.   | 165.   | 165.   | 165.   | 167.   | 173.   | 175.   | 171.   | 167.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Kortes Power Plant     |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 32.5   | 31.4   | 32.5   | 32.5   | 29.3   | 67.6   | 95.2   | 160.5  | 155.3  | 160.5  | 123.0  | 49.0   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 28.346 | 23.168 | 18.404 | 21.362 | 15.428 | 14.242 | 22.859 | 27.606 | 26.712 | 27.606 | 27.606 | 26.712 |
| Actual generation      | gwh | 5.590  | 5.401  | 5.590  | 5.590  | 5.040  | 11.627 | 16.374 | 27.606 | 26.712 | 27.606 | 21.156 | 8.428  |
| Percent max generation |     | 20.    | 23.    | 30.    | 26.    | 33.    | 82.    | 72.    | 100.   | 100.   | 100.   | 77.    | 32.    |
| Average kwh/af         |     | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Fremont Canyon         |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 23.8   | 45.0   | 67.5   | 100.9  | 163.6  | 169.1  | 162.2  | 65.5   |
| Bypass                 | kaf | 7.7    | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 4.5    | 4.6    | 15.8   | 16.9   | 4.6    | 4.5    |
| Maximum generation     | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 27.235 | 45.780 | 44.571 | 46.573 | 45.315 | 46.641 | 46.314 | 44.510 |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 6.418  | 12.183 | 18.390 | 27.789 | 45.315 | 46.641 | 44.424 | 17.820 |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 24.    | 27.    | 41.    | 60.    | 100.   | 100.   | 96.    | 40.    |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 270.   | 271.   | 272.   | 275.   | 277.   | 276.   | 274.   | 272.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Alcova Power Plant     |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 31.1   | 29.8   | 30.7   | 30.7   | 27.8   | 49.2   | 47.7   | 95.0   | 164.7  | 166.1  | 149.9  | 59.6   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 27.168 | 26.588 | 27.472 | 19.951 | 12.852 | 16.402 | 22.784 | 27.552 | 26.656 | 27.552 | 27.552 | 26.656 |
| Actual generation      | gwh | 4.293  | 4.053  | 4.175  | 4.175  | 3.781  | 6.691  | 6.583  | 13.300 | 23.058 | 23.254 | 20.986 | 8.344  |
| Percent max generation |     | 16.    | 15.    | 15.    | 21.    | 29.    | 41.    | 29.    | 48.    | 87.    | 84.    | 76.    | 31.    |
| Average kwh/af         |     | 138.   | 136.   | 136.   | 136.   | 136.   | 136.   | 138.   | 140.   | 140.   | 140.   | 140.   | 140.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Glendo Power Plant     |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 12.2   | 157.7  | 167.2  | 230.5  | 221.4  | 136.8  |
| Bypass                 | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 4.8    | 1.5    | 1.5    | 1.5    | 82.6   | 61.1   | 1.5    |
| Maximum generation     | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 25.254 | 27.231 | 26.408 | 25.075 | 20.740 | 15.320 |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 1.360  | 18.051 | 19.164 | 25.075 | 20.740 | 10.134 |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 5.     | 66.    | 73.    | 100.   | 100.   | 66.    |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 111.   | 114.   | 115.   | 109.   | 94.    | 74.    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Guernsey Power Plant   |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.6    | 53.6   | 51.8   | 53.6   | 53.6   | 55.8   |
| Bypass                 | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4    | 113.4  | 118.6  | 260.7  | 228.3  | 113.2  |
| Maximum generation     | gwh | 2.306  | 0.218  | 1.367  | 1.727  | 1.800  | 3.588  | 3.584  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.654  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 18.    | 100.   | 100.   | 100.   | 100.   | 100.   |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 68.    | 71.    | 71.    | 71.    | 71.    | 61.    |

**Table 16** Reasonable Minimum Operating Plan for Water Year 2019

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 16:15

Based on Reasonable minimum April - July Inflow: Seminoe 339.5 kaf, Sweetwater 21.3 kaf, Glendo 21.8 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

HYDROLOGY OPERATIONS

| Seminoe Reservoir Operations |     | Initial Content 672.8 Kaf |        |        |        |        |        | Operating Limits: Max 1017.3 Kaf, 6357.00 Ft.<br>Min 31.7 Kaf, 6239.02 Ft. |        |        |        |        |        |
|------------------------------|-----|---------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|
|                              |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                 | kaf | 22.1                      | 21.7   | 20.8   | 18.5   | 20.6   | 43.4   | 69.7   | 117.0  | 120.2  | 32.6   | 18.9   | 13.3   |
| Total Inflow                 | cfs | 359.                      | 365.   | 338.   | 301.   | 371.   | 706.   | 1171.  | 1903.  | 2020.  | 530.   | 307.   | 224.   |
| Turbine Release              | kaf | 32.7                      | 31.5   | 32.6   | 32.6   | 29.4   | 49.5   | 47.9   | 67.6   | 155.2  | 123.0  | 86.1   | 47.6   |
| Jetflow Release              | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Spillway Release             | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                | kaf | 32.7                      | 31.5   | 32.6   | 32.6   | 29.4   | 49.5   | 47.9   | 67.6   | 155.2  | 123.0  | 86.1   | 47.6   |
| Total Release                | cfs | 532.                      | 529.   | 530.   | 530.   | 529.   | 805.   | 805.   | 1099.  | 2608.  | 2000.  | 1400.  | 800.   |
| Evaporation                  | kaf | 4.0                       | 2.1    | 1.2    | 1.0    | 1.0    | 2.3    | 4.4  | 4.5    | 7.2    | 7.2    | 5.6    | 3.7    |
| End-month content            | kaf | 658.9                     | 649.5  | 637.2  | 622.6  | 613.4  | 605.8  | 623.5  | 665.0  | 623.9  | 526.9  | 454.8  | 417.5* |
| End-month elevation          | ft  | 6336.2                    | 6335.5 | 6334.6 | 6333.6 | 6332.9 | 6332.3 | 6333.6   | 6336.6 | 6333.7 | 6326.1 | 6319.7 | 6316.1 |

| Kortes Reservoir Operations |     | Initial Content 4.7 Kaf |      |      |      |      |      | Operating Limits: Max 4.8 Kaf, 6142.73 Ft.<br>Min 1.7 Kaf, 6092.73 Ft. |       |       |       |       |      |
|-----------------------------|-----|-------------------------|------|------|------|------|------|--|-------|-------|-------|-------|------|
|                             |     | Oct                     | Nov  | Dec  | Jan  | Feb  | Mar  | Apr  | May   | Jun   | Jul   | Aug   | Sep  |
| Total Inflow                | kaf | 32.7                    | 31.5 | 32.6 | 32.6 | 29.4 | 49.5 | 47.9   | 67.6  | 155.2 | 123.0 | 86.1  | 47.6 |
| Total Inflow                | cfs | 532.                    | 529. | 530. | 530. | 529. | 805. | 805.   | 1099. | 2608. | 2000. | 1400. | 800. |
| Turbine Release             | kaf | 32.6                    | 31.5 | 32.6 | 32.6 | 29.4 | 49.5 | 47.9   | 67.6  | 155.2 | 123.0 | 86.1  | 47.6 |
| Spillway Release            | kaf | 0.0                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  |
| Total Release               | kaf | 32.6                    | 31.5 | 32.6 | 32.6 | 29.4 | 49.5 | 47.9   | 67.6  | 155.2 | 123.0 | 86.1  | 47.6 |
| Total Release               | cfs | 530.                    | 529. | 530. | 530. | 529. | 805. | 805.   | 1099. | 2608. | 2000. | 1400. | 800. |

| Pathfinder Reservoir Operations |     | Initial Content 591.7 Kaf |        |        |        |        |        | Operating Limits: Max 1095.0 Kaf, 5853.56 Ft.<br>Min 31.4 Kaf, 5746.00 Ft. |        |        |        |        |        |
|---------------------------------|-----|---------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Sweetwater Inflow               | kaf | 1.9                       | 2.3    | 2.1    | 1.9    | 1.9    | 3.7    | 8.9  | 6.0    | 4.9    | 1.5    | 0.9    | 0.7    |
| Kortes-Path Gain                | kaf | -1.1                      | -1.5   | -1.4   | 0.1    | 0.7    | 2.7    | 2.4  | 1.9    | -2.3   | -3.4   | -0.5   | -0.7   |
| Inflow from Kortes              | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 49.5   | 47.9   | 67.6   | 155.2  | 123.0  | 86.1   | 47.6   |
| Total Inflow                    | kaf | 33.4                      | 32.3   | 33.3   | 34.6   | 32.0   | 55.9   | 59.2   | 75.5   | 157.8  | 121.1  | 86.5   | 47.6   |
| Total Inflow                    | cfs | 543.                      | 543.   | 542.   | 563.   | 576.   | 909.   | 995.   | 1228.  | 2652.  | 1970.  | 1407.  | 800.   |
| Turbine Release                 | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 23.8   | 45.3   | 67.7   | 159.9  | 163.6  | 169.1  | 129.2  | 47.2   |
| Jetflow Release                 | kaf | 7.1                       | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 4.5  | 4.6    | 41.8   | 53.8   | 4.6    | 4.5    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 7.1                       | 30.1   | 30.9   | 30.9   | 28.0   | 49.9   | 72.2   | 164.5  | 205.4  | 222.9  | 133.8  | 51.7   |
| Total Release                   | cfs | 115.                      | 506.   | 503.   | 503.   | 504.   | 812.   | 1213.  | 2675.  | 3452.  | 3625.  | 2176.  | 869.   |
| Evaporation                     | kaf | 4.3                       | 2.4    | 1.4    | 1.3    | 1.4    | 2.6    | 4.9  | 5.4    | 7.1    | 6.7    | 4.9    | 3.5    |
| End-month content               | kaf | 613.7                     | 613.5  | 614.5  | 616.9  | 619.5  | 622.9  | 605.0  | 510.6  | 455.9  | 347.4  | 295.2  | 287.6  |
| End-month elevation             | ft  | 5828.4                    | 5828.4 | 5828.4 | 5828.6 | 5828.8 | 5829.0 | 5827.8   | 5820.9 | 5816.4 | 5805.8 | 5799.7 | 5798.8 |

| Alcova Reservoir Operations |     | Initial Content 180.0 Kaf |        |        |        |        |        | Operating Limits: Max 184.4 Kaf, 5500.00 Ft.<br>Min 145.3 Kaf, 5483.12 Ft. |        |        |        |        |        |
|-----------------------------|-----|---------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|
|                             |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                | kaf | 7.1                       | 30.1   | 30.9   | 30.9   | 28.0   | 49.9   | 72.2   | 164.5  | 205.4  | 222.9  | 133.8  | 51.7   |
| Total Inflow                | cfs | 115.                      | 506.   | 503.   | 503.   | 504.   | 812.   | 1213.  | 2675.  | 3452.  | 3625.  | 2176.  | 869.   |
| Turbine Release             | kaf | 30.5                      | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9   | 154.0  | 190.4  | 196.8  | 116.9  | 41.3   |
| Spillway Release            | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.3    | 6.2    | 0.0    | 0.0    |
| Casper Canal Release        | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Total Release               | kaf | 30.5                      | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9   | 163.5  | 204.0  | 221.3  | 132.4  | 50.6   |
| Total Release               | cfs | 496.                      | 501.   | 499.   | 499.   | 501.   | 805.   | 805.   | 2659.  | 3428.  | 3599.  | 2153.  | 850.   |
| Evaporation                 | kaf | 0.7                       | 0.3    | 0.2    | 0.2    | 0.2    | 0.4    | 0.8  | 1.0    | 1.4    | 1.6    | 1.4    | 1.1    |
| End-month content           | kaf | 155.9*                    | 155.9* | 155.9* | 155.9* | 155.9* | 155.9* | 179.4*   | 179.4* | 179.4* | 179.4* | 179.4* | 179.4* |
| End-month elevation         | ft  | 5487.9                    | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5498.0   | 5498.0 | 5498.0 | 5498.0 | 5498.0 | 5498.0 |



**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 16:15

Based on Reasonable minimum April - July Inflow: Seminoe 339.5 kaf, Sweetwater 21.3 kaf, Glendo 21.8 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| Gray Reef Reservoir Operations |     | Initial Content |        |        |        |        |        | 1.3 Kaf   |        |        | Operating Limits: Max |        |        | 1.1 Kaf, 5327.42 Ft.   |  |  |
|--------------------------------|-----|-----------------|--------|--------|--------|--------|--------|-----------|--------|--------|-----------------------|--------|--------|------------------------|--|--|
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    | 0.0 Kaf, 5306.00 Ft.   |  |  |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  |  |  |
| Total Inflow                   | kaf | 30.5            | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9      | 154.0  | 190.7  | 203.0                 | 116.9  | 41.3   |                        |  |  |
| Total Inflow                   | cfs | 496.            | 501.   | 499.   | 499.   | 501.   | 805.   | 805.      | 2505.  | 3205.  | 3301.                 | 1901.  | 694.   |                        |  |  |
| Total Release                  | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9      | 154.0  | 190.6  | 202.9                 | 116.8  | 41.2   |                        |  |  |
| Total Release                  | cfs | 499.            | 501.   | 499.   | 499.   | 501.   | 805.   | 805.      | 2505.  | 3203.  | 3300.                 | 1900.  | 692.   |                        |  |  |
|                                |     |                 |        |        |        |        |        |           |        |        |                       |        |        |                        |  |  |
| Glendo Reservoir Operations    |     | Initial Content |        |        |        |        |        | 158.0 Kaf |        |        | Operating Limits: Max |        |        | 789.4 Kaf, 4654.45 Ft. |  |  |
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    | 63.2 Kaf, 4573.94 Ft.  |  |  |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  |  |  |
| 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    |                        |  |  |
| Infl from Gray Reef            | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9      | 154.0  | 190.6  | 202.9                 | 116.8  | 41.2   |                        |  |  |
| Total Inflow                   | kaf | 40.8            | 38.0   | 36.6   | 37.0   | 36.2   | 61.3   | 58.7      | 169.3  | 190.0  | 199.2                 | 115.2  | 49.6   |                        |  |  |
| Total Inflow                   | cfs | 664.            | 639.   | 595.   | 602.   | 652.   | 997.   | 986.      | 2753.  | 3193.  | 3240.                 | 1874.  | 834.   |                        |  |  |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 5.5    | 17.5      | 147.8  | 171.7  | 227.8                 | 221.4  | 83.6   |                        |  |  |
| 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    |                        |  |  |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 0.0                   | 0.0    | 0.0    |                        |  |  |
| Irrigation Release             | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 89.0                  | 51.3   | 0.0    |                        |  |  |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.5    | 7.0    | 19.0      | 149.3  | 173.2  | 318.3                 | 274.2  | 85.1   |                        |  |  |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 27.    | 114.   | 319.      | 2428.  | 2911.  | 5177.                 | 4459.  | 1430.  |                        |  |  |
| Evaporation                    | kaf | 1.4             | 0.9    | 0.8    | 0.7    | 1.0    | 1.8    | 3.2       | 4.5    | 6.4    | 6.6                   | 4.4    | 2.3    |                        |  |  |
| End-month content              | kaf | 195.9           | 231.5  | 265.8  | 300.6  | 334.3  | 386.8  | 423.3     | 438.8  | 449.2* | 323.1                 | 157.8  | 120.0* |                        |  |  |
| End-month elevation            | ft  | 4602.2          | 4607.3 | 4611.8 | 4616.0 | 4619.9 | 4625.4 | 4628.9    | 4630.3 | 4631.3 | 4618.6                | 4596.0 | 4588.6 |                        |  |  |
|                                |     |                 |        |        |        |        |        |           |        |        |                       |        |        |                        |  |  |
| Guernsey Reservoir Operations  |     | Initial Content |        |        |        |        |        | 5.8 Kaf   |        |        | Operating Limits: Max |        |        | 45.6 Kaf, 4419.99 Ft.  |  |  |
| -----                          |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    | 0.0 Kaf, 4370.00 Ft.   |  |  |
| -----                          |     | -----           | -----  | -----  | -----  | -----  | -----  | -----     | -----  | -----  | -----                 | -----  | -----  | -----                  |  |  |
| Glendo-Guerns Gain             | kaf | 2.2             | 1.5    | 1.2    | 1.0    | 1.2    | 1.2    | 0.3       | 2.6    | -1.4   | -2.9                  | -1.4   | 2.1    |                        |  |  |
| Inflow from Glendo             | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.5    | 7.0    | 19.0      | 149.3  | 173.2  | 318.3                 | 274.2  | 85.1   |                        |  |  |
| Total Inflow                   | kaf | 3.7             | 3.0    | 2.7    | 2.5    | 2.7    | 8.2    | 19.3      | 151.9  | 171.8  | 315.4                 | 272.8  | 87.2   |                        |  |  |
| Total Inflow                   | cfs | 60.             | 50.    | 44.    | 41.    | 49.    | 133.   | 324.      | 2470.  | 2887.  | 5129.                 | 4437.  | 1465.  |                        |  |  |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5       | 53.6   | 51.8   | 53.6                  | 53.6   | 55.8   |                        |  |  |
| Seepage                        | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4       | 1.2    | 3.0    | 3.1                   | 2.5    | 0.3    |                        |  |  |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 96.4   | 116.0  | 257.6                 | 215.8  | 56.6   |                        |  |  |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 9.9       | 151.2  | 170.8  | 314.3                 | 271.9  | 112.7  |                        |  |  |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 22.    | 16.    | 166.      | 2459.  | 2870.  | 5112.                 | 4422.  | 1894.  |                        |  |  |
| Evaporation                    | kaf | 0.2             | 0.2    | 0.2    | 0.2    | 0.2    | 0.3    | 0.5       | 0.7    | 1.0    | 1.1                   | 0.9    | 0.5    |                        |  |  |
| End-month content              | kaf | 7.8*            | 9.1*   | 10.1*  | 10.9*  | 12.2*  | 19.1*  | 28.0*     | 28.0*  | 28.0*  | 28.0*                 | 28.0*  | 2.0*   |                        |  |  |
| End-month elevation            | ft  | 4398.1          | 4399.4 | 4400.4 | 4401.1 | 4402.2 | 4407.0 | 4411.9    | 4411.9 | 4411.9 | 4411.9                | 4411.9 | 4388.0 |                        |  |  |
| Physical EOM Cont              | kaf | 1638.1          | 1665.4 | 1689.4 | 1712.8 | 1741.2 | 1796.4 | 1865.1    | 1827.7 | 1742.3 | 1410.7                | 1121.1 | 1012.4 |                        |  |  |

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 16:15

Based on Reasonable minimum April - July Inflow: Seminoe 339.5 kaf, Sweetwater 21.3 kaf, Glendo 21.8 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

OWNERSHIP OPERATIONS  
-----

|                       |     | Initial Ownership 449.0 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |       |       |       |       |       |       |
|-----------------------|-----|--|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Net Accrual           | kaf | 20.0   | 20.8   | 20.4   | 19.5  | 22.0  | 47.4  | 76.4  | 5.3   | 0.0   | 0.0   | 0.0   | 0.0   |
| Evaporation           | kaf | 2.9  | 1.7    | 1.1    | 1.0   | 1.2   | 2.4   | 4.6   | 5.8   | 8.6   | 8.7   | 4.4   | 1.1   |
| Deliv fm Ownership    | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 17.2  | 284.2 | 250.6 | 84.9  |
| End-month Ownership   | kaf | 469.0  | 489.8  | 510.2  | 529.7 | 551.7 | 599.1 | 675.5 | 680.8 | 655.0 | 362.1 | 107.1 | 21.1  |
| North Platte Guernsey |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |       |       |       |       |
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Net Accrual           | kaf | 0.0  | 0.0    | 5.6    | 5.8   | 8.4   | 11.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Evaporation/Seepage   | kaf | 0.0  | 0.0    | 1.5    | 1.5   | 1.2   | 1.1   | 0.2   | 0.3   | 0.4   | 0.0   | 0.0   | 0.0   |
| Trnsfr fm Ownership   | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 30.8  | 0.0   | 0.0   | 0.0   |
| End-month Ownership   | kaf | 0.0  | 0.0    | 5.6    | 11.4  | 19.8  | 31.7  | 31.5  | 31.2  | 0.0   | 0.0   | 0.0   | 0.0   |
| Inland Lakes          |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |       |       |       |       |
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Net Accrual           | kaf | 10.8   | 8.2    | 0.0    | 0.0   | 0.0   | 0.0   | 11.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Evaporation/Seepage   | kaf | 1.5  | 1.5    | 0.1    | 0.1   | 0.1   | 0.1   | 0.1   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| Trnsfr fm Ownership   | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 9.9   | 19.5  | 0.0   | 0.0   | 0.0   | 0.0   |
| End-month Ownership   | kaf | 10.8   | 19.0   | 18.9   | 18.8  | 18.7  | 18.6  | 19.7  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Kendrick              |     | Initial Ownership 1013.3 Kaf, Accrued this water year: 0.0 Kaf |        |        |       |       |       |       |       |       |       |       |       |
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Net Accrual           | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Evaporation           | kaf | 6.7  | 3.6    | 2.3    | 2.0   | 2.2   | 4.2   | 7.6   | 8.5   | 12.3  | 12.6  | 11.2  | 8.8   |
| Deliv fm Ownership    | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 9.5   | 13.3  | 18.3  | 15.5  | 9.3   |
| End-month Ownership   | kaf | 1006.6   | 1003.0 | 1000.7 | 998.7 | 996.5 | 992.3 | 984.7 | 966.7 | 941.1 | 910.2 | 883.5 | 865.4 |
| Glendo Unit           |     | Initial Ownership 138.7 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |       |       |       |       |       |       |
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Accrual               | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Evaporation           | kaf | 0.9  | 0.5    | 0.3    | 0.3   | 0.3   | 0.6   | 1.1   | 1.2   | 1.7   | 1.8   | 1.5   | 1.2   |
| Deliv fm Ownership    | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 2.0   | 6.0   | 5.0   | 4.0   |
| End-month Ownership   | kaf | 137.8  | 137.3  | 137.0  | 136.7 | 136.4 | 135.8 | 134.7 | 133.5 | 129.8 | 122.0 | 115.5 | 110.3 |
| Re-regulation         |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |       |       |       |       |       |       |
|                       |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
| Accrual               | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 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   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Release               | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 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   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 16:15

Based on Reasonable minimum April - July Inflow: Seminoe 339.5 kaf, Sweetwater 21.3 kaf, Glendo 21.8 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| City of Cheyenne        |     | Initial Ownership 4.1 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------|-----|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| 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    |
| Evaporation             | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 4.0    | 1.6    | 0.5    | 0.0    | 0.0    |
| Ownership               | kaf | 4.8                        | 7.3    | 8.0    | 8.5    | 9.1    | 9.9    | 10.1   | 6.6    | 7.6    | 8.1    | 8.7    | 9.3    |
| Pacificorp              |     | Initial Ownership 2.0 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Ownership               | kaf | 2.0                        | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| Other                   |     | Initial Ownership 7.2 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 0.1                        | 0.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.0    | 0.1    | 0.1    | 0.1    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.4    | 1.9    | 0.0    |
| Ownership               | kaf | 7.1                        | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 6.9    | 6.9    | 6.8    | 6.3    | 4.3    | 4.3    |
| IRRIGATION DELIVERY     |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| Kendrick (Casper Canal) |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Delivered               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Kendrick (River)        |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Guernsey Deliveries     |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| North Platte Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 131.7  | 168.8  | 308.3  | 266.9  | 108.7  |
| Glendo Req              | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 2.0    | 6.0    | 5.0    | 4.0    |
| Inland Lakes Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.9    | 19.5   | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Requirement       | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.9    | 151.2  | 170.8  | 314.3  | 271.9  | 112.7  |
| Seepage                 | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4    | 1.2    | 3.0    | 3.1    | 2.5    | 0.3    |
| Actual Release          | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 9.9    | 151.2  | 170.8  | 314.3  | 271.9  | 112.7  |
| Ownership EOM Cont      | kaf | 1638.1                     | 1665.4 | 1689.4 | 1712.8 | 1741.2 | 1796.4 | 1865.1 | 1827.7 | 1742.3 | 1410.7 | 1121.1 | 1012.4 |

**Table 16 (Continued) Reasonable Minimum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 16:15

Based on Reasonable minimum April - July Inflow: Seminoe 339.5 kaf, Sweetwater 21.3 kaf, Glendo 21.8 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

POWER GENERATION

|                             |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|-----------------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Seminoe Power Plant</b>  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 32.7   | 31.5   | 32.6   | 32.6   | 29.4   | 49.5   | 47.9   | 67.6   | 155.2  | 123.0  | 86.1   | 47.6   |
| Bypass                      | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Maximum generation          | gwh | 20.491 | 19.635 | 20.563 | 26.286 | 28.864 | 31.800 | 30.865 | 32.447 | 31.394 | 31.166 | 29.585 | 27.640 |
| Actual generation           | gwh | 5.461  | 5.233  | 5.380  | 5.369  | 4.822  | 8.101  | 7.856  | 11.162 | 25.631 | 19.832 | 13.322 | 7.150  |
| Percent max generation      |     | 27.    | 27.    | 26.    | 20.    | 17.    | 25.    | 25.    | 34.    | 82.    | 64.    | 45.    | 26.    |
| Average kwh/af              |     | 167.   | 166.   | 165.   | 165.   | 164.   | 164.   | 164.   | 165.   | 165.   | 161.   | 155.   | 150.   |
| <b>Kortes Power Plant</b>   |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 32.6   | 31.5   | 32.6   | 32.6   | 29.4   | 49.5   | 47.9   | 67.6   | 155.2  | 123.0  | 86.1   | 47.6   |
| Bypass                      | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Maximum generation          | gwh | 28.346 | 23.168 | 18.404 | 21.362 | 15.428 | 14.242 | 22.859 | 27.606 | 26.712 | 27.606 | 27.606 | 26.712 |
| Actual generation           | gwh | 5.607  | 5.418  | 5.607  | 5.607  | 5.057  | 8.514  | 8.239  | 11.627 | 26.694 | 21.156 | 14.809 | 8.187  |
| Percent max generation      |     | 20.    | 23.    | 30.    | 26.    | 33.    | 60.    | 36.    | 42.    | 100.   | 77.    | 54.    | 31.    |
| Average kwh/af              |     | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   |
| <b>Fremont Canyon</b>       |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 23.8   | 45.3   | 67.7   | 159.9  | 163.6  | 169.1  | 129.2  | 47.2   |
| Bypass                      | kaf | 7.1    | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 4.5    | 4.6    | 41.8   | 53.8   | 4.6    | 4.5    |
| Maximum generation          | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 27.146 | 45.485 | 43.923 | 44.735 | 42.426 | 42.805 | 41.621 | 39.778 |
| Actual generation           | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 6.397  | 12.185 | 18.176 | 42.301 | 42.426 | 42.805 | 31.800 | 11.476 |
| Percent max generation      |     | 0.     | 0.     | 0.     | 0.     | 24.    | 27.    | 41.    | 95.    | 100.   | 100.   | 76.    | 29.    |
| Average kwh/af              |     | 0.     | 0.     | 0.     | 0.     | 269.   | 269.   | 268.   | 265.   | 259.   | 253.   | 246.   | 243.   |
| <b>Alcova Power Plant</b>   |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 30.5   | 29.8   | 30.7   | 30.7   | 27.8   | 49.5   | 47.9   | 154.0  | 190.4  | 196.8  | 116.9  | 41.3   |
| Bypass                      | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.3    | 6.2    | 0.0    | 0.0    |
| Maximum generation          | gwh | 27.168 | 26.588 | 27.472 | 19.951 | 12.852 | 16.402 | 22.784 | 27.552 | 26.656 | 27.552 | 27.552 | 26.656 |
| Actual generation           | gwh | 4.211  | 4.053  | 4.175  | 4.175  | 3.781  | 6.732  | 6.610  | 21.560 | 26.656 | 27.552 | 16.366 | 5.782  |
| Percent max generation      |     | 15.    | 15.    | 15.    | 21.    | 29.    | 41.    | 29.    | 78.    | 100.   | 100.   | 59.    | 22.    |
| Average kwh/af              |     | 138.   | 136.   | 136.   | 136.   | 136.   | 136.   | 138.   | 140.   | 140.   | 140.   | 140.   | 140.   |
| <b>Glendo Power Plant</b>   |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 5.5    | 17.5   | 147.8  | 171.7  | 227.8  | 221.4  | 83.6   |
| Bypass                      | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 90.5   | 52.8   | 1.5    |
| Maximum generation          | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 23.586 | 24.047 | 25.596 | 25.139 | 24.309 | 20.003 | 14.333 |
| Actual generation           | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.576  | 1.893  | 16.285 | 19.091 | 24.309 | 20.003 | 5.865  |
| Percent max generation      |     | 0.     | 0.     | 0.     | 0.     | 0.     | 2.     | 8.     | 64.    | 76.    | 100.   | 100.   | 41.    |
| Average kwh/af              |     | 0.     | 0.     | 0.     | 0.     | 0.     | 105.   | 108.   | 110.   | 111.   | 107.   | 90.    | 70.    |
| <b>Guernsey Power Plant</b> |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release             | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 53.6   | 51.8   | 53.6   | 53.6   | 55.8   |
| Bypass                      | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4    | 97.6   | 119.0  | 260.7  | 218.3  | 56.9   |
| Maximum generation          | gwh | 2.282  | 0.212  | 1.330  | 1.678  | 1.750  | 3.539  | 3.584  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Actual generation           | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 0.647  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Percent max generation      |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 18.    | 100.   | 100.   | 100.   | 100.   | 100.   |
| Average kwh/af              |     | 0.     | 0.     | 0.     | 0.     | 0.     | 0.     | 68.    | 71.    | 71.    | 71.    | 71.    | 61.    |

**Table 17** Reasonable Maximum Operating Plan for Water Year 2019

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 15:50

Based on Reasonable maximum April - July Inflow: Seminoe 1353.1 kaf, Sweetwater 122.5 kaf, Glendo 328.5 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

HYDROLOGY OPERATIONS

| Seminoe Reservoir Operations    |     | Initial Content 672.8 Kaf |        |        |        |        |        | Operating Limits: Max 1017.2 Kaf, 6357.00 Ft.<br>Min 31.7 Kaf, 6239.02 Ft. |        |        |        |        |        |
|---------------------------------|-----|---------------------------|--------|--------|--------|--------|--------|--|--------|--------|--------|--------|--------|
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 37.5                      | 34.8   | 29.0   | 27.1   | 29.7   | 62.6   | 157.8  | 389.9  | 582.8  | 222.6  | 62.1   | 37.1   |
| Total Inflow                    | cfs | 610.                      | 585.   | 472.   | 441.   | 535.   | 1018.  | 2652.  | 6341.  | 9794.  | 3620.  | 1010.  | 623.   |
| Turbine Release                 | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 187.1  | 192.8  | 191.2  | 159.6  | 64.1   | 48.7   |
| Jetflow Release                 | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 50.9   | 114.6  | 162.1  | 0.0    | 0.0    | 0.0    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 238.0  | 307.4  | 353.3  | 159.6  | 64.1   | 48.7   |
| Total Release                   | cfs | 530.                      | 529.   | 530.   | 530.   | 529.   | 2000.  | 4000.  | 4999.  | 5937.  | 2596.  | 1042.  | 818.   |
| Evaporation                     | kaf | 4.1                       | 2.2    | 1.2    | 1.2    | 1.2    | 2.4    | 4.1  | 4.0    | 7.7    | 9.9    | 8.7    | 6.3    |
| End-month content               | kaf | 674.3                     | 677.9  | 673.8  | 667.6  | 667.3  | 605.3  | 521.3  | 596.4  | 819.3* | 873.0* | 863.0* | 845.8* |
| End-month elevation             | ft  | 6337.2                    | 6337.5 | 6337.2 | 6336.8 | 6336.8 | 6332.3 | 6325.6   | 6331.6 | 6346.4 | 6349.5 | 6348.9 | 6347.9 |
| Kortes Reservoir Operations     |     | Initial Content 4.7 Kaf   |        |        |        |        |        | Operating Limits: Max 4.7 Kaf, 6141.53 Ft.<br>Min 1.7 Kaf, 6092.73 Ft.     |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 238.0  | 307.4  | 353.3  | 159.6  | 64.1   | 48.7   |
| Total Inflow                    | cfs | 530.                      | 529.   | 530.   | 530.   | 529.   | 2000.  | 4000.  | 4999.  | 5937.  | 2596.  | 1042.  | 818.   |
| Turbine Release                 | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 87.3   | 140.1  | 169.1  | 163.6  | 159.6  | 64.1   | 48.7   |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 35.7   | 97.9   | 138.3  | 189.7  | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 238.0  | 307.4  | 353.3  | 159.6  | 64.1   | 48.7   |
| Total Release                   | cfs | 530.                      | 529.   | 530.   | 530.   | 529.   | 2000.  | 4000.  | 4999.  | 5937.  | 2596.  | 1042.  | 818.   |
| Pathfinder Reservoir Operations |     | Initial Content 591.7 Kaf |        |        |        |        |        | Operating Limits: Max 1095.0 Kaf, 5853.56 Ft.<br>Min 31.4 Kaf, 5746.00 Ft. |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Sweetwater Inflow               | kaf | 3.4                       | 3.6    | 2.7    | 2.5    | 2.7    | 6.4    | 19.1   | 45.3   | 44.8   | 13.3   | 1.8    | 3.0    |
| Kortes-Path Gain                | kaf | 4.5                       | 2.1    | 2.1    | 4.5    | 6.1    | 8.6    | 11.4   | 16.4   | 11.0   | 8.7    | 6.9    | 6.9    |
| Inflow from Kortes              | kaf | 32.6                      | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 238.0  | 307.4  | 353.3  | 159.6  | 64.1   | 48.7   |
| Total Inflow                    | kaf | 40.5                      | 37.2   | 37.4   | 39.6   | 38.2   | 138.0  | 268.5  | 369.1  | 409.1  | 181.6  | 72.8   | 58.6   |
| Total Inflow                    | cfs | 659.                      | 625.   | 608.   | 644.   | 688.   | 2244.  | 4512.  | 6003.  | 6875.  | 2953.  | 1184.  | 985.   |
| Turbine Release                 | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 23.8   | 75.2   | 163.6  | 169.1  | 163.6  | 169.1  | 169.1  | 101.7  |
| Jetflow Release                 | kaf | 7.9                       | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 16.1   | 25.9   | 113.8  | 35.7   | 20.1   | 4.5    |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Release                   | kaf | 7.9                       | 30.1   | 30.9   | 30.9   | 28.0   | 79.8   | 179.7  | 195.0  | 277.4  | 204.8  | 189.2  | 106.2  |
| Total Release                   | cfs | 128.                      | 506.   | 503.   | 503.   | 504.   | 1298.  | 3020.  | 3171.  | 4662.  | 3331.  | 3077.  | 1785.  |
| Evaporation                     | kaf | 4.2                       | 2.3    | 1.3    | 1.3    | 1.3    | 2.8    | 5.7  | 7.8    | 12.9   | 14.8   | 12.4   | 8.9    |
| End-month content               | kaf | 620.1                     | 624.9  | 630.1  | 637.5  | 646.4  | 701.8  | 784.9  | 951.2  | 1070.0 | 1032.0 | 903.2  | 846.7  |
| End-month elevation             | ft  | 5828.8                    | 5829.1 | 5829.5 | 5829.9 | 5830.5 | 5833.9 | 5838.6   | 5847.1 | 5852.5 | 5850.8 | 5844.8 | 5841.9 |
| Alcova Reservoir Operations     |     | Initial Content 180.0 Kaf |        |        |        |        |        | Operating Limits: Max 184.4 Kaf, 5500.00 Ft.<br>Min 145.3 Kaf, 5483.12 Ft. |        |        |        |        |        |
|                                 |     | Oct                       | Nov    | Dec    | Jan    | Feb    | Mar    | Apr  | May    | Jun    | Jul    | Aug    | Sep    |
| Total Inflow                    | kaf | 7.9                       | 30.1   | 30.9   | 30.9   | 28.0   | 79.8   | 179.7  | 195.0  | 277.4  | 204.8  | 189.2  | 106.2  |
| Total Inflow                    | cfs | 128.                      | 506.   | 503.   | 503.   | 504.   | 1298.  | 3020.  | 3171.  | 4662.  | 3331.  | 3077.  | 1785.  |
| Turbine Release                 | kaf | 31.3                      | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.4  | 184.5  | 190.4  | 184.9  | 172.3  | 95.8   |
| Spillway Release                | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 0.0    | 72.3   | 0.0    | 0.0    | 0.0    |
| Casper Canal Release            | kaf | 0.0                       | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0  | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Total Release                   | kaf | 31.3                      | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.4  | 194.0  | 276.0  | 203.2  | 187.8  | 105.1  |
| Total Release                   | cfs | 509.                      | 501.   | 499.   | 499.   | 501.   | 1291.  | 2612.  | 3155.  | 4638.  | 3305.  | 3054.  | 1766.  |
| Evaporation                     | kaf | 0.7                       | 0.3    | 0.2    | 0.2    | 0.2    | 0.4    | 0.8  | 1.0    | 1.4    | 1.6    | 1.4    | 1.1    |
| End-month content               | kaf | 155.9*                    | 155.9* | 155.9* | 155.9* | 155.9* | 155.9* | 179.4*   | 179.4* | 179.4* | 179.4* | 179.4* | 179.4* |
| End-month elevation             | ft  | 5487.9                    | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5487.9 | 5498.0   | 5498.0 | 5498.0 | 5498.0 | 5498.0 | 5498.0 |

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 15:50

Based on Reasonable maximum April - July Inflow: Seminoe 1353.1 kaf, Sweetwater 122.5 kaf, Glendo 328.5 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| Gray Reef Reservoir Operations |     | Initial Content |        |        |        |        |        | 1.3 Kaf   |        |        | Operating Limits: Max |        |        | 1.8 Kaf, 5332.00 Ft.   |  |  |
|--------------------------------|-----|-----------------|--------|--------|--------|--------|--------|-----------|--------|--------|-----------------------|--------|--------|------------------------|--|--|
|                                |     |                 |        |        |        |        |        | Min       |        |        | 0.0 Kaf, 5306.00 Ft.  |        |        |                        |  |  |
|                                |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    |                        |  |  |
| Total Inflow                   | kaf | 31.3            | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.4     | 184.5  | 262.7  | 184.9                 | 172.3  | 95.8   |                        |  |  |
| Total Inflow                   | cfs | 509.            | 501.   | 499.   | 499.   | 501.   | 1291.  | 2612.     | 3001.  | 4415.  | 3007.                 | 2802.  | 1610.  |                        |  |  |
| Total Release                  | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.3     | 184.4  | 262.6  | 184.8                 | 172.2  | 95.7   |                        |  |  |
| Total Release                  | cfs | 499.            | 501.   | 499.   | 499.   | 501.   | 1291.  | 2610.     | 2999.  | 4413.  | 3005.                 | 2801.  | 1608.  |                        |  |  |
| Glendo Reservoir Operations    |     | Initial Content |        |        |        |        |        | 158.0 Kaf |        |        | Operating Limits: Max |        |        | 492.0 Kaf, 4635.00 Ft. |  |  |
|                                |     |                 |        |        |        |        |        | Min       |        |        | 63.2 Kaf, 4573.94 Ft. |        |        |                        |  |  |
|                                |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    |                        |  |  |
| Alcova-Glendo Gain             | kaf | 16.7            | 14.6   | 6.3    | 14.0   | 13.4   | 19.2   | 61.9      | 189.0  | 68.6   | 9.0                   | 8.3    | 14.6   |                        |  |  |
| Infl from Gray Reef            | kaf | 30.7            | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.3     | 184.4  | 262.6  | 184.8                 | 172.2  | 95.7   |                        |  |  |
| Total Inflow                   | kaf | 47.4            | 44.4   | 37.0   | 44.7   | 41.2   | 98.6   | 217.2     | 373.4  | 331.2  | 193.8                 | 180.5  | 110.3  |                        |  |  |
| Total Inflow                   | cfs | 771.            | 746.   | 602.   | 727.   | 742.   | 1604.  | 3650.     | 6073.  | 5566.  | 3152.                 | 2936.  | 1854.  |                        |  |  |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 94.7   | 208.8     | 231.8  | 230.4  | 226.6                 | 220.9  | 137.8  |                        |  |  |
| 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    |                        |  |  |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0       | 0.0    | 0.0    | 0.0                   | 0.0    | 0.0    |                        |  |  |
| Irrigation Release             | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.1    | 0.0    | 0.0       | 14.1   | 88.9   | 189.1                 | 60.7   | 0.0    |                        |  |  |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.6    | 96.2   | 210.3     | 247.4  | 320.8  | 417.2                 | 283.1  | 139.3  |                        |  |  |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 29.    | 1565.  | 3534.     | 4024.  | 5391.  | 6785.                 | 4604.  | 2341.  |                        |  |  |
| Evaporation                    | kaf | 1.4             | 1.0    | 0.8    | 0.7    | 0.8    | 1.8    | 2.9       | 4.5    | 6.9    | 6.5                   | 4.0    | 2.2    |                        |  |  |
| End-month content              | kaf | 202.5           | 244.4  | 279.1  | 321.6  | 360.4  | 361.0* | 365.0*    | 486.5* | 490.0* | 259.7*                | 151.2* | 120.0* |                        |  |  |
| End-month elevation            | ft  | 4603.2          | 4609.0 | 4613.5 | 4618.4 | 4622.7 | 4622.7 | 4623.1    | 4634.5 | 4634.8 | 4611.0                | 4594.8 | 4588.6 |                        |  |  |
| Guernsey Reservoir Operations  |     | Initial Content |        |        |        |        |        | 5.8 Kaf   |        |        | Operating Limits: Max |        |        | 28.0 Kaf, 4411.92 Ft.  |  |  |
|                                |     |                 |        |        |        |        |        | Min       |        |        | 0.0 Kaf, 4370.00 Ft.  |        |        |                        |  |  |
|                                |     | Oct             | Nov    | Dec    | Jan    | Feb    | Mar    | Apr       | May    | Jun    | Jul                   | Aug    | Sep    |                        |  |  |
| Glendo-Guerns Gain             | kaf | 3.3             | 1.8    | 1.6    | 1.6    | 1.2    | 1.0    | 7.5       | 34.9   | 22.2   | 6.5                   | -0.2   | 4.2    |                        |  |  |
| Inflow from Glendo             | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.6    | 96.2   | 210.3     | 247.4  | 320.8  | 417.2                 | 283.1  | 139.3  |                        |  |  |
| Total Inflow                   | kaf | 4.8             | 3.3    | 3.1    | 3.1    | 2.8    | 97.2   | 217.8     | 282.3  | 343.0  | 423.7                 | 282.9  | 143.5  |                        |  |  |
| Total Inflow                   | cfs | 78.             | 55.    | 50.    | 50.    | 50.    | 1581.  | 3660.     | 4591.  | 5764.  | 6891.                 | 4601.  | 2412.  |                        |  |  |
| Turbine Release                | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 56.9   | 52.6      | 53.6   | 51.8   | 53.6                  | 53.6   | 55.8   |                        |  |  |
| Seepage                        | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4       | 1.2    | 3.0    | 3.1                   | 2.5    | 0.3    |                        |  |  |
| Spillway Release               | kaf | 0.0             | 0.0    | 0.0    | 0.0    | 0.0    | 34.8   | 155.5     | 226.7  | 287.1  | 365.8                 | 225.8  | 112.9  |                        |  |  |
| Total Release                  | kaf | 1.5             | 1.5    | 1.5    | 1.5    | 1.2    | 92.7   | 208.5     | 281.5  | 341.9  | 422.5                 | 281.9  | 169.0  |                        |  |  |
| Total Release                  | cfs | 24.             | 25.    | 24.    | 24.    | 22.    | 1508.  | 3504.     | 4578.  | 5746.  | 6871.                 | 4585.  | 2840.  |                        |  |  |
| Evaporation                    | kaf | 0.3             | 0.2    | 0.1    | 0.1    | 0.1    | 0.3    | 0.4       | 0.8    | 1.1    | 1.2                   | 1.0    | 0.5    |                        |  |  |
| End-month content              | kaf | 8.8*            | 10.4*  | 11.9*  | 13.4*  | 14.9*  | 19.1*  | 28.0*     | 28.0*  | 28.0*  | 28.0*                 | 28.0*  | 2.0*   |                        |  |  |
| End-month elevation            | ft  | 4399.1          | 4400.7 | 4402.0 | 4403.1 | 4404.2 | 4407.0 | 4411.9    | 4411.9 | 4411.9 | 4411.9                | 4411.9 | 4388.0 |                        |  |  |
| Physical EOM Cont              | kaf | 1668.1          | 1720.0 | 1757.3 | 1802.5 | 1851.4 | 1849.6 | 1885.1    | 2248.0 | 2593.2 | 2378.6                | 2131.3 | 2000.4 |                        |  |  |

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 15:50

Based on Reasonable maximum April - July Inflow: Seminoe 1353.1 kaf, Sweetwater 122.5 kaf, Glendo 328.5 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

OWNERSHIP OPERATIONS

| North Platte Pathfinder |     | Initial Ownership 449.0 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |        |        |        |        |        |        |
|-------------------------|-----|--|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Net Accrual             | kaf | 42.4   | 38.7   | 32.7   | 33.0  | 37.3  | 74.9  | 182.9  | 179.1  | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 3.0  | 1.8    | 1.1    | 1.1   | 1.2   | 2.7   | 5.4    | 8.6    | 14.4   | 13.9   | 12.1   | 7.5    |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 188.4  | 99.2   |
| End-month Ownership     | kaf | 491.4  | 530.1  | 562.8  | 595.8 | 633.1 | 708.0 | 890.9  | 1070.0 | 1055.6 | 1041.7 | 841.2  | 734.5  |
| North Platte Guernsey   |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |        |        |        |        |        |        |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Net Accrual             | kaf | 0.0  | 0.0    | 6.4    | 14.1  | 13.4  | 11.7  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation/Seepage     | kaf | 0.0  | 0.0    | 1.5    | 1.5   | 1.2   | 0.1   | 0.3    | 0.5    | 0.6    | 0.6    | 0.1    | 0.0    |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 33.9   | 9.6    | 0.0    |
| End-month Ownership     | kaf | 0.0  | 0.0    | 6.4    | 20.5  | 33.9  | 45.6  | 45.3   | 44.8   | 44.2   | 9.7    | 0.0    | 0.0    |
| Inland Lakes            |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |        |        |        |        |        |        |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Net Accrual             | kaf | 18.5   | 14.8   | 0.0    | 0.0   | 0.0   | 0.0   | 12.7   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation/Seepage     | kaf | 1.5  | 1.6    | 0.1    | 0.1   | 0.1   | 0.1   | 0.3    | 0.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| Trnsfr fm Ownership     | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 10.0   | 35.3   | 0.0    | 0.0    | 0.0    | 0.0    |
| End-month Ownership     | kaf | 18.5   | 33.3   | 33.2   | 33.1  | 33.0  | 32.9  | 35.6   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Kendrick                |     | Initial Ownership 1013.3 Kaf, Accrued this water year: 0.0 Kaf |        |        |       |       |       |        |        |        |        |        |        |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Net Accrual             | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 215.8  | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 6.8  | 3.6    | 2.1    | 2.0   | 2.0   | 4.1   | 6.8    | 7.0    | 12.7   | 15.6   | 13.4   | 10.1   |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 18.3   | 15.5   | 9.3    |
| End-month Ownership     | kaf | 1006.5   | 1002.9 | 1000.8 | 998.8 | 996.8 | 992.7 | 985.9  | 1201.7 | 1189.0 | 1155.1 | 1126.2 | 1106.8 |
| Glendo Unit             |     | Initial Ownership 138.7 Kaf, Accrued this water year: 0.0 Kaf  |        |        |       |       |       |        |        |        |        |        |        |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Accrual                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 8.4   | 24.6   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 0.9  | 0.5    | 0.3    | 0.3   | 0.3   | 0.6   | 1.1    | 1.6    | 2.2    | 2.2    | 1.8    | 1.4    |
| Deliv fm Ownership      | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 6.0    | 5.0    | 4.0    |
| End-month Ownership     | kaf | 137.8  | 137.3  | 137.0  | 136.7 | 136.4 | 144.2 | 167.7  | 166.1  | 163.9  | 155.7  | 148.9  | 143.5  |
| Re-regulation           |     | Initial Ownership 0.0 Kaf, Accrued this water year: 0.0 Kaf    |        |        |       |       |       |        |        |        |        |        |        |
|                         |     | Oct  | Nov    | Dec    | Jan   | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Accrual                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 31.8   | 123.8  | 545.7  | 0.0    | 0.0    | 0.0    |
| Evaporation/Seepage     | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    | 1.6    | 0.0    | 0.0    |
| Release                 | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | 92.7  | 198.5  | 114.5  | 171.5  | 122.5  | 0.0    | 0.0    |
| End-month total         | kaf | 0.0  | 0.0    | 0.0    | 0.0   | 0.0   | -92.7 | -259.4 | -250.1 | 124.1  | 0.0    | 0.0    | 0.0    |

**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 15:50

Based on Reasonable maximum April - July Inflow: Seminoe 1353.1 kaf, Sweetwater 122.5 kaf, Glendo 328.5 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

| City of Cheyenne        |     | Initial Ownership 4.1 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
|-------------------------|-----|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| 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    |
| Evaporation             | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    | 0.1    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 4.0    | 1.6    | 0.5    | 0.0    | 0.0    |
| Ownership               | kaf | 4.8                        | 7.3    | 8.0    | 8.5    | 9.1    | 9.8    | 10.0   | 6.5    | 7.5    | 8.0    | 8.6    | 9.2    |
| Pacificorp              |     | Initial Ownership 2.0 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Ownership               | kaf | 2.0                        | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    |
| Other                   |     | Initial Ownership 7.2 Kaf, |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Inflow                  | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Evaporation             | kaf | 0.1                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.1    | 0.1    | 0.1    | 0.0    |
| Release                 | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.4    | 1.9    | 0.0    |
| Ownership               | kaf | 7.1                        | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.0    | 6.9    | 6.4    | 4.4    | 4.4    |
| IRRIGATION DELIVERY     |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| -----                   |     |                            |        |        |        |        |        |        |        |        |        |        |        |
| Kendrick (Casper Canal) |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Delivered               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 9.5    | 13.3   | 18.3   | 15.5   | 9.3    |
| Kendrick (River)        |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| Requested               | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| Guernsey Deliveries     |     | Oct                        | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
| North Platte Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 131.7  | 168.4  | 308.3  | 276.9  | 165.0  |
| Glendo Req              | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 2.0    | 6.0    | 5.0    | 4.0    |
| Inland Lakes Req        | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 10.0   | 35.3   | 0.0    | 0.0    | 0.0    | 0.0    |
| Total Requirement       | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 10.0   | 167.0  | 170.4  | 314.3  | 281.9  | 169.0  |
| Seepage                 | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 1.0    | 0.4    | 1.2    | 3.0    | 3.1    | 2.5    | 0.3    |
| Actual Release          | kaf | 1.5                        | 1.5    | 1.5    | 1.5    | 1.2    | 92.7   | 208.5  | 281.5  | 341.9  | 422.5  | 281.9  | 169.0  |
| Spill                   | kaf | 0.0                        | 0.0    | 0.0    | 0.0    | 0.0    | 91.7   | 198.5  | 114.5  | 171.5  | 108.2  | 0.0    | 0.0    |
| Ownership EOM Cont      | kaf | 1668.1                     | 1720.0 | 1757.3 | 1802.5 | 1851.4 | 1849.6 | 1885.1 | 2248.0 | 2593.2 | 2378.6 | 2131.3 | 2000.4 |



**Table 17 (Continued) Reasonable Maximum Operating Plan for Water Year 2019**

NPRAOP V1.1K 21-Mar-2003 Run: 4-Oct-2018 15:50

Based on Reasonable maximum April - July Inflow: Seminoe 1353.1 kaf, Sweetwater 122.5 kaf, Glendo 328.5 kaf

NORTH PLATTE RIVER OPERATING PLAN  
Year Beginning Oct 2018

POWER GENERATION

|                        |     | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Seminoe Power Plant    |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 32.6   | 31.5   | 32.6   | 32.6   | 29.4   | 123.0  | 187.1  | 192.8  | 191.2  | 159.6  | 64.1   | 48.7   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 50.9   | 114.6  | 162.1  | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 20.579 | 19.891 | 20.942 | 26.904 | 29.693 | 32.291 | 29.938 | 30.848 | 32.402 | 33.176 | 32.938 | 31.997 |
| Actual generation      | gwh | 5.445  | 5.270  | 5.453  | 5.444  | 4.910  | 20.295 | 29.938 | 30.848 | 32.402 | 28.090 | 11.303 | 8.571  |
| Percent max generation |     | 26.    | 26.    | 26.    | 20.    | 17.    | 63.    | 100.   | 100.   | 100.   | 85.    | 34.    | 27.    |
| Average kwh/af         |     | 167.   | 167.   | 167.   | 167.   | 167.   | 165.   | 160.   | 160.   | 169.   | 176.   | 176.   | 176.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Kortes Power Plant     |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 32.6   | 31.5   | 32.6   | 32.6   | 29.4   | 87.3   | 140.1  | 169.1  | 163.6  | 159.6  | 64.1   | 48.7   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 35.7   | 97.9   | 138.3  | 189.7  | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 29.085 | 24.407 | 19.402 | 22.515 | 16.254 | 15.016 | 24.097 | 29.085 | 28.139 | 29.085 | 29.085 | 28.139 |
| Actual generation      | gwh | 5.607  | 5.418  | 5.607  | 5.607  | 5.057  | 15.016 | 24.097 | 29.085 | 28.139 | 27.451 | 11.025 | 8.376  |
| Percent max generation |     | 19.    | 22.    | 29.    | 25.    | 31.    | 100.   | 100.   | 100.   | 100.   | 94.    | 38.    | 30.    |
| Average kwh/af         |     | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   | 172.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Fremont Canyon         |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 23.8   | 75.2   | 163.6  | 169.1  | 163.6  | 169.1  | 169.1  | 101.7  |
| Bypass                 | kaf | 7.9    | 30.1   | 30.9   | 30.9   | 4.2    | 4.6    | 16.1   | 25.9   | 113.8  | 35.7   | 20.1   | 4.5    |
| Maximum generation     | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 27.314 | 46.043 | 45.150 | 47.228 | 45.791 | 47.348 | 47.299 | 45.696 |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 6.436  | 20.476 | 45.150 | 47.228 | 45.791 | 47.348 | 47.299 | 28.407 |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 24.    | 44.    | 100.   | 100.   | 100.   | 100.   | 100.   | 62.    |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 270.   | 272.   | 276.   | 279.   | 280.   | 280.   | 280.   | 279.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Alcova Power Plant     |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 31.3   | 29.8   | 30.7   | 30.7   | 27.8   | 79.4   | 155.4  | 184.5  | 190.4  | 184.9  | 172.3  | 95.8   |
| Bypass                 | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 72.3   | 0.0    | 0.0    | 0.0    |
| Maximum generation     | gwh | 27.168 | 26.588 | 27.472 | 19.951 | 12.852 | 16.402 | 22.784 | 27.552 | 26.656 | 27.552 | 27.552 | 26.656 |
| Actual generation      | gwh | 4.321  | 4.053  | 4.175  | 4.175  | 3.781  | 10.798 | 21.445 | 25.830 | 26.656 | 25.886 | 24.122 | 13.412 |
| Percent max generation |     | 16.    | 15.    | 15.    | 21.    | 29.    | 66.    | 94.    | 94.    | 100.   | 94.    | 88.    | 50.    |
| Average kwh/af         |     | 138.   | 136.   | 136.   | 136.   | 136.   | 136.   | 138.   | 140.   | 140.   | 140.   | 140.   | 140.   |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Glendo Power Plant     |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 94.7   | 208.8  | 231.8  | 230.4  | 226.6  | 220.9  | 137.8  |
| Bypass                 | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.6    | 1.5    | 1.5    | 15.6   | 90.4   | 190.6  | 62.2   | 1.5    |
| Maximum generation     | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 23.589 | 22.884 | 25.446 | 26.405 | 23.983 | 18.705 | 14.151 |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 9.919  | 21.908 | 25.446 | 26.405 | 23.983 | 18.705 | 9.568  |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 0.     | 42.    | 96.    | 100.   | 100.   | 100.   | 100.   | 68.    |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 0.     | 105.   | 105.   | 110.   | 115.   | 106.   | 85.    | 69.    |
| -----                  |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Guernsey Power Plant   |     |        |        |        |        |        |        |        |        |        |        |        |        |
| Turbine Release        | kaf | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 56.9   | 52.6   | 53.6   | 51.8   | 53.6   | 53.6   | 55.8   |
| Bypass                 | kaf | 1.5    | 1.5    | 1.5    | 1.5    | 1.2    | 35.8   | 155.9  | 227.9  | 290.1  | 368.9  | 228.3  | 113.2  |
| Maximum generation     | gwh | 2.302  | 0.215  | 1.360  | 1.718  | 1.798  | 3.585  | 3.584  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Actual generation      | gwh | 0.000  | 0.000  | 0.000  | 0.000  | 0.000  | 3.585  | 3.584  | 3.795  | 3.667  | 3.795  | 3.795  | 3.404  |
| Percent max generation |     | 0.     | 0.     | 0.     | 0.     | 0.     | 100.   | 100.   | 100.   | 100.   | 100.   | 100.   | 100.   |
| Average kwh/af         |     | 0.     | 0.     | 0.     | 0.     | 0.     | 63.    | 68.    | 71.    | 71.    | 71.    | 71.    | 61.    |

## 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.

## **Glossary (continued)**

**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.

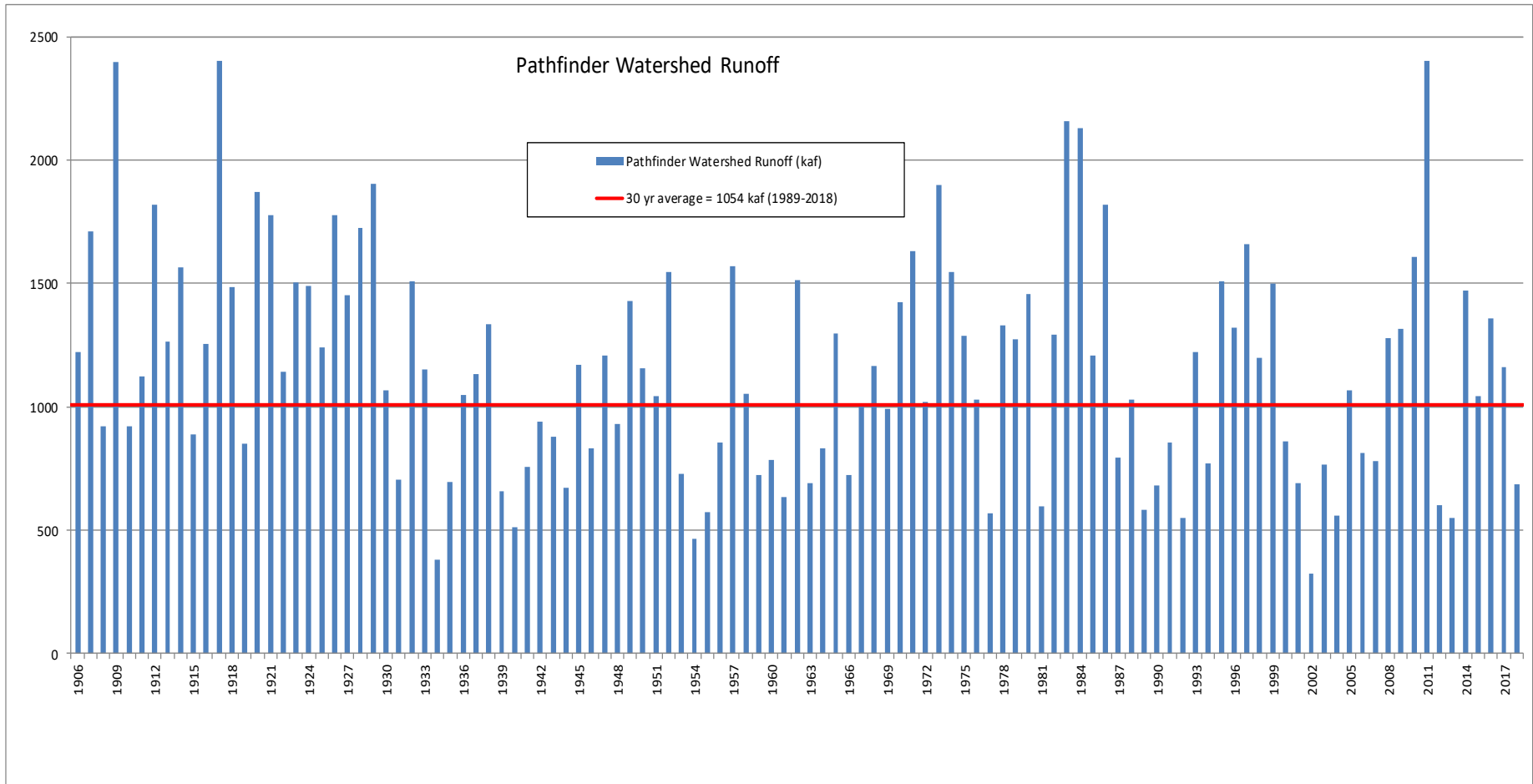
**Silt Run** - The name given to the practice of flushing silt from Guernsey Reservoir into the North Platte River downstream where the silt laden water is diverted by irrigators. The silt tends to settle in the slower moving water of canals and laterals helping to seal the wetted perimeter and reduce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

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



**Figure 20** Pathfinder Watershed Runoff 1906-2018

## Reservoir Data Definitions 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.

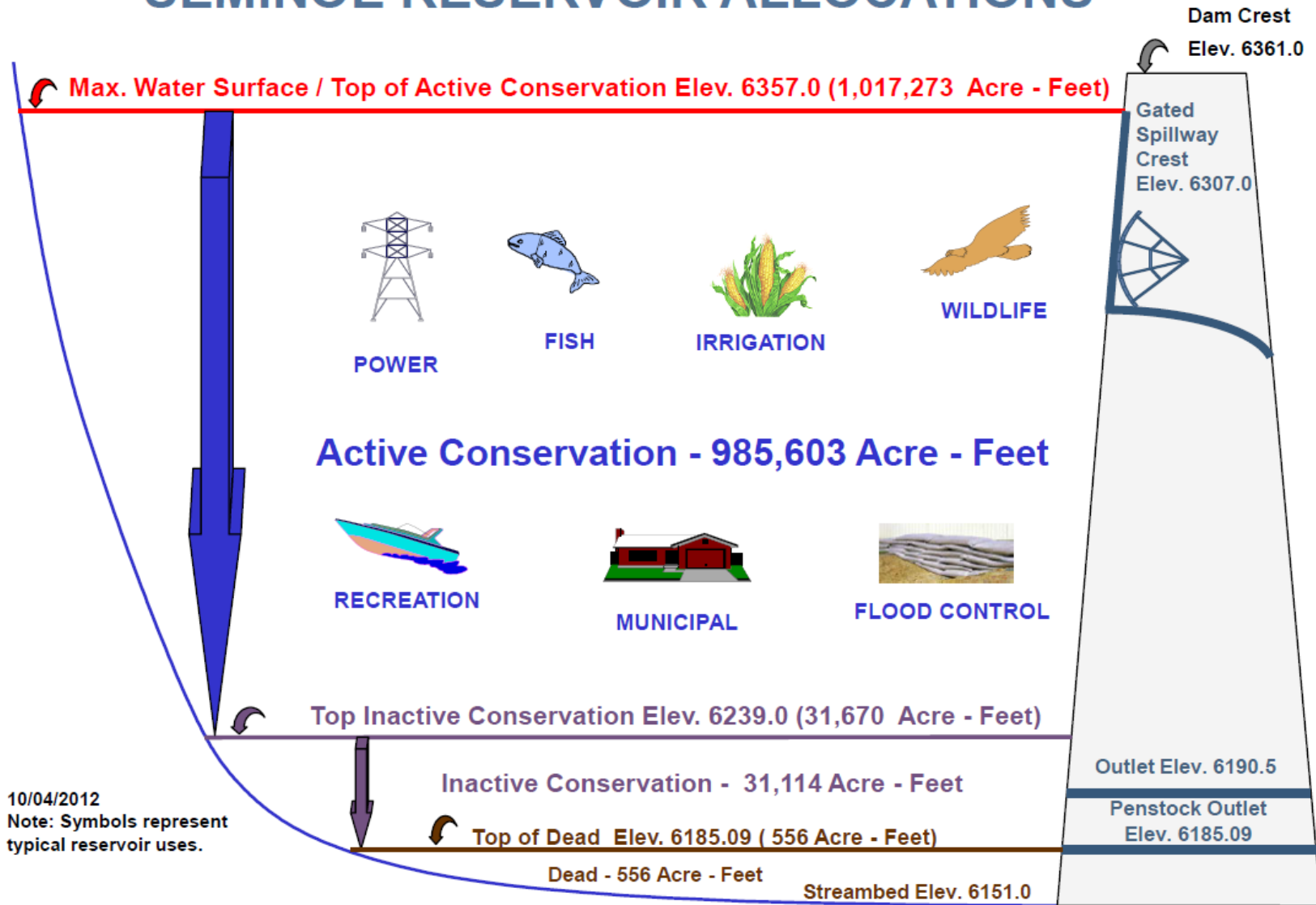
**Joint Use Capacity** - The reservoir capacity assigned to flood control purposes during certain periods of the year and to conservation purposes during other periods of the year.

**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.

# Reservoir Allocation Sheets

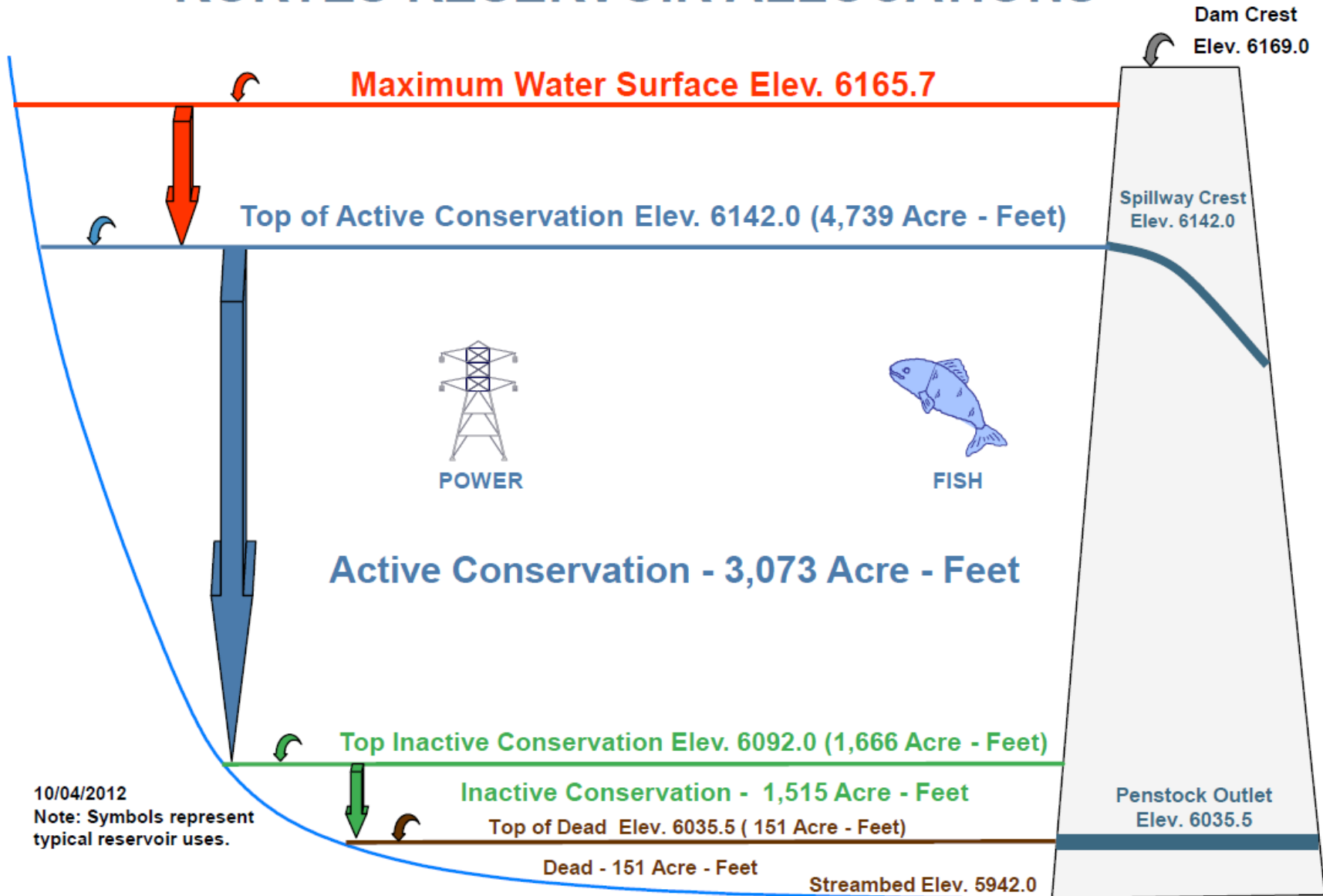
## SEMINOE RESERVOIR ALLOCATIONS



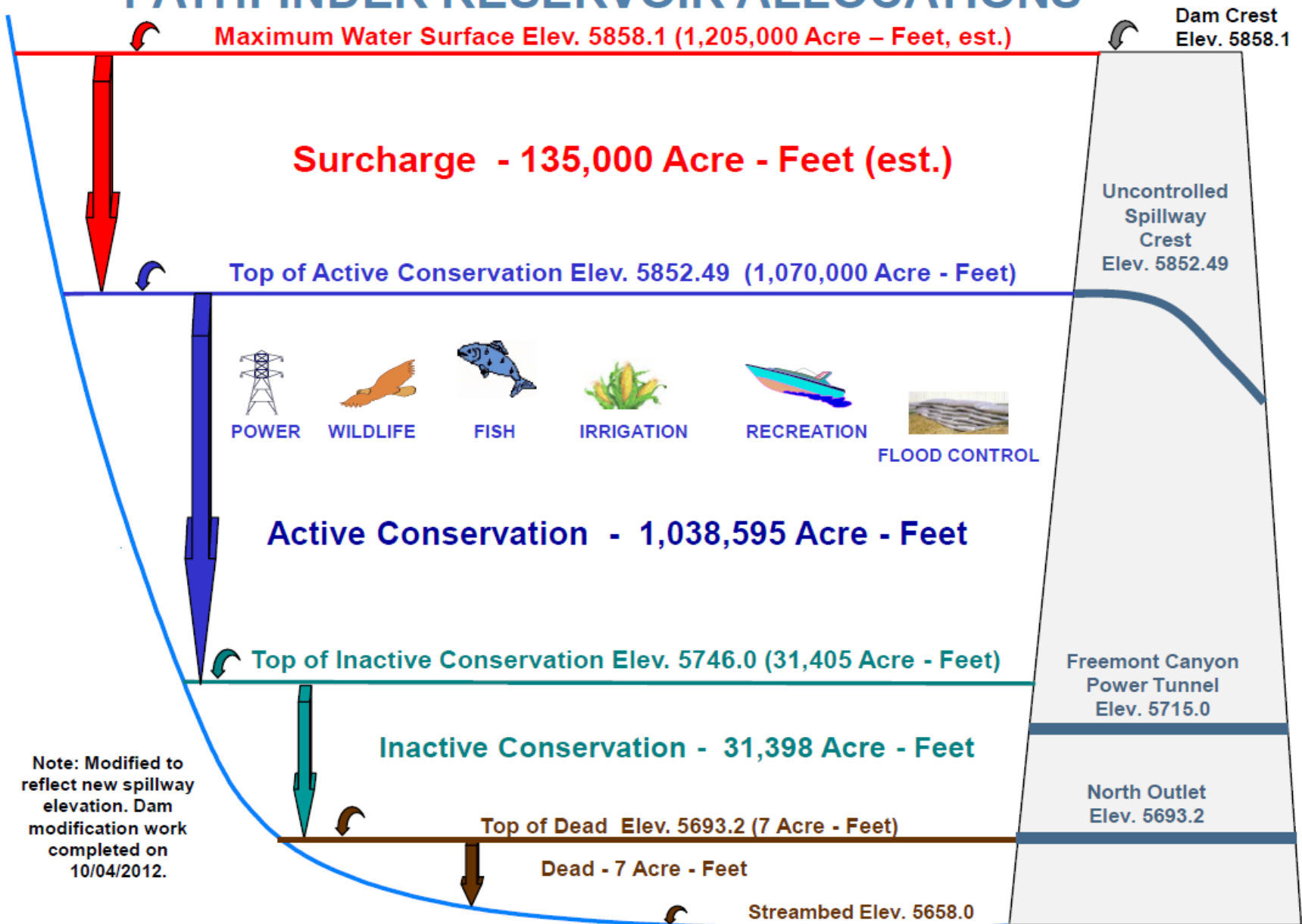
10/04/2012  
 Note: Symbols represent typical reservoir uses.



# KORTES RESERVOIR ALLOCATIONS

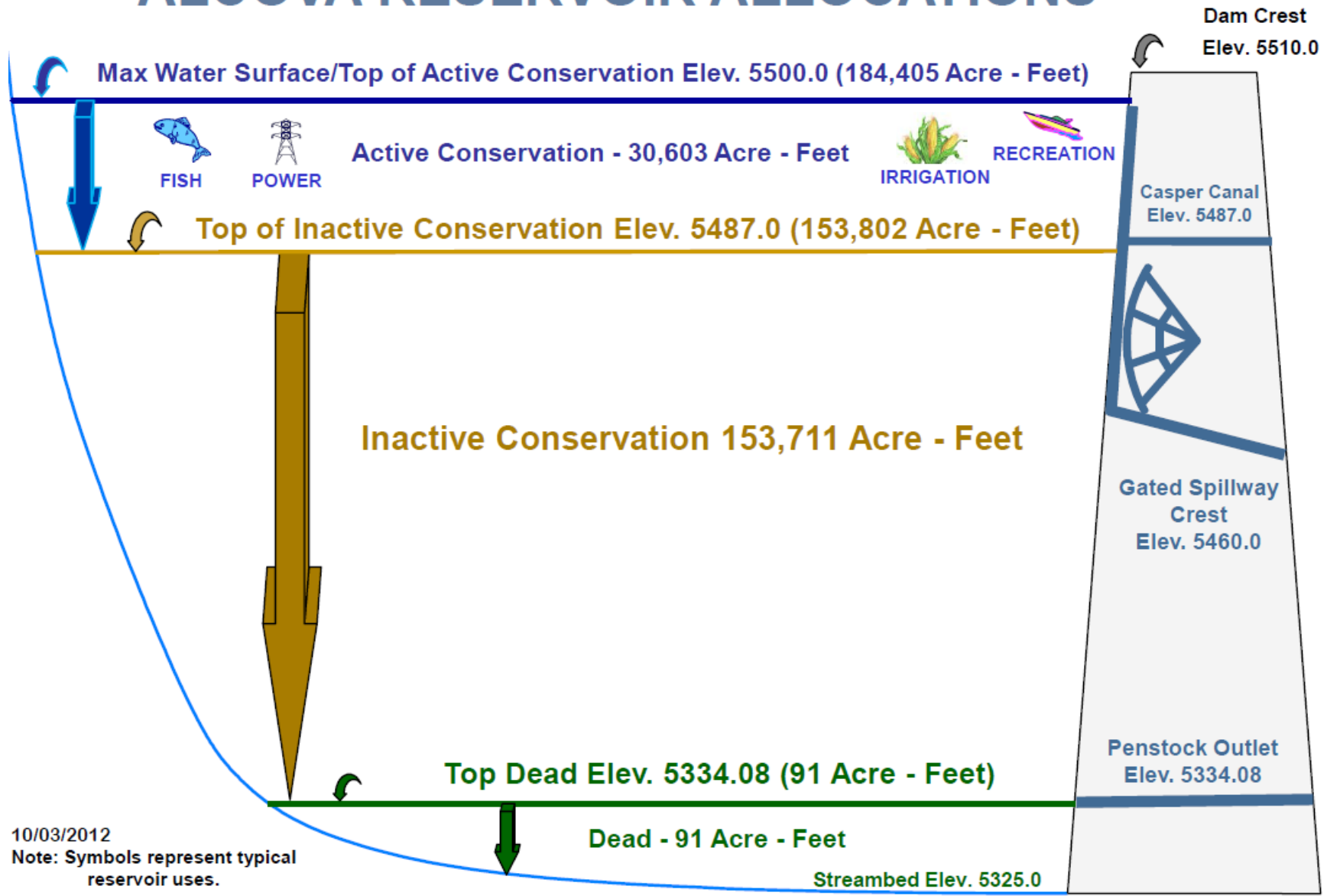


# PATHFINDER RESERVOIR ALLOCATIONS

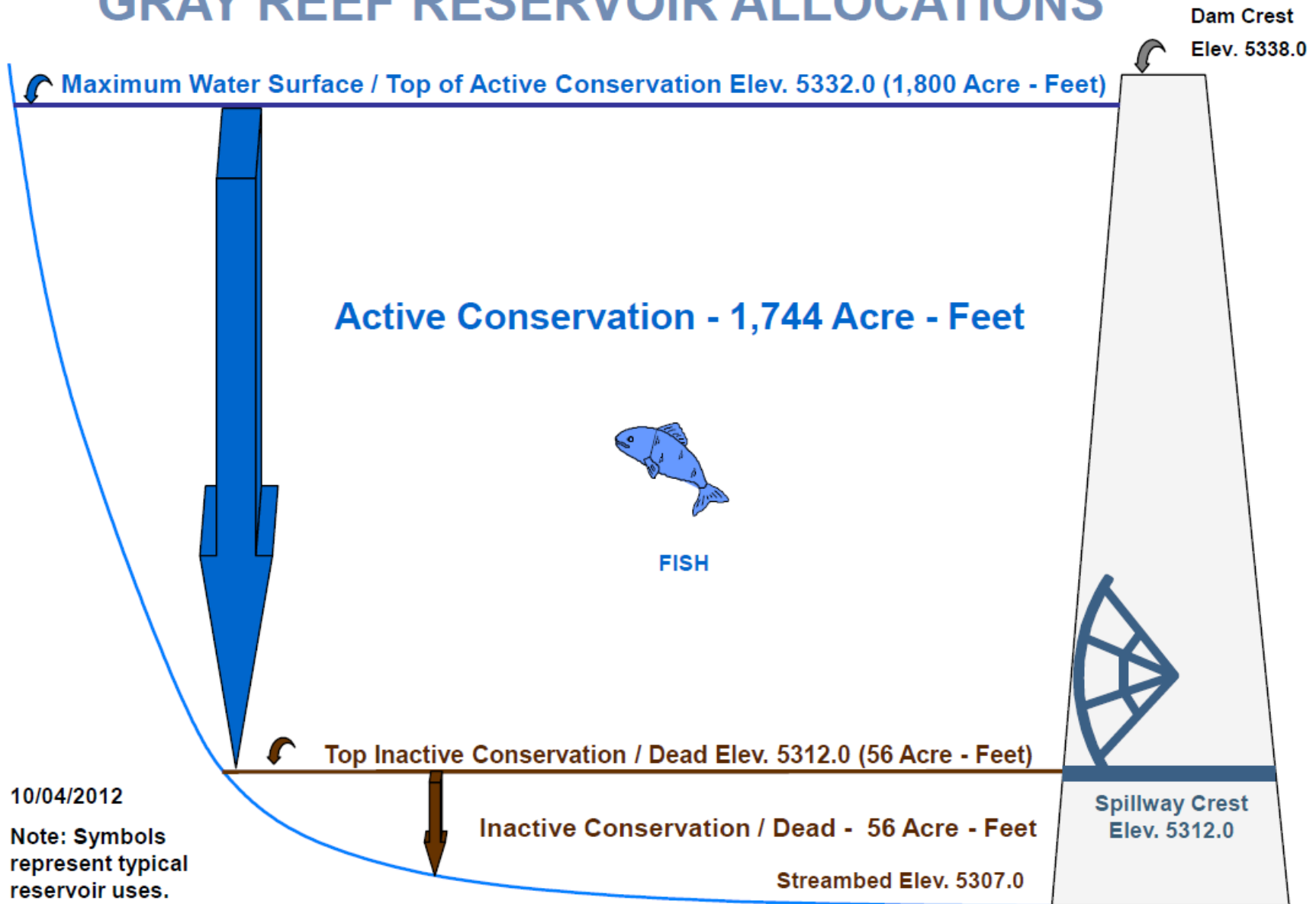


Note: Modified to reflect new spillway elevation. Dam modification work completed on 10/04/2012.

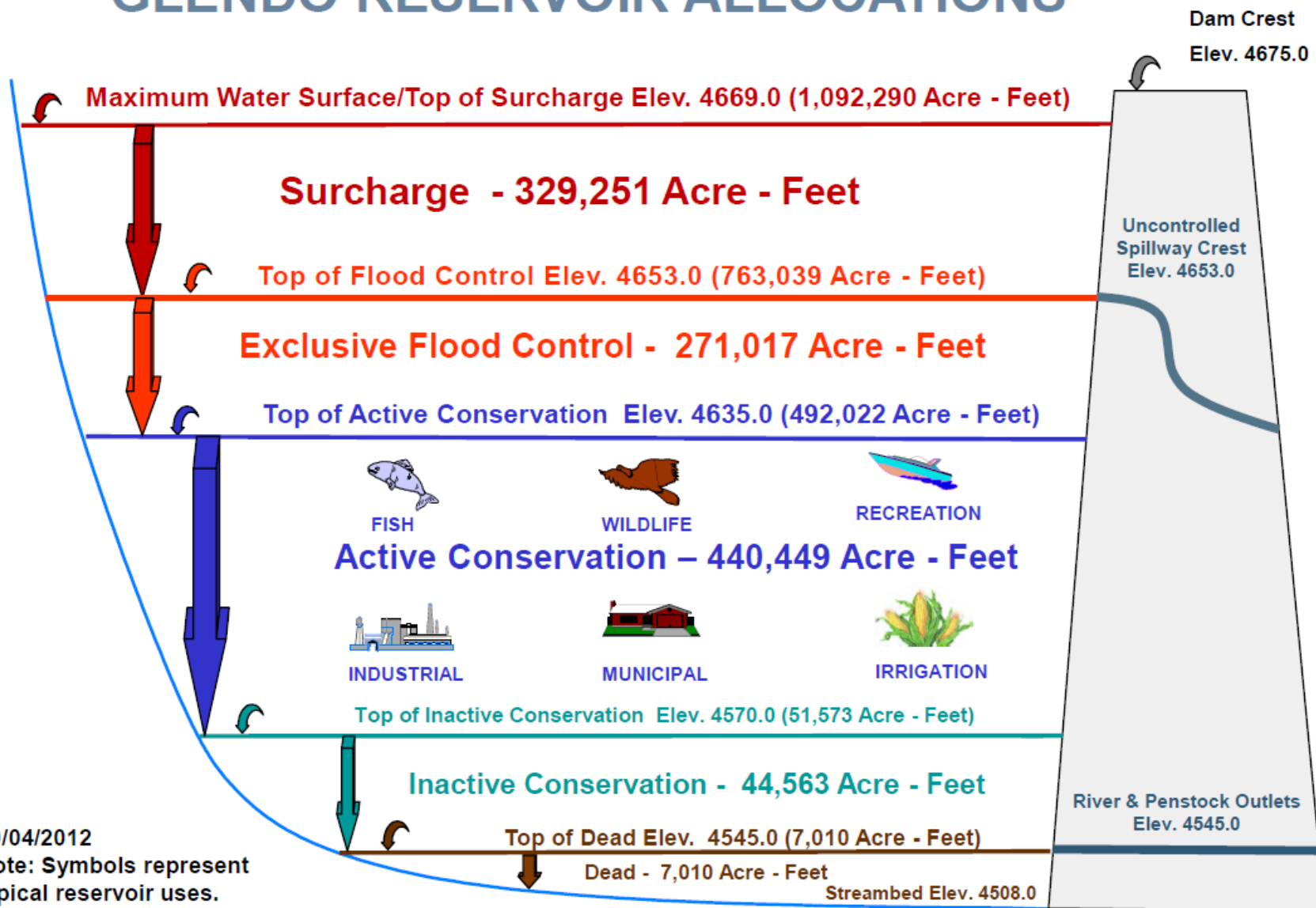
# ALCOVA RESERVOIR ALLOCATIONS



# GRAY REEF RESERVOIR ALLOCATIONS



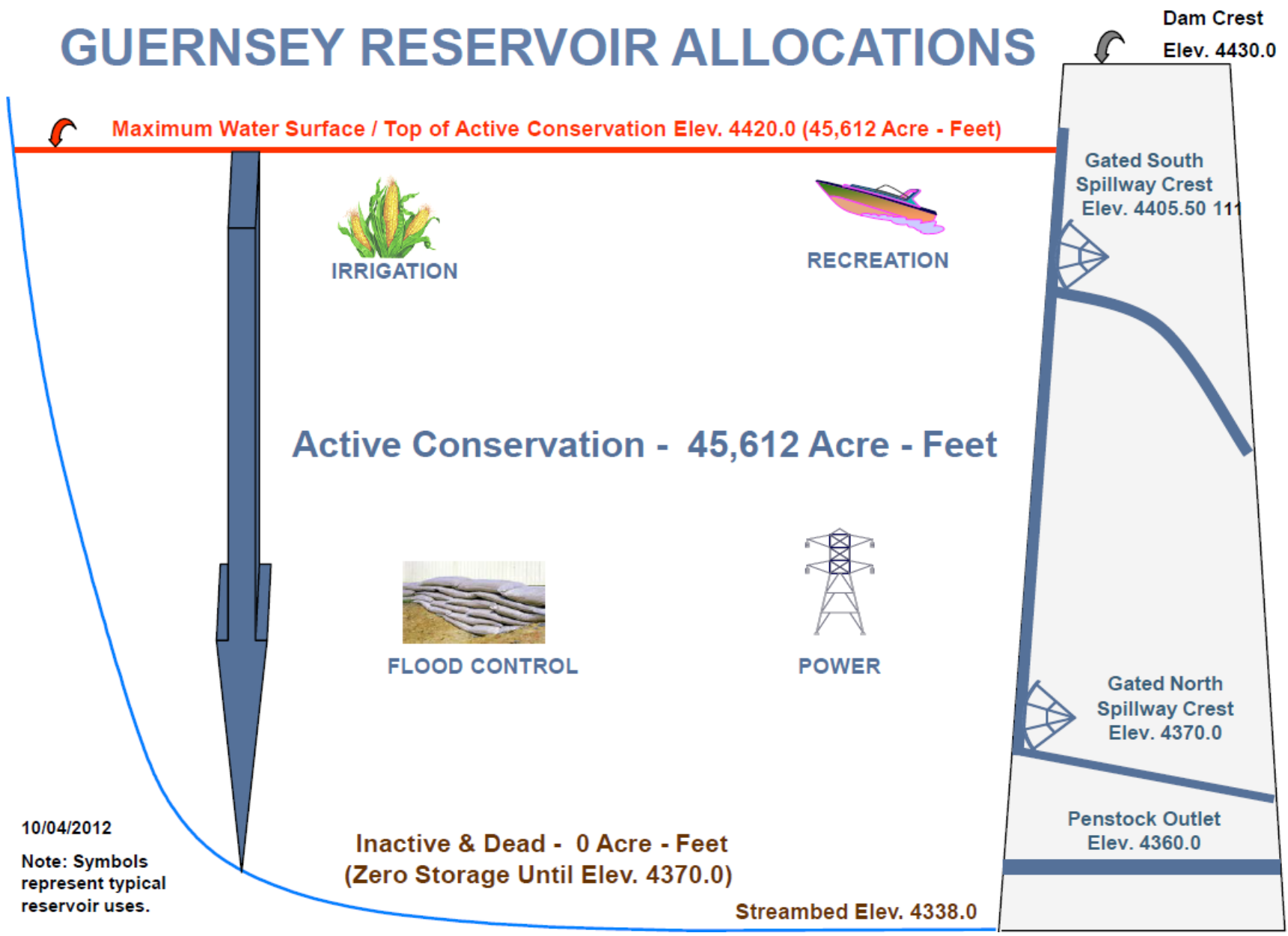
# GLENDO RESERVOIR ALLOCATIONS



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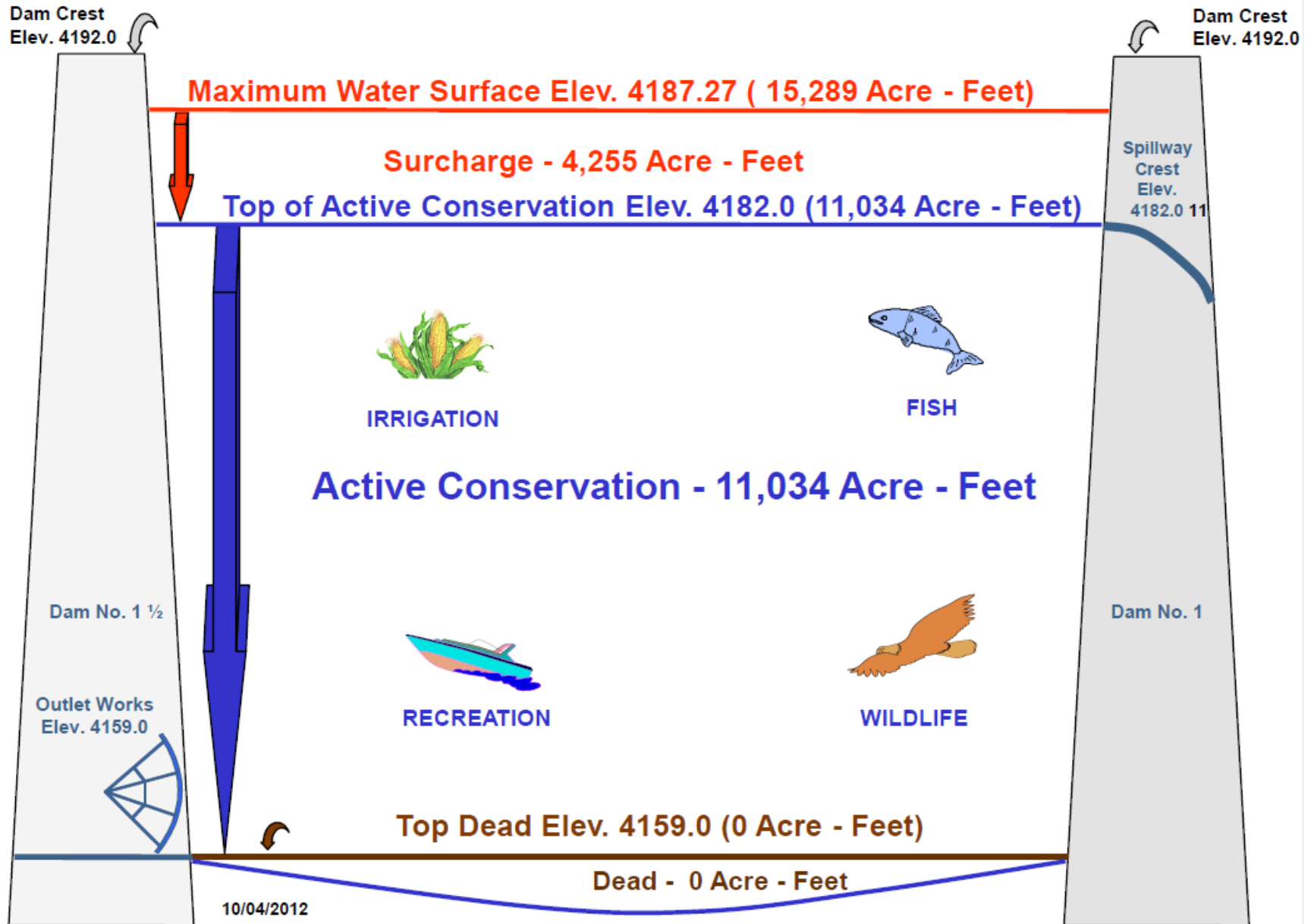
Note: Symbols represent typical reservoir uses.

# GUERNSEY RESERVOIR ALLOCATIONS



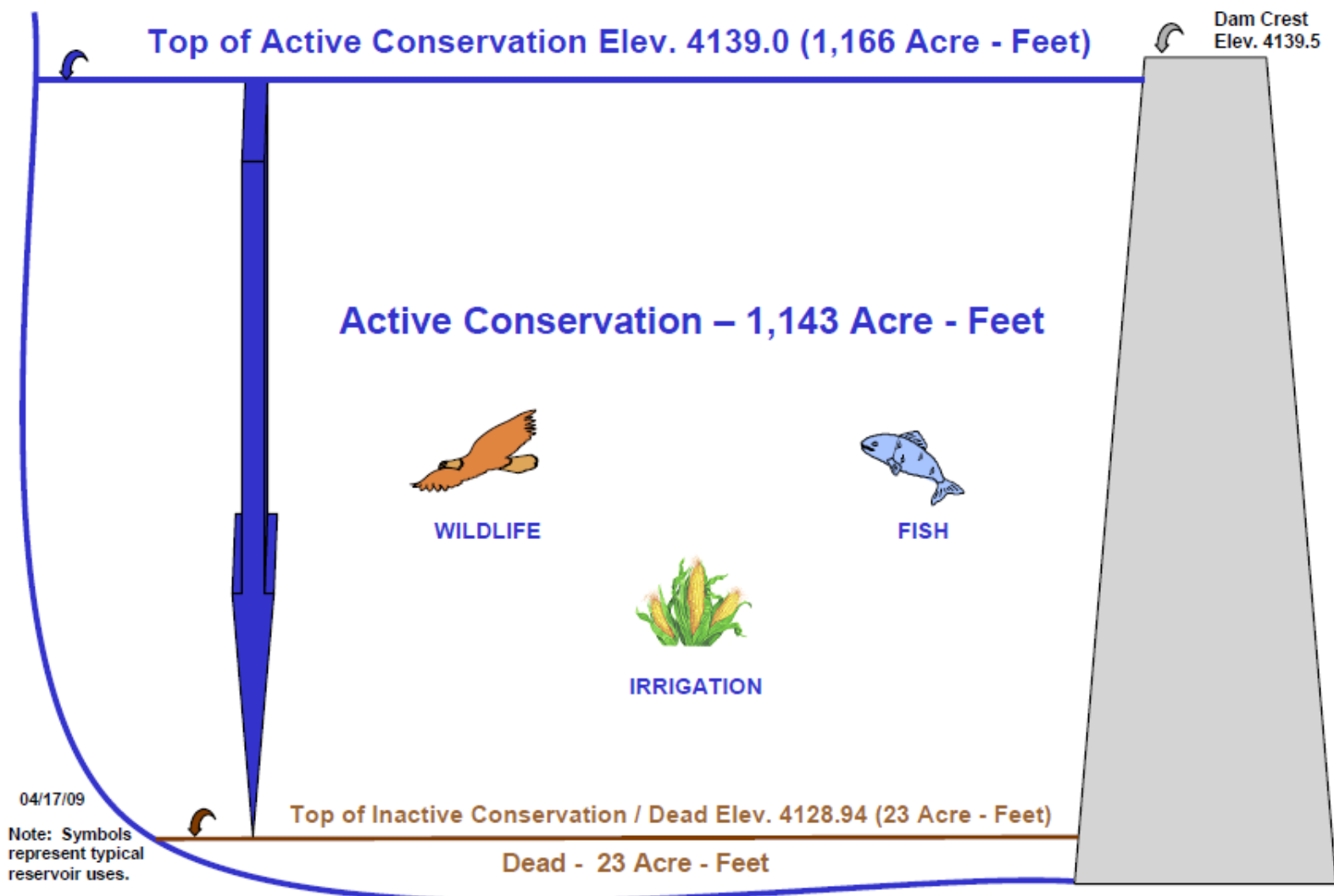
10/04/2012  
Note: Symbols represent typical reservoir uses.

# LAKE ALICE RESERVOIR ALLOCATIONS



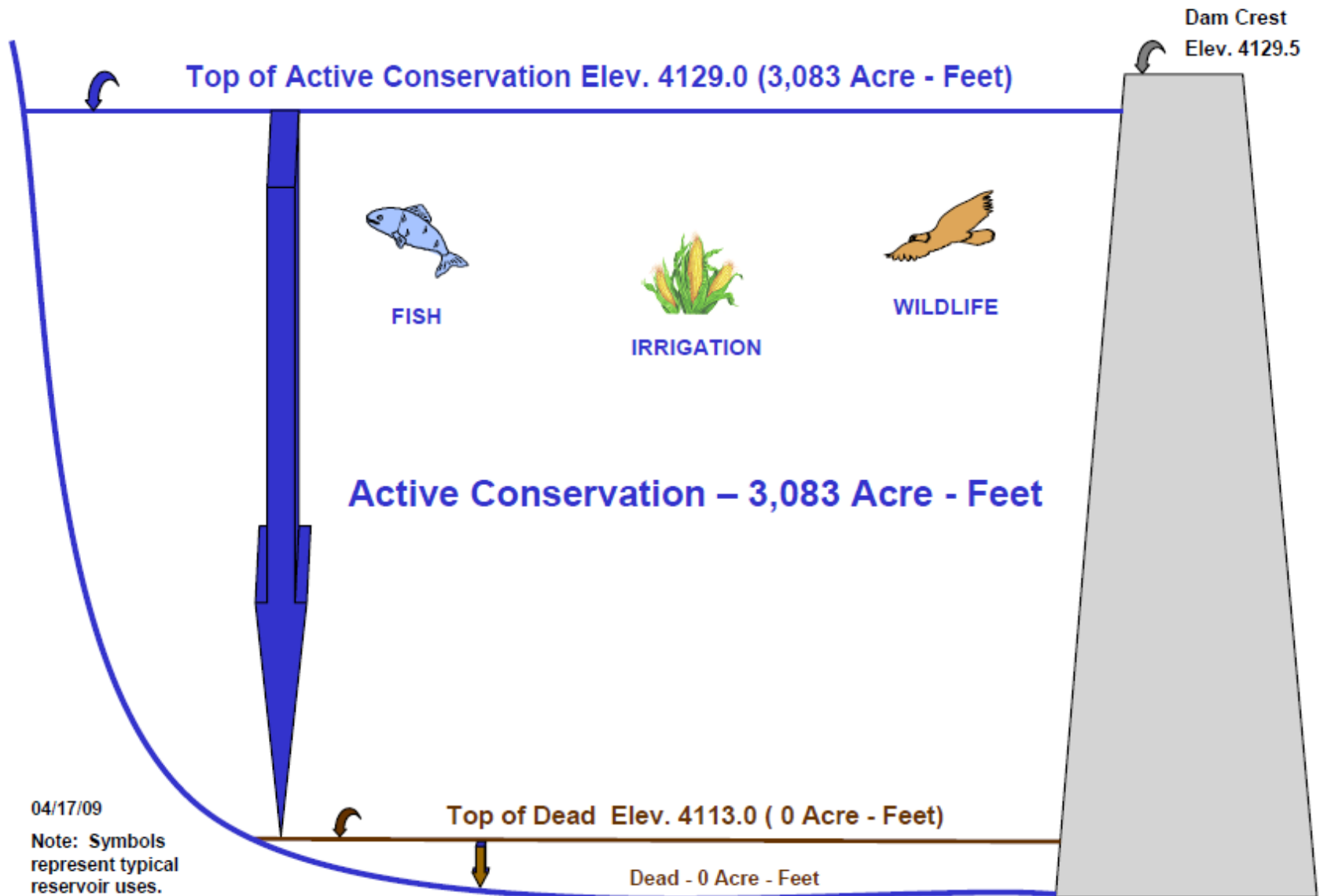
Note: Symbols represent typical reservoir uses.

# LITTLE LAKE ALICE RESERVOIR ALLOCATIONS





# WINTERS CREEK RESERVOIR ALLOCATIONS



# LAKE MINATARE RESERVOIR ALLOCATIONS

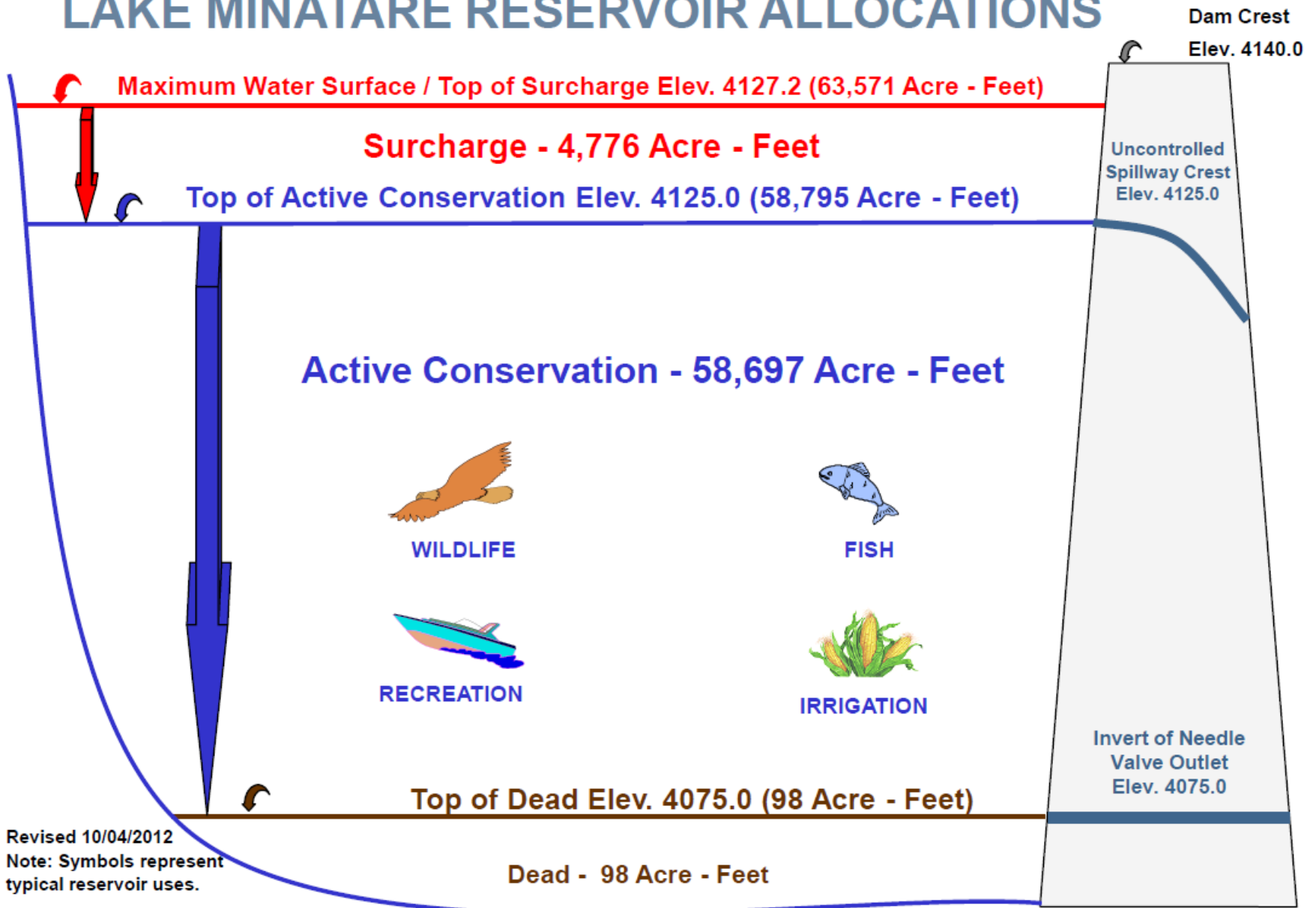


Figure 21 North Platte River Basin Map

