Summary of Columbia River Basin Flood Risk Management Requirements, 1-Apr **WY 2023**
Issue Date: 07-Apr-2023

Project Limits

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR
Maximum Elevation, ft	2475.0	1444.0	2459.0	1892.0	3560.0	1290.0	2077.0	1600.0
Minimum Elevation, ft	2320.0	1378.0	2287.0	1794.2	3336.0	1208.0	1976.0	1445.0
Usable Storage, kaf	12053.3	7100.0	4979.5	1398.6	2981.0	5349.6	975.3	2015.7
Usable Storage, ksfd	6076.9	3579.6	2510.5	705.1	1502.9	2697.1	491.7	1016.3

Mar. 31 Project Conditions

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR
Elevation, ft (MSL)	2359.0	1408.8	2402.4	1804.6	3511.1	1244.5	2031.0	1521.2
Draft, kaf	9885.3	4172.8	2300.6	1303.4	1041.5	3312.5	534.9	1217.0
Usable Stor. less Draft, kaf	2168.0	2927.2	2678.9	95.2	1939.5	2037.1	440.4	798.7

Draft Required to meet Apr. 30 Flood Risk Management

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Elevation Reduction, ft	-	-	-	-	-	-	-	0.3	-
Storage Reduction, kaf	-	-	-	-	-	-	-	4.0	-

1 Apr Water Supply Forecast

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Apr-Jul, kaf	-	-	-	-	-	-	4934	2521	-
Apr-Jul %-**Normal (2)**	-	-	-	-	-	-	96%	102%	-
Apr-Jul **Change**, kaf **(1)**	-	-	-	-	-	-	632	177	-
Apr-Aug, kaf	9933	20198	4694	1874	-	49289	-	-	76790
Apr-Aug %-**Normal (2)**	89%	91%	77%	92%	-	85%	-	-	86%
Apr-Aug **Change**, kaf **(1)**	-163	-386	-604	11	-	-408	-	-	2752
May-Sep, kaf	-	-	-	-	1680	-	-	-	-
May-Sep %-**Normal (2)**	-	-	-	-	95%	-	-	-	-
May-Sep **Change**, kaf **(1)**	-	-	-	-	-80	-	-	-	-

System Draft Requirements

Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys **(3)**	DWR Loc
Jan. 31, kaf	1146	1244	2054	829	418	0	0	827	827
Feb. 28/29, kaf	1882	1782	1678	1038	429	0	219	808	808
Mar. 15, kaf	-	-	-	1134	-	-	-	-	-
Mar. 31, kaf	2910	2576	1821	1134	534	648	130	812	812
Apr. 15, kaf	-	-	-	-	481	941	188	846	846
Apr. 30, kaf	3450	3056	1419	1144	514	761	108	1218	-

System Elevation Requirements

Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys **(3)**	DWR Loc
Jan. 31, ft	-	1434.2	2409.5	1841.3	3541.7	1290.0	2077.0	1549.5	1549.5
Feb. 28/29, ft	-	1429.8	2419.6	1826.5	3541.2	1290.0	2060.5	1550.8	1550.8
Mar. 15, ft	-	-	-	1819.1	-	-	-	-	-
Mar. 31, ft	-	1423.1	2415.9	1819.1	3536.4	1281.9	2067.6	1550.5	1550.5
Apr. 15, ft	-	-	-	-	3538.8	1278.1	2063.1	1548.2	1548.2
Apr. 30, ft	-	1419.0	2426.2	1818.3	3537.3	1280.5	2069.3	1520.9	-

Flood Risk Management Summary at The Dalles, Oregon

Parameter	Chart **(3)**	kaf	kcfs
The Dalles Apr-Aug Forecast	-	76790	-
The Dalles May-Aug Forecast	-	64203	-
Upstream Storage Correction	#2	21295	-
Corrected The Dalles May-Aug Forecast	-	42908	-
Initial Controlled Flow, ICF	#1	-	261
Estimated Unregulated Peak Discharge	#1-A	-	461

Notes:

1 Change in official forecast from the previous month.

2 All %-Normal values are based on 30-year (1991-2020) Runoff Volume averages as determined by the Northwest River Forecast Center.

3 Columbia River Treaty Flood Control Operating Plan, Corps of Engineers, Northwestern Division, Corps of Engineers, 2003.

4 Dworshak and Grand Coulee System Numbers include shift if applicable, when shift is maximal the System values at Dworshak are the same as Local

Questions? Contact Kasi Whorley 503-808-3950 or Haytham Oueidat 503-808-3740.

Summary of Columbia River Basin Flood Risk Management Requirements, 1-Apr **WY 2023**

Maximum Flood Risk Storage Shift from DWR and/or BRN to GCL

Date	GCL Non-Shifted FC Draft (kaf)	GCL Maximum Draft Limit (kaf)	GCL Maximum Shift Potential (kaf)	DWR FC Draft - System (kaf)	DWR FC Draft - Local (kaf)	DWR FC Shift - Granted (kaf)	DWR / GCL FC Shift - Allowable (kaf)	DWR Shifted FC Draft (kaf)	DWR Shifted FC Elevation (ft)	GCL Shifted FC Draft (w/DWR Shift) (kaf)	GCL Shifted FC Elevation (w/DWR Shift) (ft)	GCL Maximum Shift Potential remaining (kaf)	BRN FC Shift - Granted (kaf)	BRN / GCL FC Shift - Allowable (kaf)	BRN Shifted FC Draft (kaf)	BRN Shifted FC Elevation (ft)	GCL Shifted FC Draft (w/DWR+BRN Shift) (kaf)	GCL Shifted FC Elevation(w/DWR+BRN Shift) (ft)
Jan. 31	0	2798	2798	820	827	0	0	827	***1549.5***	***0***	***1290.0***	2798	0	0	0	***2077.0***	***0***	***1290.0***
Feb. 28/29	0	2798	2798	794	808	0	0	808	***1550.8***	***0***	***1290.0***	2798	0	0	219	***2060.5***	***0***	***1290.0***
Mar. 31	537	4476	3939	923	812	**111**	111	**812**	***1550.5***	***648***	***1281.9***	3828	**0**	0	**130**	***2067.6***	***648***	***1281.9***
Apr. 15	555	4476	3921	1232	846	**386**	386	***846***	***1548.2***	***941***	***1278.1***	3535	**0**	0	**188**	***2063.1***	***941***	***1278.1***
Apr. 30 **b**	761	761	0	1218	-	**0**	0	***1218***	***1520.9***	***761***	***1280.5***	0	**0**	0	***108***	***2069.3***	***761***	***1280.5***
Column Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Notes	-	**a**	2-1	-	-	4-5	Min 3,6	4-7	-	1+7	-	2-10	-	Min 12,13	-	-	10+14	-

Notes:

Under certain conditions the required flood risk draft at DWR and BRN may be shifted to GCL prior to 30-April. The shifted rule curve shown above represents the maximum allowable flood risk storage shift(s) for the current water year based on the current month's flood risk management requirements for each project and evacuation limitations at GCL; however, the actual volume shifted to GCL on any date is ultimately determined by the Bureau of Reclamation. The shift of volume for DWR to GCL has priority over the shift of volume from BRN to GCL in cases when GCL cannot accept the total combined volume.

a The potential flood risk storage shift to GCL is limited to the operation at GCL above elevation 1252.3 ft (2744 kaf draft) at the end of February and elevation 1225.0 ft (4355 kaf draft) at end of March and 15-Apr, and also limited by the GCL maximum draft rate limit. All projects are to be at their non-shifted flood risk management draft requirements at the end of Apr.

b No shift is allowed, all projects to be back to their non-shifted flood risk draft requirement by 30-April.

Questions? Contact Kasi Whorley 503-808-3950 or Haytham Oueidat 503-808-3740.

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