Summary of Columbia River Basin Flood Risk Management Requirements, 1-Jan **WY 2024**

Issue Date: 08-Jan-2024

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

Dec. 31 Project Conditions

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR
Elevation, ft (MSL)	2414.8	1389.3	2421.2	1846.1	3536.6	1282.8	2069.5	1516.0
Draft, kaf	5856.9	6128.1	1618.3	757.2	528.3	580.7	105.6	1282.1
Usable Stor. less Draft, kaf	6196.5	971.9	3361.3	641.3	2452.6	4768.9	869.8	733.6

Draft Required to meet Jan. 31 Flood Risk Management

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Elevation Reduction, ft	-	-	3.6	1.7	-	-	-	-	-
Storage Reduction, kaf	-	-	138.5	25.0	-	-	-	-	-

1-Jan Water Supply Forecast

Project >>	MCDB	ARDB	LIB	DCDB	HGH	GCL	BRN	DWR	TDA
Apr-Jul, kaf	-	-	-	-	-	-	4181	1881	-
Apr-Jul %-**Normal (2)**	-	-	-	-	-	-	82%	76%	-
Apr-Jul **Change**, kaf **(1)**	-	-	-	-	-	-	-	-	-
Apr-Aug, kaf	10216	19353	5440	1870	-	44870	-	-	69028
Apr-Aug %-**Normal (2)**	91%	87%	89%	92%	-	77%	-	-	77%
Apr-Aug **Change**, kaf **(1)**	-	-	-	-	-	-	-	-	-
May-Sep, kaf	-	-	-	-	1270	-	-	-	-
May-Sep %-**Normal (2)**	-	-	-	-	72%	-	-	-	-
May-Sep **Change**, kaf **(1)**	-	-	-	-	-	-	-	-	-

System Draft Requirements

Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys (3)	DWR Loc
Jan. 31, kaf	915	1034	1757	782	211	0	0	715	715
Feb. 28/29, kaf	1404	1329	1826	1120	177	0	218	646	646
Mar. 15, kaf	-	-	-	1140	-	-	-	-	-
Mar. 31, kaf	1927	1657	1905	1140	139	561	118	424	424
Apr. 15, kaf	-	-	-	-	120	663	68	240	240
Apr. 30, kaf	1927	1657	1957	1140	101	537	9	366	-

System Elevation Requirements

Project >>	MCDB	ARDB	LIB VarQ	DCDB	HGH VarQ	GCL	BRN	DWR Sys (3)	DWR Loc
Jan. 31, ft	-	1435.9	2417.6	1844.4	3550.9	1290.0	2077.0	1557.2	1557.2
Feb. 28/29, ft	-	1433.5	2415.7	1820.2	3552.4	1290.0	2060.6	1561.9	1561.9
Mar. 15, ft	-	-	-	1818.7	-	-	-	-	-
Mar. 31, ft	-	1430.9	2413.6	1818.7	3554.1	1283.0	2068.5	1576.1	1576.1
Apr. 15, ft	-	-	-	-	3554.9	1281.7	2072.2	1586.9	1586.9
Apr. 30, ft	-	1430.9	2412.2	1818.7	3555.7	1283.3	2076.4	1579.5	-

Flood Risk Management Summary at The Dalles, Oregon

Parameter	Chart (3)	kaf	kcfs
The Dalles Apr-Aug Forecast	-	69028	-
The Dalles May-Aug Forecast	-	57713	-
Upstream Storage Correction	#2	15561	-
Corrected The Dalles May-Aug Forecast	-	42153	-
Initial Controlled Flow, ICF	#1	-	256
Estimated Unregulated Peak Discharge	#1-A	-	406

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 Underhill 503-808-3950 or Haytham Oueidat 503-808-3740.

Summary of Columbia River Basin Flood Risk Management Requirements, 1-Jan **WY 2024**

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	701	715	0	0	715	***1557.2***	***0***	***1290.0***	2798	0	0	0	***2077.0***	***0***	***1290.0***
Feb. 28/29	0	2798	2798	635	646	0	0	646	***1561.9***	***0***	***1290.0***	2798	0	0	218	***2060.6***	***0***	***1290.0***
Mar. 31	537	3234	2697	448	424	**24**	24	***424***	***1576.1***	***561***	***1283.0***	2673	**0**	0	**118**	***2068.5***	***561***	***1283.0***
Apr. 15	537	2232	1695	366	240	**126**	126	***240***	***1586.9***	***663***	***1281.7***	1569	**0**	0	**68**	***2072.2***	***663***	***1281.7***
Apr. 30 **b**	537	537	0	366	-	**0**	0	***366***	***1579.5***	***537***	***1283.3***	0	**0**	0	***9***	***2076.4***	***537***	***1283.3***
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 Underhill 503-808-3950 or Haytham Oueidat 503-808-3740.

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William Proctor, P.E.
Ch., Hydrologic Engineering and Power Branch