

SUMMARY OF COLUMBIA RIVER FLOOD CONTROL DATA

1 FEB 2004

|                                 | MCDB                          | ARDB   | LIB    | DCDB   | HGH                               | GCL    | BRN    | DWR    | DWR    |
|---------------------------------|-------------------------------|--------|--------|--------|-----------------------------------|--------|--------|--------|--------|
| <b>PROJECT LIMITS</b>           |                               |        |        |        |                                   |        |        |        |        |
| Maximum El. MSL                 | 2475.0                        | 1444.0 | 2459.0 | 1892.0 | 3560.0                            | 1290.0 | 2077.0 | 1600.0 |        |
| Minimum El. MSL                 | 2320.0                        | 1378.0 | 2287.0 | 1794.2 | 3336.0                            | 1208.0 | 1976.0 | 1445.0 |        |
| Usable stor.KAF                 | 12053.3                       | 7100.0 | 4979.5 | 1398.6 | 2982.0                            | 5185.5 | 975.4  | 2015.8 |        |
| Usable stor.KSFD                | 6076.9                        | 3579.6 | 2510.5 | 705.0  | 1503.4                            | 2614.4 | 491.7  | 1016.4 |        |
| <b>CURRENT, 31 JAN.</b>         |                               |        |        |        |                                   |        |        |        |        |
| Elevation MSL                   | 2388.9                        | 1401.2 | 2402.6 | 1820.0 | 3519.6                            | 1271.5 | 2054.4 | 1510.4 |        |
| Draft KAF                       | 7881.9                        | 4968.6 | 2294.9 | 1122.7 | 878.1                             | 1422.1 | 291.1  | 1351.4 |        |
| <b>TO MEET 28-9 FEB F.C.</b>    |                               |        |        |        |                                   |        |        |        |        |
| Feet                            | 0.0                           | 0.0    | 0.0    | 12.3   | 0.0                               | 0.0    | 3.0    | 0.0    |        |
| Kaf                             | 0.0                           | 0.0    | 0.0    | 147.3  | 0.0                               | 0.0    | 34.4   | 0.0    |        |
| Ksfd                            | 0.0                           | 0.0    | 0.0    | 74.3   | 0.0                               | 0.0    | 17.3   | 0.0    |        |
| Cfs over inflow                 | 0                             | 0      | 0      | 2653   | 0                                 | 0      | 619    | 0      |        |
| <b>FORECASTS, KAF</b>           |                               |        |        |        |                                   |        |        |        |        |
| Apr-Jul mp                      | na                            | na     | na     | na     | na                                | na     | 4510   | 2599   |        |
| Apr-Jul %                       | na                            | na     | na     | na     | na                                | na     | 71.5%  | 98.3%  |        |
| Apr-Jul change                  | na                            | na     | na     | na     | na                                | na     | 230    | -52    |        |
| Apr-Aug mp                      | 10979                         | 22003  | 5644   | 2013   | na                                | 57877  | na     | na     |        |
| Apr-Aug %                       | 97.2%                         | 97.9%  | 90.3%  | 98.2%  | na                                | 96.0%  | na     | na     |        |
| Apr-Aug change                  | -33                           | 1130   | 212    | -21    | na                                | -1206  | na     | na     |        |
| May-Sep mp                      | na                            | na     | na     | na     | 1903                              | na     | na     | na     |        |
| May-Sep %                       | na                            | na     | na     | na     | 103.7%                            | na     | na     | na     |        |
| May-Sep change                  | na                            | na     | na     | na     | 75                                | na     | na     | na     |        |
| <b>FLOOD CONTROL</b>            |                               |        |        |        |                                   |        |        |        |        |
| LRC, /a.                        |                               |        |        |        |                                   |        |        |        |        |
| <b>Drafts, KAF</b>              |                               |        |        |        |                                   |        |        |        |        |
| Feb 28-9                        | 2810                          | 2603   | 1202   | 1270   | 536                               | 0      | 326    | 1100   | 1120   |
| Mar 15                          | na                            | na     | 1046   | na     | na                                | na     | na     | na     | na     |
| Mar 31                          | 4080                          | 3600   | 1046   | 1270   | 686                               | 1325   | 351    | 1209   | 1054   |
| Apr 15                          | 4080                          | 3600   | 1046   | 1270   | 759                               | 2537   | 338    | 1349   | 929    |
| Apr 30                          | 4080                          | 3600   | 1046   | 1270   | 831                               | 3555   | 343    | 1185   | 0      |
| <b>Elevations MSL</b>           |                               |        |        |        |                                   |        |        |        |        |
| d/ e/                           |                               |        |        |        |                                   |        |        |        |        |
| Feb 28-9                        | na                            | 1422.9 | 2431.6 | 1807.7 | 3536.3                            | 1290.0 | 2051.4 | 1529.8 | 1528.3 |
| Mar 15                          | na                            | na     | 2435.4 | na     | na                                | na     | na     | na     | na     |
| Mar 31                          | na                            | 1414.1 | 2435.4 | 1807.7 | 3529.1                            | 1272.8 | 2049.0 | 1521.6 | 1533.2 |
| Apr 15                          | na                            | 1414.1 | 2435.4 | 1807.7 | 3525.6                            | 1255.5 | 2050.2 | 1510.6 | 1542.2 |
| Apr 30                          | na                            | 1414.1 | 2435.4 | 1807.7 | 3522.0                            | 1239.3 | 2049.8 | 1523.4 | na     |
| <b>FLOOD CONTROL, shifts</b>    |                               |        |        |        |                                   |        |        |        |        |
| shifted urc's, /b.              |                               |        |        |        |                                   |        |        |        |        |
| <b>Drafts, KAF</b>              |                               |        |        |        |                                   |        |        |        |        |
| Feb 28-9                        | na                            | na     | na     | na     | na                                | 326    | 0      | 1100   |        |
| Mar 31                          | na                            | na     | na     | na     | na                                | 1831   | 0      | 1054   |        |
| Apr 15                          | na                            | na     | na     | na     | na                                | 3295   | 0      | 929    |        |
| <b>Elevations MSL</b>           |                               |        |        |        |                                   |        |        |        |        |
| Feb 28-9                        | na                            | na     | na     | na     | na                                | 1286.0 | 2077.0 | 1529.8 |        |
| Mar 31                          | na                            | na     | na     | na     | na                                | 1265.8 | 2077.0 | 1533.2 |        |
| Apr 15                          | na                            | na     | na     | na     | na                                | 1243.6 | 2077.0 | 1542.2 |        |
| <b>SHIFT POTENTIAL, KAF</b>     |                               |        |        |        |                                   |        |        |        |        |
|                                 | 1/                            | 2/     | 3/     | 4/     | 1/ DWR SYS F.C. MINUS LOC F.C. ie |        |        |        |        |
| POTENTIAL STORAGE SHIFT TO GCL. |                               |        |        |        |                                   |        |        |        |        |
| Feb 28-9                        | 0                             | 0      | 326    | 2744   | 2/ GCL F.C. PLUS 1/.              |        |        |        |        |
| Mar 31                          | 155                           | 1480   | 1831   | 4602   | 3/ BRN F.C. PLUS 2/.              |        |        |        |        |
| Apr 15                          | 420                           | 2957   | 3295   | 4602   | 4/ MAXIMUM TOTAL THAT 2/ or 3/    |        |        |        |        |
| Apr 30                          | NO SHIFT ALLOWED BY 30 APRIL. |        |        |        | CAN ADD UP TO.                    |        |        |        |        |

| Dworshak Shift Only to GCL |        |     |
|----------------------------|--------|-----|
| shifted urc's,             | /c.    |     |
| GCL                        |        |     |
| Feb 28-9                   | 0      | KAF |
| Mar 31                     | 1480   | KAF |
| Apr 15                     | 2957   | KAF |
| DWR                        |        |     |
| Feb 28-9                   | 1290.0 | ft  |
| Mar 31                     | 1270.7 | ft  |
| Apr 15                     | 1249.0 | ft  |
| Feb 28-9                   | 1529.8 | ft  |
| Mar 31                     | 1533.2 | ft  |
| Apr 15                     | 929    | KAF |

AT THE DALLES

|                |       |       |            |                          |     |      |
|----------------|-------|-------|------------|--------------------------|-----|------|
| Apr-Aug mp     | 88200 | 94.8% | storage    | Peak to volume unreg,    | 535 | KCFS |
| Apr-Aug change | -800  |       | correction | Initial controlled flow- |     |      |
| May-Aug mp     | 74769 |       | 21942 KAF  | (ICF)                    | 334 | KCFS |

/a. LRC is DWORSHAK LOCAL RULE CURVE.

/b. Under certain conditions, the GCL, BRN and DWR rule curves may be "shifted".

The rule curves shown are the "maximum" allowable. All or part of the "max" volume may be "shifted". DWR has priority over BRN if all volume can't be shifted. "shifts" will be determined on a case by case basis, from year to year, and month to month.

/c. Shift operation based on Dworshak shift only to Grand Coulee.

/d. Flood control elevations for LIBBY are based on VARQ flood control procedures.

/e. Flood control elevations for HUNGRY HORSE are based on VARQ flood control procedures.

Questions? Contact Ken Soderlind, 503-808-3950, Arun Mylvahanan, 503-808-3961, or Chan Modini, 503-808-3958