

Date: April 29, 2024

To: Governance Committee (GC), Water Advisory Committee (WAC) and Executive Director's Office (EDO) of the Platte River Recovery Implementation Program (PRRIP)

From: Jon Altenhofen, P.E., Colorado Water User Member, WAC

Memo Subject: Colorado's Annual Depletion Report for 2023 in the South Platte River Basin

Colorado's Plan for Future Depletions (CPFD)—Annual Review 2023

BASIS: Mitigate the adverse impacts of new water related activities in the South Platte River Basin in Colorado on FWS Target Flows and on Program Water Projects by replacing monthly net depletions in river flow caused by population growth since July 1, 1997, on an average annual basis. Artificial groundwater recharge captures and retimes monthly net river accretions resulting from population growth into months of net river depletions (May and June) to offset such depletions. The Table below shows that adequate mitigation has occurred.

The following basic assumptions used for 2023 accounting. These assumptions were updated in 2020 with the PRRIP requirement that updates occur every 5 years with the last update in 2015. A Questionnaire was sent to municipal members of SPWRAP in 2020. Appendix A of the 2021 Report summarizes the 2020 Questionnaire analysis which is the basis of the assumptions below. These assumptions will be used for the first five years (2020-2024) of the PRRIP Extension.

- (1) Process still based on South Platte Basin in Colorado divided into North, Central, and South Regions based on counties and data collected and analyzed by Region.
- (2) Population Increase by Region since July 1, 1997 (baseline) via Colorado State Demographer (SDO) reports. The current SDO March 29, 2024 report is attached to this report and shows a population for January 1, 2023 in the South Platte River Basin of 4,110,644 an increase of about 2.0% per year since 1997. From this current SDO Report, the percent distribution of population by region is 28%, 61% and 11% for the North, Central and South Regions, respectively.
- (3) GPCD--Gross Water Use ac-ft/person/year at 0.1771 (down from 0.2504 prior to 2020 due to more conservation).
- (4) % Water Source Mix by Region of 6 sources; 4 basic sources of transbasin imports, nontributary groundwater, agricultural conversion and new native South Platte flow development plus a 5th source of reuse mainly through exchange and a 6th source of water conservation. Each source has a monthly accretive and/or depletive effect. See attached Figure 1 for graph of depletive and accretive effects and resulting net effect at the Stateline at Julesburg.
- (5) Monthly effects are routed to the Colorado-Nebraska Stateline using the same administrative routing loss factors.

CPFD Operations through 2023

SPWRAP, Inc.--South Platte Water Related Activities Program is a non-profit group of mainly municipal Colorado water users collecting assessments (\$1.26 per tap in 2023) to pay for Colorado's water obligations for PRRIP in partnership with the State of Colorado where the State covers other Program costs. SPWRAP obtains creditable river accretions for use in Colorado's Plan for Future Depletions from (1) dedicated groundwater recharge projects

collaboratively developed and operated by SPWRAP, Inc. and (2) by paying for creditable accretions not used by existing recharge plans.

Colorado's Plan for Future Depletions also states in Section I.H.1., that new water related activities would not be covered by this plan after the average annual water supply to serve Colorado's population increase from the subgroups of "Wastewater Exchange/Reuse" and "Native South Platte Flows" (first used post-1997) exceeds 98,010 acre-feet on an average annual basis during the February-July period. For 2023, these water supply subgroups for the February-July period total 19,898 acre-feet with an average annual since start of program of 31,049 acre-feet so less than the limit of 98,010 acre-feet.

May and June Depletions (acre-feet) at Stateline from population growth:

2007	1,410
2008	1,552
2009	1,679
2010	1,807
2011	1,949
2012	2,055
2013	2,281
2014	2,420
2015	2,568
2016	2,728
2017	2,858
2018	2,983
2019	3,098
2020	2,264
2021	2,316
2022	2,351
2023	2,410
Avg	2,278

Managed groundwater recharge retimed accretions (ac-ft) into May and June at Stateline for replacement supplies:

2007	3,277
2008	1,470
2009	4,220
2010	5,790
2011	6,545
2012	2,219
2013	1,845
2014	6,827
2015	7,653
2016	7,918
2017	5,714
2018	6,802
2019	5,789
2020	4,811
2021	5,079
2022	3,027
2023	5,549
Avg	4,973

On the average annual basis, adequate retimed accretions (4,973 ac-ft) available to replace depletions (2,278 ac-ft).

FIGURE 1

Based on **Population Increase** from July 1, 1997 to:

July 1, 2023

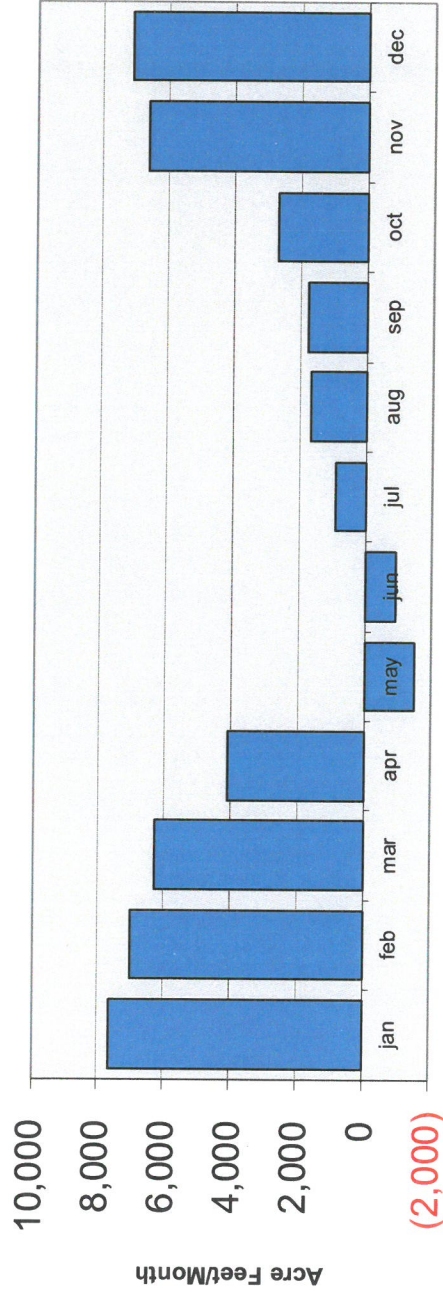
Based on GPCD (ac-ft/person/year): **0.1771**

1,541,623

Based on average % water supply sources (see table below)

Based on original Transit Loss Assumptions, Paragraph C of CPFD

Cumulative Accretions/Depletions Effects at Julesburg



(Acre-Feet Per Month); Negative values in ()

Seasonal Accretions/Depletions	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
Transbasin Imports	5578	5244	4601	3782	2328	1714	1329	1638	1370	2005	4722	4989	39,301
Nontributary Groundwater	416	414	415	550	453	257	215	217	172	282	513	518	4,423
In-basin Agricultural Conversion	75	75	71	163	327	181	132	132	132	72	65	75	1,500
Conservation	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Reuse	(24)	(24)	(50)	(286)	(913)	(363)	(658)	(593)	(247)	(154)	(22)	(24)	(3,359)
New Native South Platte Flow Development	1614	1301	1261	(98)	(3699)	(2695)	(124)	299	357	491	1340	1538	1,586
Total Accretions/Depletions	7,659	7,010	6,298	4,111	(1,504)	(906)	894	1,694	1,785	2,695	6,619	7,096	43,450
Total Accretion/Depletion, cfs	125	125	102	69	(24)	(15)	15	28	30	44	111	115	

41,488
Oct-Apr
Total

(2,410)
May+Jun
Total

Regional % Water Supply "Mix"

	Northern	Central	Southern
Transbasin Imports	49.8%	38.2%	4.8%
Nontributary Groundwater	0%	0.2%	44.4%
In-basin Agric. Conversion	23.6%	12.4%	0%
Conservation	19.9%	29.7%	30.5%
Water Reuse (Exchange)	0.4%	12.8%	12.2%
Native S. Platte Flow Development (first use after July 1, 1997)	6.3%	6.7%	8.1%
Total	100.0%	100.0%	100.0%



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Department of Local Affairs
Office of the Executive Director

March 29, 2024

Kara Scheel, P.E.
Endangered Species Recovery Program Manager
Colorado Water Conservation Board
Colorado Department of Natural Resources
1313 Sherman St. Room 721

Dear Ms. Scheel,

According to the Platte River Recovery Implementation Program the State Demography Office shall report annually population changes in each of the three regions and in Jackson County.

On the second page you will find a table with the defined regions and the State Demography Office (SDO) estimates for January 2023 and forecast for January 1, 2024 and population increase for the period. The population is expected to increase by 41,229 in the whole South Platte River Basin between January 1, 2023 and January 1, 2024.

You have also asked for the population estimates and forecasts for Jackson County for the same time period. Their estimates and forecasts are January 1, 2023 = 1,309 and January 1, 2024 = 1,300, and the expected decline to be 9 people. With changes this small, and margins of error, the population is considered to be flat.

Please be aware the estimates and forecasts are produced as vintages and will be revised annually. The data for these estimates and forecasts are based on vintage 2022 work and released November 2023. The estimates will change based on updates to administrative records. The forecast will change dependent upon economic and social conditions within the state and nationally. These data are available on our webpage at: demography.dola.colorado.gov.

Please contact me with any questions regarding the estimates and forecasts.

Regards,

Elizabeth Garner

Elizabeth Garner
State Demographer
Colorado Department of Local Affairs





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Colorado Population Estimates and Forecasts - Platte River Recovery Implementation Program
Source: State Demography Office, Department of Local Affairs March 2024.

Counties	SDO Jan 2023	SDO Jan 2024 Forecast	Pop. Change 2023-24
Boulder	327,685	328,194	509
Broomfield 55%	43,013	44,756	1,743
Larimer	367,921	371,895	3,974
Logan	20,807	20,838	31
Morgan	29,393	29,641	248
Phillips	4,432	4,431	-1
Sedgwick	2,298	2,308	10
Washington	4,839	4,849	10
Weld	354,159	362,210	8,051
Total Northern Region	1,154,545	1,169,122	14,576
Arapahoe 90%	592,762	597,966	5,204
Adams	530,179	535,880	5,701
Broomfield 45%	35,192	36,619	1,426
Clear Creek	9,375	9,399	24
Denver	715,326	720,940	5,614
Gilpin	5,921	5,974	53
Jefferson	576,314	577,623	1,309
Park	17,996	18,185	189
Total Central Region	2,483,065	2,502,586	19,521
Arapahoe 10%	65,862	66,441	578
Douglas	379,066	385,049	5,983
Elbert	28,105	28,675	570
Total Southern Region	473,034	480,165	7,131
South Platte River Basin Total	4,110,644	4,151,872	41,229

SDO - State Demography Office, November 2023

