ENVIRONMENTAL ACCOUNT
2022 WATER YEAR ANNUAL OPERATING PLAN
Draft (26-Oct-2021)

SUMMARY

This upcoming 2022 water year, the U.S. Fish and Wildlife Service (Service) has listed the germination suppression flow as a high priority release, and spring whooping crane and late spring channel maintenance releases as medium priorities. It is not anticipated that Lake McConaughy will rise to levels that will result in a reset of the Environmental Account (EA); therefore, this year's releases will balance benefits for the target species and their habitat with carrying over EA water into the 2023 water year.

Currently, the Service is just planning a release for germination suppression. Additional releases may be considered, especially if above average snowpack is observed and there are other indications of significantly wetter hydrologic conditions across the Platte River basin. All potential releases for the upcoming year and their priority are listed in Table 1 below.

Table 1: Priority EA target flow releases for WY2022

Dates	*Target Flow (cubic feet/sec)*		*Purpose*	*Priority*	*Median Normal/Dry Shortage (kaf)*
	Wet/Normal	Dry			
Mar 23-May 10	2,400/2,400	1,700	Whooping crane	Medium	83.9/82.8
May 20 -Jun 20	3,400/3,400	800	Channel maintenance	Medium	153/23.5
Jun 1 - Jul 15	2,000/2,000	2,000	Germination suppression	High	72.9/98.9
Jun 21 – Sep 15	1,200/1,200	800	Terns & plovers, and aquatic community	Low	127/126

On September 30, 2021 the EA volume was 103,639 acre-feet (af), which includes deliveries from the Pathfinder Accounts. The previous water year was especially dry in the North Platte River basin and resulted in less than average contributions from the Pathfinder Environmental and Municipal Accounts. In fact, no water was delivered from the Municipal account and approximately 7,800 acre-feet was delivered to the EA from the Pathfinder Environmental Account. Estimates of EA credits, losses, and volume at the end of the water year (without any releases) are listed in Table 2. By the end of the water year, the EA volume will be approximately 186 thousand acre-feet (kaf).

Table 2: EA carryover accounting for WY2022

Source	*Volume (af)*
WY21 Carryover[1]	103,639
CPNRD Lease (Delivered 10/1/2021)	14,208
NCCW (Delivered 10/1/2021)	314
CNPPID Lease (Delivered 10/1/2021)	773
NPPD Leasing (Delivered 10/1/2021)	3,306
10% Storable Natural Inflows (estimated by CNPPID for WY22)	43,020
Estimated WY22 Pathfinder Deliveries (median 2012-2021)	29,841
Evaporation & Seepage Loss (Oct – Sep) (median 2000-2020)	-9,034
Estimated WY22 EA Carryover (without releases)	186,067

[1]Includes September 2021 deliveries from Pathfinder EA and Municipal accounts.

BACKGROUND

An Environmental Account of water in Lake McConaughy in Nebraska was established on October 1, 1999, as per Central Nebraska Public Power and Irrigation District (CNPPID) and Nebraska Public Power District (NPPD) (collectively, Districts) Federal Energy Regulatory Commission (FERC) licenses, for Project 1417 and Project 1835, respectively.

The EA, managed by an EA Manager appointed by the U.S. Fish and Wildlife Service, was established to benefit four federally listed species and other federal trust resources. Federally listed species include the whooping crane, piping plover, and pallid sturgeon. Federal trust resources are listed in the District's licenses and are too numerous to describe here. The interior least tern was delisted on February 12, 2021, from the list of federally threatened or endangered species, but continues to be managed as a federal trust resource. The EA Manager is required to develop an Annual Operating Plan (AOP) for releases from the EA in coordination with the EA Committee (a subcommittee of the Platte River Recovery Implementation Program; PRRIP) by the end of October of each year.

Guidelines and operating rules for the EA are described in the FERC licenses and in Attachment 5, *An Environmental Account for Storage Reservoirs on the Platte River System in Nebraska*, of the *Platte River Recovery Implementation Program*. Release priorities for the EA are based on the 1994 Service document titled: *"Instream flow recommendations for the Central Platte River, Nebraska (Instream Flow document)" and the 2019 document titled: "Water Management through the First Increment Extension of the Platte River Recovery Implementation Program."*

WATER YEAR 2022 RELEASE PRIORITIES

The high priority release for the upcoming water year is the germination suppression release which extends from June 1 to July 15. There are two medium priority releases: the spring (March 23 to May 10) whooping crane release; and late spring (May 20 to June 20) channel maintenance release. This year's summer (June 21 to September 15) release is a low priority. Information, listed in chronological order about all the potential priority releases, is summarized below.

March 23 to May 10 (Whooping Crane) Release
Priority - Medium

Purpose – This release provides in-channel habitat for the whooping crane.

Good Neighbor Conflicts and Other Conflicts - The priority release will not require bypass at the CNPPID or NPPD diversions. Flow releases will maintain ramp rates at safe levels for the Keystone Canal and the North Platte River. The release will not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake.

Estimate of EA water required- In a normal year, the median shortage for this release is 84 kaf. In practice the released volume is less, one reason is that the release is terminated when whooping cranes are no longer on the central Platte River and have moved north. In 2019, the release used approximately 53,000 acre-feet.

May 20 to June 20 (Channel Maintenance) Release
Priority – Medium

Purpose – Referencing the Service's 1994 Instream Target Flow document, the target pulse flow from May 20 to June 20 is intended to: a) maintain and enhance the physical structure of wide, open, unvegetated, and braided river channel, b) maintain and rehabilitate aquatic characteristics of large river habitats in the lower Platte River for animals such as the endangered pallid sturgeon; c) maintain and enhance the occurrence of soil moisture and pooled water for lower trophic levels of the food chain in lowland grasslands; and d) maintain and rehabilitate backwaters and side channels as spawning and nursery habitats for the aquatic community

Good Neighbor Conflicts and Other Conflicts – The release will not require bypass at the CNPPID or NPPD diversions. Flow releases will maintain ramp rates at safe levels for the Keystone Canal and the North Platte River. The release will not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake.

Conversations with NPPD and CPNRD in 2019 indicated that their sand dam diversion structures would require 5,000 cfs, or more, of flow before they start seeing damage. The table below lists the sand dams and the maximum amount of flow they can withstand. The May 20 to June 20 release made in 2017 reached a maximum flow of 4,066 cfs at Maxwell, which was mainly a result of high flows originating from the South Platte, in fact, there was no flow contribution at Maxwell from the EA release.

Table 3. Sand Dams and estimated flow to begin damage

Sand Diversion Dam	*Flow (cfs)*
Gothenburg	5,000
Dawson County	5,000
Cozad	10,000 to 15,000
Thirty-Mile	10,000 to 15,000
Orchard & Alfalfa	~5,000

Estimate of EA water required- The median shortage in a normal year for this flow target is 153 kaf. In practice, this release in generally has shorter duration with the aim to maintain flows above 3,000 cfs for at least 7 days. In 2017, the release resulted in 20 days of above 3,000 cfs and used approximately 49,000 acre-feet.

June 1 to July 15 (Germination Suppression) Release
Priority – High

Purpose – The germination suppression release was developed through coordination with the PRRIP and is not an instream flow developed by the Service in our 1994 document. This is a prioritized test release that differs in magnitude from the Service's instream flow for this time period. It's hypothesized that flows in the range of 1,800 to 2,100 cfs during the period from June 1 to July 15 should be adequate to inundate approximately 95 percent of the stream channel and leave a minimal area of sandbars exposed. The water inundation, for 30 days within the June 1 to July 15 period, should suppress plant growth by reducing transpiration and/or prevent the establishment of vegetation.

Good Neighbor Conflicts and Other Conflicts - The flow release will maintain ramp rates at safe levels for the Keystone Canal and the North Platte River. The release will not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake. The release would not require bypass at the CNPPID or NPPD diversions.

Estimate of EA water required- In a normal year, the median shortage for this release is approximately 73 kaf. The release should maintain approximately 2,000 cfs at Grand Island for 30 days.

June 21 to September 15 (Tern and Plover/Aquatic Community) Release
Priority – Low

Purpose - Referencing the Service's 1994 Instream Target Flow document, the target flow of 1,200 cfs under normal year types is required to: a) prevent least terns and piping plovers from nesting on low elevation sandbars; b) maintain high diversity of aquatic habitats for the aquatic community; c) reduce the frequency of lethal water temperature maximums to protect aquatic organisms; d) maintain habitat for the fish community; and e) prevent encroachment of non-native aquatic species

Good Neighbor Conflicts and Other Conflicts - The flow release will maintain ramp rates at safe levels for the Keystone Canal and the North Platte River. The release will not require the

retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake. The release would not require bypass at the CNPPID or NPPD diversions.

Estimate of EA water required- In a normal year, that the medium shortage for this release, in a normal year is approximately 127 kaf. In practice, the release volume is capped at a lower level that attempts to maximize benefit with the available water.