ATTACHMENT L

Sensitivity Analysis Comparing Baseline with Transfers to Baseline Without Transfers

This attachment illustrates the water surface elevations of Lake Powell and Lake Mead under baseline conditions with and without the California water transfers. The transfers involve changes in the delivery point for certain quantities of water as proposed in part of California's Colorado River Water Use Plan.

Sensitivity Analysis Comparing the Modeled Baseline Without Transfers to Baseline With Transfers Conditions

OVERVIEW

This attachment provides a summary of the sensitivity analysis conducted to assess the potential effect of the modeled California intrastate water transfers. The sensitivity analysis compares the results of the modeled baseline without transfers condition to those of the baseline with transfers condition.

Only two potential hydrologic effects resulting from the modeled California intrastate water transfers were observed. The first effect is the lower amount of surplus water that California would receive under the baseline without transfers condition reflecting a lower depletion schedule that was used to model California's maximum full surplus demand projections. The second is the potential change in river flows for that portion of the river located between Parker Dam and Imperial Dam. This potential change in river flows is associated with the change in the point of delivery of water that is being transferred between the agricultural agencies and MWD.

Additional discussion on these two potential hydrologic effects and other hydrologic aspects evaluated under this sensitivity analysis follows:

LAKE POWELL WATER SURFACE ELEVATIONS

The Lake Powell water surface elevations observed under the modeled baseline without transfers condition were compared to the baseline with transfers condition. The result of this comparative analysis indicates that there is essentially no difference between the water surface levels observed under the two modeled baseline conditions. Figure L-1 presents a comparison of the 90th, 50th and 10th percentile values observed under the two modeled baseline conditions (with and without transfers). A summary of this same information is presented in tabular format in Tables L-1, L-2 and L-3, respectively.

LAKE MEAD WATER SURFACE ELEVATIONS

Similar to the water surface elevations observed for Lake Powell, the differences that were observed in Lake Mead water surface elevations under the two baseline conditions (with and without transfers) were minimal to none. Observed differences in the 90th, 50th and 10th percentile values of the two baseline conditions varied less than plus or minus two feet. A graphical comparison of the 90th, 50th and 10th percentile values for the two modeled baseline conditions is presented in Figure L-2. A similar comparison of the 90th, 50th and 10th percentile values for the modeled conditions are presented in tabular format in Tables L-4, L-5 and L-6, respectively.

HOOVER DAM FLOOD CONTROL RELEASES

The differences in the frequency of Hoover Dam (Lake Mead) flood control releases between the two modeled baseline conditions (with and without transfers) averaged one-half of one percent higher under the baseline with transfers condition during the 15-year interim surplus criteria period. This average difference increased to seven-tenths of one percent for the ensuing 34-year period. A graphical comparison of the frequency of Lake Mead flood releases under the two modeled baseline conditions is presented in Figure L-3. The slightly higher frequency of Hoover

Dam flood control releases observed under the baseline with transfers condition can be mostly attributed to the lower depletion schedule that was used to model California's full surplus demands under these modeled conditions (see discussion on Water Supply below). Since the magnitude of the surplus deliveries are lower under the baseline with transfers condition, more water remains in Lake Mead and this increases the probability of more frequent flood control releases, however slightly.

WATER SUPPLY

The water deliveries to the Lower Division states under the two baseline conditions (with and without transfers) were evaluated to determine the effect of the modeled water transfers, if any. A summary of the evaluation of each states' water deliveries under the two different baseline conditions follows:

Arizona

The observed magnitude and corresponding frequency of water deliveries to Arizona under the two baseline conditions were essentially the same. No significant differences in the amount of water that Arizona would receive under the two baseline conditions were observed. Figure L-4, presents a comparison of the 90th, 50th and 10th percentile values for the modeled Arizona water deliveries under the two baseline conditions, respectively. Figure L-5 presents a comparison of the frequency of occurrence of different amounts of annual water deliveries to Arizona during the modeled 15-year interim surplus criteria period. Figure L-6 presents a similar comparison for the ensuing 34-year period (2017 to 2050). As illustrated in these two figures, there is very little variation in both the frequency and magnitude of water deliveries to Arizona between the two modeled baseline conditions.

California

The observed water deliveries to California under the two baseline conditions differed as a result of the different depletion schedules used to model California's demands. Different depletion schedules incorporating different maximum full surplus demand schedules were used to model the two baseline conditions. California's modeled full surplus depletion schedule under the baseline without transfers condition begins at approximately 5.52 maf (year 2002), increases steadily to 5.56 maf by 2015, and remains at this level thereafter. California's modeled full surplus depletion schedule under the baseline with transfers condition begins at approximately 5.49 maf (year 2002), steadily decreases to approximately 5.2 maf by 2025 and generally remains close to this level thereafter. As a result of the different depletion schedules used to model the two baseline conditions, the observed magnitude of surplus deliveries to California is substantially higher under the baseline without transfers condition, as illustrated in Figure L-7 which compares the 90th percentile values of the modeled depletions. In general, the 90th percentile values coincide with the maximum full surplus depletion schedules that were used to model the respective baseline conditions. The frequency and magnitude of normal condition deliveries to California did not differ and there were no shortage condition deliveries observed as illustrated in Figure L-9. Figure L-8 presents a comparison of the frequency of occurrence of different annual water deliveries to California during the modeled 15-year interim surplus criteria period. Figure L-9 presents a similar comparison for the ensuing 34-year period (2017 to 2050). As illustrated in these two figures, only the magnitude of the surplus deliveries differ between the two baseline conditions (i.e. the frequency of surplus deliveries is similar).

<u>Nevada</u>

The observed magnitude and corresponding frequency of water deliveries to Nevada under the two different modeled baseline conditions were essentially the same. No significant differences in the amount of water that Nevada would receive under the two baseline conditions were observed. Figure L-10 presents a comparison of the 90th, 50th and 10th percentile values for the modeled Nevada water deliveries under the two baseline conditions, respectively. Figure L-11 presents a comparison of the frequency of occurrence of different annual water delivery amounts to Nevada during the modeled 15-year interim surplus criteria period. Figure L-12 presents a similar comparison for the ensuing 34-year period (2017 to 2050). As illustrated in these two figures, there is very little variation in both the frequency and magnitude of water deliveries to Nevada between the two modeled baseline conditions.

RIVER FLOWS

Only two river segments were observed to be affected by the modeled California intrastate water transfers, they are – the reach of river between Parker Dam and the Palo Verde Diversion Dam and the reach of river between the Palo Verde Diversion Dam and Imperial Dam. The reduced river flow (between 200,000 to 300,000 afy) below Parker Dam is associated with the change in diversion points resulting from the modeled California intrastate water transfers. This amount accounts for approximately 3 to 4 percent of the approximate average seven maf of annual flow that was observed in these reaches of the Colorado River. The transfers are anticipated to occur during the peak months when flows in these lower river reaches are at their seasonal highs. Figures L-13a through L-16b present a graphical comparison of the seasonal flow ranges that were projected downstream of the Palo Verde Diversion Dam for years 2006, 2016, 2025 and 2050. Therefore, in terms of mean monthly flows, the change in point of diversion of the transferred water may reduce the peak flows that range from 10,000 cfs to 12,500 cfs by as much as 800 cfs. While this reduction in mean monthly flows appears to be significant, the potentially reduced flows are still within the normal annual flow range of these reaches of the Colorado River (annual range is between 3,500 cfs to 12,500 cfs). As such, the potential reduced flows are not expected to result in any significant hydrological, environmental or socio-economic impacts.

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90th Percentile 50th Percentile Water Surface Elevation (feet) 10th Percentile 90th Percentile - Baseline NO TRANSFERS → 50th Percentile - Baseline WITH TRANSFERS -O-10th Percentile - Baseline NO TRANSFERS 10th Percentile - Baseline WITH TRANSFERS

Figure L-1 Sensitivity Analysis – California Intrastate Water Transfers Lake Powell End of July Water Surface Elevations – 90th, 50th and 10th Percentile Values

Year

Lake Powell 90th Percentile Water Surface Elevations

	Baseline	Baseline
Date	with Transfers	No Transfers
7/31/02	3699.2	3699.2
7/31/03	3699.2	3699.2
7/31/04	3699.1	3699.1
7/31/05	3699.3	3699.3
7/31/06	3699.8	3699.9
7/31/07	3699.7	3699.7
7/31/08	3699.4	3699.4
7/31/09	3699.0	3699.0
7/31/10	3699.2	3699.2
7/31/11	3699.0	3699.1
7/31/12	3698.9	3698.9
7/31/13	3698.8	3698.8
7/31/14	3698.5	3698.5
7/31/15	3698.8	3698.8
7/31/16	3699.3	3699.3
7/31/17	3698.7	3698.7
7/31/18	3699.1	3699.1
7/31/19	3699.1	3699.1
7/31/20	3699.1	3699.1
7/31/21	3699.4	3699.4
7/31/22	3698.1	3698.2
7/31/23	3699.1	3699.1
7/31/24	3699.1	3699.1
7/31/25	3698.8	3698.8
7/31/26	3698.9	3698.9
7/31/27	3699.1	3698.6
7/31/28	3699.3	3699.3
7/31/29	3699.1	3699.0
7/31/30	3699.0	3699.0
7/31/31	3699.0	3698.8
7/31/32	3699.2	3699.2
7/31/33	3698.2	3698.2
7/31/34	3698.8	3699.3
7/31/35	3699.4	3699.4
7/31/36	3698.7	3699.0
7/31/37	3698.1	3698.2
7/31/38	3699.2	3699.3
7/31/39	3699.2	3699.2
7/31/40	3699.1	3699.1
7/31/41	3698.6	3698.7
7/31/42	3698.5	3698.4
7/31/43	3699.1	3699.1
7/31/44	3699.0	3699.0
7/31/45	3699.1	3699.1
7/31/46	3699.5	3699.5
7/31/47	3699.3	3699.3
7/31/48	3698.9	3698.9
7/31/49	3699.2	3699.2
7/31/50	3698.8	3698.8

Lake Powell 50th Percentile Water Surface Elevations

	Baseline	Baseline
Date	with Transfers	No Transfers
7/31/02	3688.0	3688.0
7/31/03	3689.4	3689.4
7/31/04	3688.0	3688.0
7/31/05	3688.2	3688.3
7/31/06	3683.5	3683.5
7/31/07	3684.2	3684.3
7/31/08	3681.0	3681.3
7/31/09	3679.3	3679.6
7/31/10	3677.4	3677.9
7/31/11	3675.0	3675.5
7/31/12	3674.8	3674.8
7/31/13	3670.4	3670.4
7/31/14	3667.8	3667.9
7/31/15	3665.8	3666.0
7/31/16	3665.0	3665.0
7/31/17	3666.9	3665.4
7/31/18	3664.5	3664.6
7/31/19	3663.9	3663.9
7/31/20	3664.2	3664.4
7/31/21	3664.5	3664.5
7/31/22	3664.6	3664.6
7/31/23	3665.0	3665.5
7/31/24	3664.7	3664.7
7/31/25	3667.0	3667.0
7/31/26	3666.0	3665.9
7/31/27	3665.6	3665.6
7/31/28	3664.3	3664.7
7/31/29	3663.4	3663.4
7/31/30	3664.4	3664.5
7/31/31	3665.2	3665.2
7/31/32	3666.4	3666.4
7/31/33	3667.2	3667.2
7/31/34	3668.0	3668.0
7/31/35	3669.1	3669.1
7/31/36	3669.6	3669.6
7/31/37	3671.1	3671.1
7/31/38	3672.0	3672.0
7/31/39	3671.8	3671.8
7/31/40	3672.4	3672.8
7/31/41	3672.3	3673.0
7/31/42	3669.5	3670.2
7/31/43	3669.7	3670.4
7/31/44	3668.7	3669.4
7/31/45	3666.3	3666.4
7/31/46	3666.0	3666.6
7/31/47	3665.8	3666.2
7/31/48	3664.6	3665.6
7/31/49	3662.8	3663.1
7/31/50	3661.9	3662.5

Lake Powell 10th Percentile Water Surface Elevations

Datewith TransfersNo Transfers7/31/023671.43671.47/31/033656.83656.87/31/043654.63654.67/31/053645.03645.07/31/063642.53642.67/31/073641.23641.37/31/083636.83636.97/31/093636.23636.47/31/103635.43635.67/31/103635.43635.67/31/113631.13631.57/31/123628.23628.27/31/133623.93624.17/31/143621.53621.57/31/153615.63615.77/31/163615.03615.27/31/173606.93607.47/31/183600.33600.77/31/203600.53601.27/31/213595.73598.07/31/223598.73596.87/31/233595.73596.87/31/243595.83596.07/31/253598.23596.17/31/263596.73596.87/31/283595.53596.17/31/313592.23596.17/31/323591.63592.17/31/343591.43591.97/31/353580.13580.17/31/363579.33579.37/31/373579.33579.37/31/383569.13569.17/31/393569.13566.17/31/443563.23566.17/31/453561.93561.9 </th <th></th> <th>Baseline</th> <th>Baseline</th>		Baseline	Baseline
7/31/02 3671.4 3671.4 7/31/03 3656.8 3656.8 7/31/04 3654.6 3654.6 7/31/05 3645.0 3645.0 7/31/06 3642.5 3642.6 7/31/07 3641.2 3641.3 7/31/08 3636.8 3636.9 7/31/09 3636.2 3636.4 7/31/10 3635.4 3635.6 7/31/10 3635.4 3635.6 7/31/11 3621.1 3631.5 7/31/12 3628.2 3628.2 7/31/13 3623.9 3624.1 7/31/14 3615.6 3615.7 7/31/15 3615.6 3615.7 7/31/16 3615.0 3615.2 7/31/17 3606.9 3600.7 7/31/18 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3595.7 3598.8 7/31/22 3598.7 3598.6 <td< th=""><th>Date</th><th>with Transfers</th><th>No Transfers</th></td<>	Date	with Transfers	No Transfers
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7/31/11 3631.1 3631.5 7/31/12 3628.2 3628.2 7/31/13 3623.9 3624.1 7/31/14 3621.5 3621.5 7/31/15 3615.6 3615.7 7/31/16 3615.0 3615.2 7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3595.8 7/31/21 3595.7 3595.8 7/31/22 3598.2 3596.8 7/31/24 3595.7 3596.8 7/31/25 3598.2 3596.8 7/31/26 3596.6 3596.8 7/31/28 3595.5 3595.5 7/31/28 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 <td< td=""><td>7/31/10</td><td>3635.4</td><td>3635.6</td></td<>	7/31/10	3635.4	3635.6
7/31/12 3628.2 3628.2 7/31/13 3623.9 3624.1 7/31/14 3621.5 3621.5 7/31/15 3615.6 3615.7 7/31/16 3615.0 3615.2 7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.3 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.6 3596.8 7/31/26 3596.6 3596.8 7/31/27 3598.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3596.7 3596.8 7/31/29 3595.9 3596.1 7/31/29 3595.5 3594.6 7/31/31 3592.2 3594.6 7/31/32 3591.6 3592.1 <td< td=""><td>7/31/11</td><td>3631.1</td><td>3631.5</td></td<>	7/31/11	3631.1	3631.5
7/31/13 3623.9 3624.1 7/31/14 3621.5 3621.5 7/31/15 3615.6 3615.7 7/31/16 3615.0 3615.2 7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/23 3595.7 3595.8 37/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/34 3581.0 3580.1 7/31/35 3580.1 3580.1 <t< td=""><td>7/31/12</td><td>3628.2</td><td>3628.2</td></t<>	7/31/12	3628.2	3628.2
7/31/14 3621.5 3621.5 7/31/15 3615.6 3615.7 7/31/16 3615.0 3615.2 7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/23 3595.7 3595.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3591.4 3591.9 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 <td< td=""><td>7/31/13</td><td>3623.9</td><td>3624.1</td></td<>	7/31/13	3623.9	3624.1
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7/31/16 3615.0 3615.2 7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3595.8 7/31/23 3595.7 3595.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.7 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3596.1 7/31/28 3595.5 3595.1 7/31/28 3595.5 3594.6 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.1 7/31/32 3591.6 3592.1 7/31/33 3591.4 3581.0 7/31/34 3581.0 3581.0 7/31/35 3580.1 3569.1 <td< td=""><td>7/31/15</td><td>3615.6</td><td>3615.7</td></td<>	7/31/15	3615.6	3615.7
7/31/17 3606.9 3607.4 7/31/18 3600.3 3601.2 7/31/19 3600.3 3601.2 7/31/19 3600.5 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3595.8 7/31/23 3595.7 3595.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3698.4 7/31/26 3596.6 3596.8 7/31/26 3596.7 3596.8 7/31/26 3596.7 3596.8 7/31/28 3595.5 3596.1 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3580.1 3580.1 7/31/35 3580.1 3569.1 <td< td=""><td>7/31/16</td><td>3615.0</td><td>3615.2</td></td<>	7/31/16	3615.0	3615.2
7/31/18 3600.3 3601.2 7/31/19 3600.3 3601.2 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/24 3595.7 3596.8 7/31/25 3598.2 3596.8 7/31/26 3596.6 3596.8 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3596.8 7/31/29 3595.9 3596.1 7/31/29 3595.9 3596.1 7/31/30 3591.4 3591.9 7/31/31 3592.2 3592.2 7/31/32 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/34 3581.0 3581.0 7/31/35 3569.4 3569.4 7/31/39 3569.4 3569.4 7/31/40 3568.2 3566.1 <td< td=""><td>7/31/17</td><td>3606.9</td><td>3607.4</td></td<>	7/31/17	3606.9	3607.4
7/31/19 3600.3 3600.7 7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/23 3595.7 3595.8 7/31/24 3595.7 3596.8 7/31/25 3598.2 3596.0 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.1 7/31/32 3591.4 3591.9 7/31/33 3591.4 3581.0 7/31/34 3580.1 3580.1 7/31/35 3550.1 3580.1 7/31/34 3569.1 3569.4 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.1 <td< td=""><td>7/31/18</td><td>3600.3</td><td>3601.2</td></td<>	7/31/18	3600.3	3601.2
7/31/20 3600.5 3601.2 7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/23 3595.7 3595.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3596.8 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3580.1 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3569.4 7/31/38 3569.1 3566.1 7/31/40 3568.2 3568.2 <td< td=""><td>7/31/19</td><td>3600.3</td><td>3600.7</td></td<>	7/31/19	3600.3	3600.7
7/31/21 3597.7 3598.0 7/31/22 3598.7 3596.8 7/31/23 3595.7 3595.8 7/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.6 3596.8 7/31/26 3596.7 3596.8 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3694.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.1 7/31/40 3566.1 3566.1 7/31/41 3566.1 3566.1 <td< td=""><td>7/31/20</td><td>3600.5</td><td>3601.2</td></td<>	7/31/20	3600.5	3601.2
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7/31/24 3595.8 3596.0 7/31/25 3598.2 3598.4 7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.3 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3566.1 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/41 3566.1 3566.1 7/31/41 3566.1 3566.1 7/31/41 3566.2 3566.1 <td< td=""><td>7/31/23</td><td>3595 7</td><td>3595.8</td></td<>	7/31/23	3595 7	3595.8
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7/31/26 3596.6 3596.8 7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/32 3591.4 3591.9 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.3 7/31/37 3579.3 3579.3 7/31/38 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/40 3568.2 3566.1 7/31/40 3566.1 3566.1 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 <td< td=""><td>7/31/25</td><td>3598.2</td><td>3598.4</td></td<>	7/31/25	3598.2	3598.4
7/31/27 3596.7 3596.8 7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/32 3591.4 3591.9 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3569.1 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/40 3564.1 3566.1 7/31/40 3564.9 3565.1 7/31/41 3564.9 3565.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/45 3561.9 3561.9 7/31/45 3561.9 3561.2 <td< td=""><td>7/31/26</td><td>3596.6</td><td>3596.8</td></td<>	7/31/26	3596.6	3596.8
7/31/28 3595.5 3595.5 7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3580.1 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/43 3564.9 3565.1 7/31/45 3561.9 3561.9 7/31/45 3561.9 3561.2 7/31/47 3560.0 3561.2 7/31/47 3560.0 3561.2	7/31/27	3596.7	3596.8
7/31/29 3595.9 3596.1 7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.1 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/28	3595.5	3595.5
7/31/30 3594.5 3594.6 7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.1 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/45 3561.9 3561.2 7/31/47 3560.0 3560.0 7/31/47 3560.0 3560.0	7/31/29	3595.9	3596.1
7/31/31 3592.2 3592.2 7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3561.2 7/31/47 3560.0 3560.0	7/31/30	3594.5	3594.6
7/31/32 3591.6 3592.1 7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/40 3566.1 3566.1 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/31	3592.2	3592.2
7/31/33 3591.4 3591.9 7/31/34 3581.0 3581.0 7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3566.1 7/31/40 3566.1 3566.1 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/32	3591.6	3592.1
7/31/34 3581.0 3581.0 7/31/35 3580.1 3581.0 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/33	3591.4	3591.9
7/31/35 3580.1 3580.1 7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3565.1 7/31/45 3561.9 3565.1 7/31/45 3561.9 3561.9 7/31/45 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/34	3581.0	3581.0
7/31/36 3579.9 3579.9 7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/45 3561.9 3565.1 7/31/45 3561.9 3561.9 7/31/45 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/35	3580.1	3580.1
7/31/37 3579.3 3579.3 7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3560.0 7/31/47 3560.0 3560.0	7/31/36	3579.9	3579.9
7/31/38 3569.1 3569.1 7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/37	3579.3	3579.3
7/31/39 3569.4 3569.4 7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/38	3569.1	3569.1
7/31/40 3568.2 3568.2 7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/39	3569.4	3569.4
7/31/41 3566.1 3566.1 7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/40	3568.2	3568.2
7/31/42 3566.1 3566.1 7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/41	3566.1	3566.1
7/31/43 3564.9 3565.1 7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/42	3566 1	3566 1
7/31/44 3563.2 3562.9 7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/43	3564.9	3565 1
7/31/45 3561.9 3561.9 7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0 7/31/47 3560.0 3560.0	7/31/44	3563.2	3562.9
7/31/46 3561.2 3561.2 7/31/47 3560.0 3560.0	7/31/45	3561.9	3561.9
7/31/47 3560.0 3560.0	7/31/46	3561.2	3561.2
	7/31/47	3560.0	3560.0
//31/48 35591 35591	7/31/48	3559 1	3559 1
7/31/49 3556.4 3556.5	7/31/49	3556.4	3556.5
7/31/50 3552.6 3552.7	7/31/50	3552.6	3552.7

90th Percentile Water Surface Elevation (feet) 50th Percentile → 90th Percentile - Baseline WITH TRANSFERS → 50th Percentile - Baseline WITH TRANSFERS -O-10th Percentile - Baseline NO TRANSFERS 10th Percentile Year

Figure L-2 Sensitivity Analysis – California Intrastate Water Transfers Lake Mead End of December Water Surface Elevations – 90th, 50th and 10th Percentile Values

Lake Mead 90th Percentile Water Surface Elevations

	Baseline	Baseline
Date	with Transfers	No Transfers
12/31/02	1215.2	1215.2
12/31/03	1215.2	1215.2
12/31/04	1215.1	1215.1
12/31/05	1215.2	1215.2
12/31/06	1215.2	1215.2
12/31/07	1215.2	1215.2
12/31/08	1215.1	1215.1
12/31/09	1215.2	1215.2
12/31/10	1215.2	1215.2
12/31/11	1214.7	1215.2
12/31/12	1215.3	1215.3
12/31/13	1215.2	1215.2
12/31/14	1215.2	1215.3
12/31/15	1215.3	1215.3
12/31/16	1215.2	1215.2
12/31/17	1214.7	1215.0
12/31/18	1215.2	1215.2
12/31/19	1214.2	1215.3
12/31/20	1213.7	1214.9
12/31/21	1212.8	1213.7
12/31/22	1214.8	1214.8
12/31/23	1213.9	1214.0
12/31/24	1214.6	1214.4
12/31/25	1214.0	1214.9
12/31/26	1211.5	1213.9
12/31/27	1214.2	1214.0
12/31/28	1214.2	1214.1
12/31/29	1213.5	1214.1
12/31/30	1214.1	1214.9
12/31/31	1214.1	1214.0
12/31/32	1214.7	1214.9
12/31/33	1214.3	1214.9
12/31/34	1214.5	1214.9
12/31/35	1214.2	1214.3
12/31/36	1213.5	1213.5
12/31/37	1212.3	1213.2
12/31/38	1212.7	1213.2
12/31/39	1210.9	1213.0
12/31/40	1209.5	1213.7
12/31/41	1210.9	1211.4
12/31/42	1210.3	1212.3
12/31/43	1209.0	1210.9
12/31/44	1207.9	1209.9
12/31/43	1211.1	1213.3
12/31/40	1209.0	1210.3
12/31/4/	1211.0	1213.0
12/31/40	1209.7	1011 0
12/31/49	1210.1	1211.3
12/31/30	1200.3	1200.7

Lake Mead 50th Percentile Water Surface Elevations

	Baseline	Baseline
Date	with Transfers	No Transfers
12/31/02	1187.0	1187.0
12/31/03	1189.5	1189.7
12/31/04	1187.8	1188.1
12/31/05	1187.8	1187.8
12/31/06	1182.0	1182.2
12/31/07	1178.9	1179.1
12/31/08	1180.8	1180.8
12/31/09	1177.6	1178.2
12/31/10	1177.1	1177.9
12/31/11	1172.7	1173.6
12/31/12	1171.4	1172.1
12/31/13	1167.2	1167.2
12/31/14	1163.0	1163.8
12/31/15	1166.6	1167.1
12/31/16	1159.8	1162.1
12/31/17	1158.7	1156.0
12/31/18	1154.0	1154.0
12/31/19	1148.5	1149.5
12/31/20	1148.0	1149.1
12/31/21	1141.1	1141.9
12/31/22	1137.7	1138.9
12/31/23	1136.4	1137.7
12/31/24	1131.9	1131.9
12/31/25	1130.3	1132.2
12/31/26	1124.0	1125.7
12/31/27	1127.5	1128.0
12/31/28	1124.7	1124.0
12/31/29	1122.9	1123.3
12/31/30	1122.2	1123.0
12/31/31	1121.3	1122.0
12/31/32	1121.0	1120.7
12/31/33	1122.0	1120.0
12/31/34	1119.0	1120.9
12/31/36	1110.1	1120.3
12/31/30	1119.3	1118.5
12/31/38	1120.0	1120.0
12/31/30	1120.0	1120.0
12/31/40	1115.0	1117.2
12/31/41	1113.9	1115.7
12/31/42	1113.0	1114.6
12/31/43	1112.5	1113.0
12/31/44	1108.4	1110.3
12/31/45	1106.3	1108.8
12/31/46	1108.3	1109.0
12/31/47	1107.6	1110.0
12/31/48	1111.5	1110.2
12/31/49	1110.8	1111.9
12/31/50	1109.0	1110.6

Lake Mead 10th Percentile Water Surface Elevations

	Baseline	Baseline
Date	with Transfers	No Transfers
12/31/02	1176.4	1176.4
12/31/03	1168.3	1168.3
12/31/04	1163.1	1163.0
12/31/05	1156.7	1156.7
12/31/06	1154.1	1154.1
12/31/07	1149.9	1150.1
12/31/08	1142.8	1142.7
12/31/09	1134.6	1134.6
12/31/10	1129.0	1129.3
12/31/11	1122.1	1122.2
12/31/12	1115.6	1115.6
12/31/13	1104.6	1104.8
12/31/14	1098.8	1099.5
12/31/15	1096.2	1096.3
12/31/16	1093.4	1093.3
12/31/17	1088.3	1088.5
12/31/18	1089.3	1089.6
12/31/19	1087.0	1087.7
12/31/20	1083.3	1083.6
12/31/21	1076.5	1076.4
12/31/22	1075.9	1075.9
12/31/23	1067.4	1067.3
12/31/24	1061.1	1061.5
12/31/25	1057.2	1057.2
12/31/26	1051.4	1051.3
12/31/27	1042.4	1042.3
12/31/28	1035.3	1035.6
12/31/29	1029.0	1028.9
12/31/30	1025.5	1025.5
12/31/31	1021.6	1021.6
12/31/32	1021.7	1021.6
12/31/33	1022.5	1023.1
12/31/34	1021.3	1021.1
12/31/35	1016.7	1015.5
12/31/36	1016.8	1015.9
12/31/37	1014.2	1014.4
12/31/38	1013.6	1013.3
12/31/39	1012.8	1012.6
12/31/40	1012.0	1012.0
12/31/41	1010.4	1010.3
12/31/42	1009.0	1009.0
12/31/43	1010.4	1010.4
12/31/44	1010.2	1010.3
12/31/45	1009.6	1009.9
12/31/46	1010.5	1010.5
12/31/47	1009.4	1010.0
12/31/48	1010.4	1009.4
12/31/49	1009.4	1010.0
12/31/50	1008.9	1009.7

Figure L-3 Sensitivity Analysis – California Intrastate Water Transfers Frequency of Flood Control Releases at Lake Mead



Figure L-4 Sensitivity Analysis – California Intrastate Water Transfers Arizona Annual Depletions – 90th. 50th and 10th Percentile Values



Figure L-5 Sensitivity Analysis – California Intrastate Water Transfers Arizona Annual Depletions – Percent of Values Greater than or Equal to (Years 2002 – 2016)





Figure L-6 Sensitivity Analysis – California Intrastate Water Transfers Arizona Annual Depletions - Percent of Values Greater than or Equal to (Years 2017 – 2050)

Figure L-7 Sensitivity Analysis - California Intrastate Water Transfers California Annual Depletions – 90th, 50th and 10th Percentile Values





Figure L-8 Sensitivity Analysis - California Intrastate Water Transfers California Annual Depletions – Percent of Values Greater than or Equal to (Years 2002 – 2016)

Percent of Values Greater than or Equal to



Figure L-9 Sensitivity Analysis - California Intrastate Water Transfers California Annual Depletions – Percent of Values Greater than or Equal to (Years 2017 – 2050)

Figure L-10 Sensitivity Analysis - California Intrastate Water Transfers Nevada Annual Depletions – 90th, 50th and 10th Percentile Values





Figure L-11 Sensitivity Analysis - California Intrastate Water Transfers Nevada Annual Depletions – Percent of Values Greater than or Equal to (Years 2002 – 2016)



Figure L-12 Sensitivity Analysis - California Intrastate Water Transfers Nevada Annual Depletions – Percent of Values Greater than or Equal to (Years 2017 – 2050)

Percent of Values Greater than or Equal to

Figure L-13a Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Winter Season Flows as Represented by January Flows Years 2006 and 2016





Figure L-13b Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Winter Season Flows as Represented by January Flows Years 2025 and 2050





Figure L-14a Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Spring Season Flows as Represented by April Flows Years 2006 and 2016





Figure L-14b Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Spring Season Flows as Represented by April Flows Years 20256 and 2050





Figure L-15a Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Summer Season Flows as Represented by July Flows Years 2006 and 2016





Figure L-15b Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Summer Season Flows as Represented by July Flows Years 2025 and 2050





Figure L-16a Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Fall Season Flows as Represented by October Flows Years 2006 and 2016





Figure L-16b Sensitivity Analysis - California Intrastate Water Transfers Colorado River Flow – Downstream of Palo Verde Diversion Dam Fall Season Flows as Represented by October Flows Years 2025 and 2050



