**DRAFT**
**November 2, 1999**

## PRELIMINARY ASSESSMENT OF ALTERNATIVE WMCT SCENARIOS

Six DWRSIM operations studies for the WMCT gaming exercises are completed. The following is a brief description of the study assumptions.

The following modeling assumptions are common to all studies:

- 1995 Level hydrology (1995d06e) and upstream depletions based on DWR Bulletin 160-98 land use projections (73 years: 1922-1994).
- 1995 Level SWP and CVP demands. Total SWP demand varies from 2.6 MAF to 3.6 MAF/year depending on water conditions in the service area. Total CVP demand is 3.3 MAF/year.
- Increase the expanded Banks pumping limit (6,680 + 1/3 Vernalis flows when SJR flows are above 1,000 cfs) during Dec. 15 – Mar. 15 from 8,500 cfs to 10,300 cfs.
- Stanislaus River operations per the USBR's New Melones Interim Operations Plan.
- Meet Trinity River minimum flows of 340 TAF/yr.

The following are additional modeling assumptions specific to each study:

**Study 1: D1485 + u/s winter-run biological opinion (1995d06e-DNCT-897)**

- Meet the 1978 SWRCB D-1485 Delta water quality standards.
- Meet the minimum required flows below Keswick Dam per the 1993 winter-run biological opinion with temperature requirements in September.
- Meet modified D1400 flows in American River below Nimbus.

**Study 2: WQCP + u/s winter-run biological opinion (1995d06e-DNCT-898)**

All assumptions are the same as Study 1, except:

- Meet 1995 WQCP standards.
- Vernalis minimum flows are met to the extent possible.
- VAMP flows are met in the pulse period.

- Exports during the pulse period will be limited to 100% of Vernalis flows.

**Study 3: WQCP + u/s winter-run biological opinion (1995d06e-DNCT-899)**

All assumptions are the same as Study 2, except:

- Banks pumping capacity is increased to 7,180 cfs from July - September.
- Extend the expanded Banks pumping limit (6,680 + 1/3 Vernalis flows when SJR flows are above 1,000 cfs) from Dec. 15 – Mar. 15 to Nov. 1 – Mar. 31.
- Include a 400 cfs intertie.
- Unlimited use of joint point of diversion is allowed.

**Study 4: WQCP + u/s AFRP flows + VAMP (1995d06e-DNCT-900)**

All assumptions are the same as Study 3, except:

- VAMP export restrictions are applied during the pulse period.
- Meet upstream AFRP flows below Keswick, Clear Creek and Nimbus Dams per the November 1997 AFRP document.

**Study 5: WQCP + u/s AFRP flows (1995d06e-DNCT-904)**

All assumptions are the same as Study 2, except:

- Meet upstream AFRP flows below Keswick, Clear Creek and Nimbus Dams per the November 1997 AFRP document.

**Study 6: WQCP + Some Late Stage 1 Assets (1995d06e-DNCT-905)**

All assumptions are the same as Study 2, with the following additional assets added:

- Banks pumping capacity is increased to 10,300 cfs year round.
- Unlimited joint point of diversion is allowed.
- Include a 400 cfs intertie.
- Shasta maximum storage capacity is increased by 290 TAF (6 ft height increased).

- 500 TAF capacity Madera Ranch & Gravelly Ford groundwater combined storage as a part of the CVP system is added. Recharging and pumping capacities are assumed at 500 cfs (about 30 TAF/month).

## RESULTS

Tables 1 and 2 show the comparison of water supply impacts for all studies for the May 1928 – Oct. 1934 and 1992 – 1994 periods; and Jun. 1986 – Sep. 1992 and 1981-1989 periods, respectively. Table 3 shows the comparison of total annual SWP/CVP Delta exports from 1981-1989. Study 1 (D-1485 Base) was used as the base for comparison of impacts.