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memorandum

date November 30, 2017

to Chris Kern, San Francisco Planning Department

from John Davis, Garrett Leidy, and Joyce Hsiao, ESA ACRP CEQA team

subject Alameda Creek Recapture Project (ACRP) EIR Modeling Corrections

Introduction

After the Planning Department completed the Final EIR on the ACRP in June 2017 and the Appeal Response memoranda in August 2017, ESA found a minor calculation error in some of the streamflow estimates for Alameda Creek that were presented in the EIR. The error occurred when ESA adjusted the original Alameda System Daily Hydrologic Model (ASDHM) output to include the quarry discharge at Node 6 and up to 7.5 cfs loss of surface water to the subsurface between Node 6 (just downstream of the San Antonio Creek confluence) and Node 7 (just upstream of the Arroyo de la Laguna confluence). The calculation error only affects the streamflow estimates made for Node 8 (just downstream of the Arroyo de la Laguna confluence) and Node 9 (at the USGS gage at Niles). The error more often underestimated rather than overestimated flows downstream; the nature of the error affected the four scenarios analyzed to variable degrees.

The ACRP EIR relied upon the flow estimates at Nodes 8 and 9 for two impact analyses: the impacts of the ACRP on special-status fish species (Impact BI-11) and downstream water users (Impact HY-5). This memorandum explains why the minor corrections in the flow estimates, if they had been identified earlier, would not have changed the conclusions reached in the ACRP EIR related to Impacts BI-11 and HY-5. For unrelated reasons, the Planning Department is revising the operational analysis for Impact BI-11 and will recirculate the portion of the EIR that examines that impact. The corrected flow data will be included in that analysis.

This memorandum provides corrected versions of the tables, figures, and related text in the three volumes of the ACRP EIR that contained flow estimates for Nodes 8 and 9. The revised tables, figures, and text are presented at the end of this memorandum in Exhibit 1, with deletions shown in grey shading and strikethrough (~~strikethrough~~) text and new text underlined (underlined). ESA submitted the file containing the corrected EIR model data to you on November 20, 2017 (see file ASDHM_CEQA-ESAmod_2017-1120Correction.xlsx).

ACRP EIR Volume 1

The corrected modeling results affect one figure in Volume 1, Figure 5.16-23 (page 5.16-75) and no tables. However, the corrected modeling results necessitate various text revisions to Volume 1 (Section 5.16, Impact HY-5, pages 5.16-74 to 5.16-76), which are shown in Exhibit 1.

Figure 5.16-23 shows flow-duration curves for Node 9 for the ACWD diversion period (October 1 through May 31) for pre-2001, existing, with-CDRP, and with-project conditions. The corrected Figure 5.16-23R along with the original Figure 5.16-23 are presented in Exhibit 1 for comparison, showing the flow-duration curves for Node 9. Although the values used to plot the curves changed as a result of the correction, the differences between the original Figure 5.16-23 and corrected Figure 5.16-23R are small and not easily seen at the scale of the 8½-inch by 11-inch format.

ACRP EIR Volume 2

Appendix HYD1, the surface water hydrology report for the ACRP, is included in the ACRP EIR Volume 2. One figure in Volume 2 is affected by the corrected modeling results, Figure HYD8-1 (page 121). It is identical to Figure 5.16-23 in Volume 1. The corrected Figure HYD8-1R is identical to Figure 5.16-23R, and as described above, the differences between the original and corrected flow-duration curve are minor.

The corrected modeling results affect two tables in Volume 2, Tables HYD8-1 and HYD8-3 (pages 122 and 124, respectively). Table HYD8-1 presents flow volume in Alameda Creek at Node 9 between October 1 and May 31 for pre-2001, existing, with-CDRP, and with-project conditions for the Water Years 1996 through 2013. The corrections slightly raise the estimates of average flow volumes, by 0.4 to 1.2 percent. The corrections result in a 0.1 percent or less change in maximum flow volumes. The minimum values increase by 15, 14, 11, and 5 percent for the pre-2001, existing, with-CDRP, and with-project conditions, respectively, because the corrections affect low flow years disproportionately. See Table HYD8-1R in Exhibit 1.

Table HYD8-3 presents average monthly flows in Alameda Creek at Node 9 for pre-2001, existing, with-CDRP, and with-project conditions for the Water Years 1996 through 2013. The corrected values are slightly higher than the original values, by about 8, 5, 2, and 9 percent for the 12-month period for the pre-2001, existing, with-CDRP, and with-project conditions, respectively. Corrected values for low flow months are more affected than the high flow months, with a maximum average increase of about 14 percent in August. See Table HYD8-3R in Exhibit 1.

Text revisions to Volume 2, Appendix HYD1, that are made necessary by the corrected modeling results are shown in Exhibit 1.

ACRP EIR Volume 3

The responses to comments received on the Draft EIR are included in ACRP EIR Volume 3. The corrected modeling results affect one table in Volume 3, Table 11.5-3 (page 11.5-20). This table shows the number of days when ACRP-caused flow changes at Node 9 during the steelhead migration period (January 1 through May 31) could affect Alameda County Water District's releases. The corrections reduce the average number of days that ACRP-caused flow changes would affect releases compared to with-CDRP conditions by about 2.5 days. The corrections reduce the average number of days that ACRP-caused flow changes would affect releases compared to pre-2001 and existing conditions by 4 or 5 days. See Table 11.5-3R in Exhibit 1. Text revisions to Volume 3 that are made necessary by the corrected modeling results are shown in Exhibit 1.

Effects of Corrected Flow Estimates on Impact Significance Conclusions

<u>Operational Impacts of the ACRP on Special-status Fish Species (Impact BI-11)</u>

The significance criterion for Impact BI-11 is as follows: project operations would not substantially interfere with the movement or migration of special-status fish species, including CCC steelhead DPS. The information presented in this memo supports the conclusion that the calculation error has a minor effect on the data presented in the ACRP EIR related to streamflow. The corrected information if known earlier, would not have changed the conclusions reached in the ACRP EIR related to Impact BI-11 because the EIR analysis for this impact statement focuses on project effects on flows and operations in the primary study area in the vicinity of Nodes 6 and 7, and not on the resulting predicted flows farther downstream affected by the calculation error. For reasons unrelated to the calculation error, the Board of Supervisors has directed the Planning Department to reexamine and augment the operational impact analysis of the ACRP on steelhead due to project-induced changes in Alameda Creek streamflow. The Planning Department will recirculate the resulting analysis. The revised and augmented analysis will acknowledge and incorporate the modeling corrections.

<u>Operational Impacts of the ACRP on Downstream Water Users (Impact HY-5)</u>
As stated in the EIR, the significance criterion for Impact HY-5 is as follows: the project would have a significant impact if it were to "cause downstream water users, as a result of project-induced flow changes, to alter their operations in a way that would result in significant environmental impacts." The EIR impact analysis concluded, based on the information contained in the uncorrected versions of Figure 5.16-23 and Tables HYD8-1, HYD8-3 and 11.5-3, that project-induced flow changes compared to with-CDRP conditions were insufficient to cause the Alameda County Water District to alter its operations in a way that would result in significant environmental impacts. Therefore, the EIR concluded that Impact HY-5 was less-than-significant. The differences between the uncorrected and corrected versions of Figure 5.16-23 and Tables HYD8-1, HYD8-3 and 11.5-3 are too small to affect the original significance conclusion, and in fact, by reducing the average number of days that ACRP-caused flow changes would affect releases, the corrections result in reducing the severity of the impact on downstream users described in the Final EIR. Therefore, the modeling corrections do not affect the conclusions of Impact HY-5 that are presented in the Final EIR.

Exhibit 1: ACRP EIR (June 2017) Changes due to Model Corrections

EXHIBIT 1: ACRP EIR (JUNE 2017) CHANGES DUE TO MODEL CORRECTIONS

Deletions are shown in grey shading and strikethrough (~~strikethrough~~) text, and new text is underlined (underlined).

ACRP EIR, Volume 1

Page 5.16-74, second full paragraph, second, third, and fourth sentences

Flow at Niles, under pre-2001 conditions, is estimated to exceed 25 cfs on about 67 ~~63~~ percent of the days. Under existing conditions, it is estimated to exceed 25 cfs on about 70 ~~65~~ percent of the days. Under with-CDRP conditions it is estimated to exceed 25 cfs on about 78 ~~75~~ percent of the days. Under with-project conditions, it is estimated to exceed 25 cfs on about 70 ~~65~~ percent of the days.

Page 5.16-74, third full paragraph, second, third, and fourth sentences

Under with-CDRP conditions, average flow volume for the period October 1 through May 31 is estimated to be 94,969 ~~94,575~~ acre-feet. Under with-project conditions, it is estimated to be 98,802 ~~97,797~~ acre-feet, about 4 ~~3.4~~ percent greater than under with-CDRP conditions. By way of comparison, under pre-2001 and existing conditions, average flow volume for the same period is estimated to be 97,416 ~~96,264~~ acre-feet and 100,813 ~~100,005~~ acre-feet, respectively.

Page 5.16-75, Figure 5.16-23

(See revised Figure 5.16.23R compared to the original Figure 5.16-23)

Page 5.16-76, first paragraph, fifth sentence

Average monthly flows would be lower under with-project conditions than under pre-2001 conditions in March, ~~July, August and September; three of these are~~ a month~~s~~ when ACDW is ~~not~~ permitted to divert water from Alameda Creek.

Page 5.16-76, first paragraph, seventh, eighth, and ninth sentences

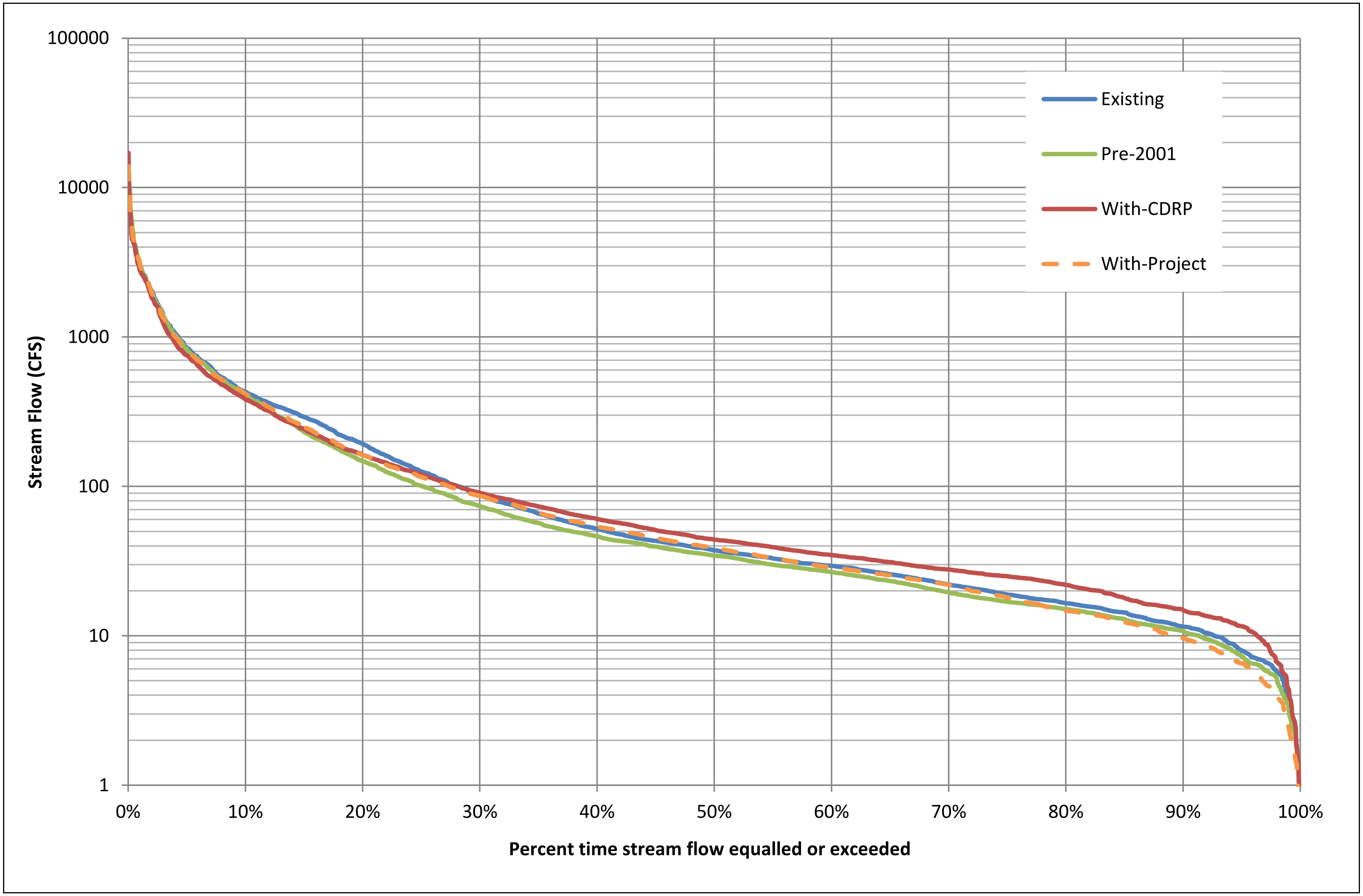
Average flows would be lower under with-project conditions than under existing conditions in six ~~nine~~ months of the year (i.e., October, December, January, April, May, and June~~, July, August, and September~~). However, one ~~four~~ of these months is ~~are~~ June, ~~July, August, and September~~ when ACWD is not permitted to divert water from Alameda Creek. Average monthly flows under with-project conditions would be higher than under existing conditions in November, February, ~~and~~ March, July, and August. Average monthly flows would be same under the two conditions in September.

Page 5.16-76, second paragraph, third sentence

Under these with-project conditions, the average flow volume in Alameda Creek at Niles, upstream of ACWD's diversion point for the eight-month period between October and May when ACWD can divert water would be 98,802 ~~97,797~~ acre-feet.

Page 5.16-76, third paragraph, second and third sentences

It is expected that an average of about 4,000 ~~3,000~~ acre-feet more water would arrive at ACWD's diversion point between October and May under with-project conditions than will under with-CDRP conditions. About an average of 2,000 ~~2,200~~ acre-feet less water would arrive at the ACWD's diversion point between October and May under with-project conditions than under existing conditions.

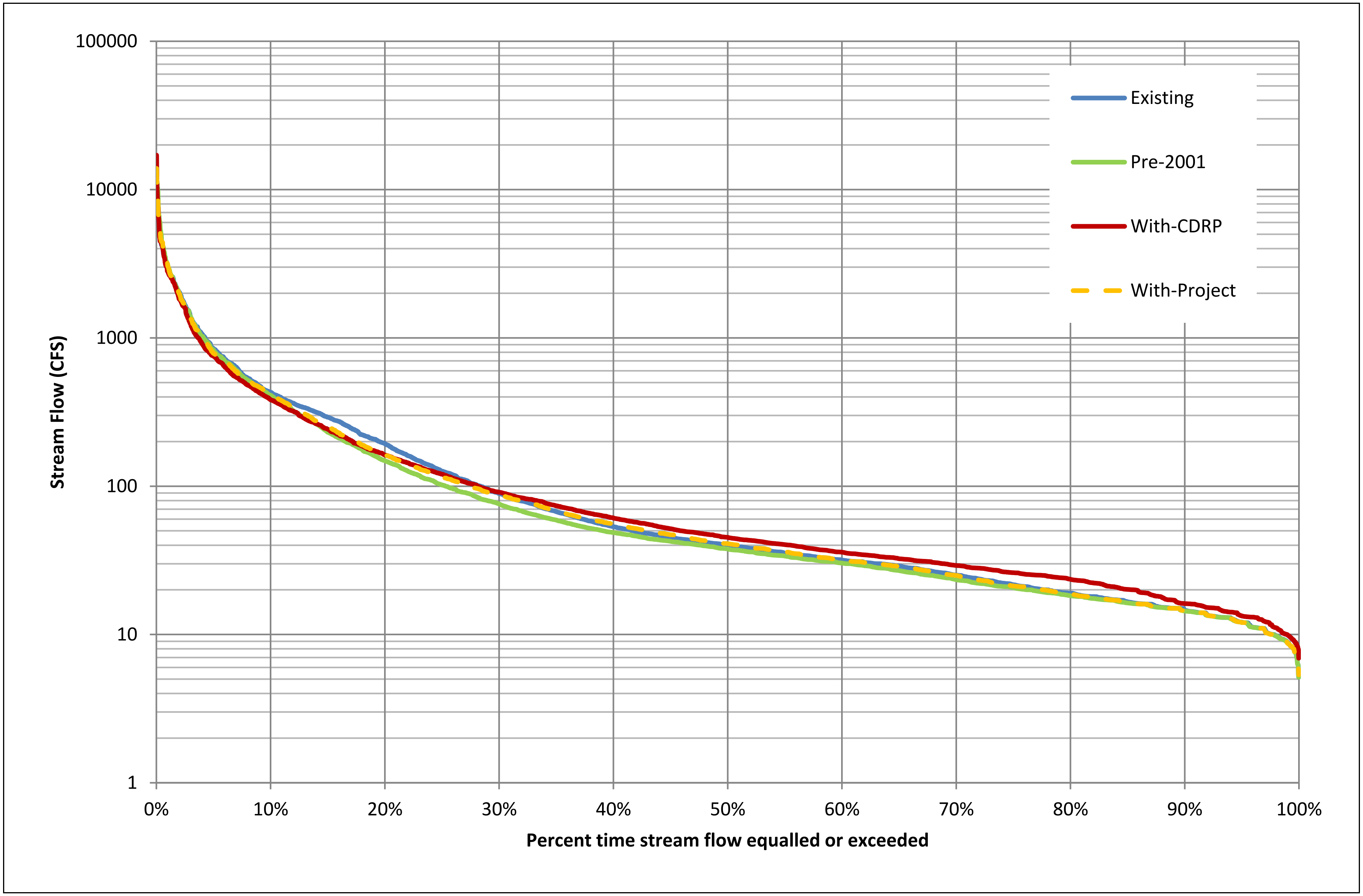


SOURCE: SFPUC, 2016. Simulated stream flows for different scenarios at 5 nodes and pond elevation for ACRP. Excel spreadsheet file provided by Amod Dhakal on July 7, 2016.

NOTE: Data presented are derived from the Alameda System Daily Hydrologic Model (ASDHM) using from Water Years (1996 – 2013)

Figure 5.16-23

Flow Duration Curves for Node 9 (Alameda Creek at Niles)
for ACWD Diversion Period (October 1 – May 31)
for Existing, Pre-2001, with-CDRP, and with-Project Conditions



SOURCE: SFPUC, 2016. Simulated stream flows for different scenarios at 5 nodes and pond elevation for ACRP. Excel spreadsheet file provided by Amod Dhakal on July 7, 2016. Data corrected, October 2017.

NOTE: Data presented are derived from the Alameda System Daily Hydrologic Model (ASDHM) using from Water Years (1996 – 2013)

Figure 5.16-23R
Flow Duration Curves for Node 9 (Alameda Creek at Niles)
for ACWD Diversion Period (October 1 – May 31)
for Existing, Pre-2001, with-CDRP, and with-Project Conditions

ACRP EIR Volume 2, Appendix HYD1

Page 121, Figure HYD8-1

(See above revised Figure 5.16.23R and original Figure 5.16-23, which are identical to Figure HYD8-1R and Figure HYD8-1, respectively.)

Page 122, Table HYD8-1

TABLE HYD8-1R
FLOW VOLUME IN ALAMEDA CREEK AT NILES (NODE 9) FROM OCTOBER 1 THROUGH MAY 31 FOR WY1996-WY2013 AS ESTIMATED FOR CEQA ANALYSIS (acre-feet)

Water Year	Pre-2001 Conditions	Existing Conditions	With-CDRP Conditions	With-Project Conditions
1996	~~216,303~~ 217,695	~~216,303~~ 217,695	~~217,707~~ 218,599	~~216,318~~ 217,731
1997	~~190,068~~ 190,381	~~190,068~~ 190,381	~~186,241~~ 186,181	~~192,639~~ 193,090
1998	~~349,584~~ 349,624	~~349,584~~ 349,624	~~344,306~~ 344,068	~~352,207~~ 351,779
1999	~~71,672~~ 72,525	~~71,672~~ 72,525	~~73,351~~ 73,831	~~75,467~~ 75,796
2000	~~93,267~~ 94,746	~~97,206~~ 98,215	~~87,309~~ 87,520	~~94,436~~ 95,065
2001	~~29,822~~ 30,715	~~29,477~~ 30,297	~~38,428~~ 38,340	~~32,568~~ 33,795
2002	~~30,399~~ 31,597	~~56,130~~ 56,056	~~38,047~~ 37,961	~~33,584~~ 34,941
2003	~~57,573~~ 57,858	~~65,733~~ 65,676	~~69,310~~ 69,153	~~64,031~~ 64,801
2004	~~40,625~~ 42,414	~~42,614~~ 44,312	~~47,768~~ 49,052	~~44,090~~ 46,176
2005	~~121,718~~ 122,241	~~127,878~~ 128,033	~~96,237~~ 96,019	~~113,082~~ 113,835
2006	~~160,492~~ 160,448	~~168,038~~ 167,741	~~138,362~~ 138,048	~~161,199~~ 161,286
2007	~~28,277~~ 29,369	~~32,541~~ 32,580	~~37,115~~ 37,031	~~30,721~~ 31,601
2008	~~50,255~~ 52,369	~~52,354~~ 53,852	~~54,543~~ 55,996	~~51,806~~ 53,895
2009	~~44,788~~ 46,394	~~38,026~~ 39,454	~~40,120~~ 40,226	~~41,707~~ 43,762
2010	~~72,845~~ 73,601	~~69,440~~ 69,949	~~72,665~~ 72,500	~~73,736~~ 74,629
2011	~~121,868~~ 122,082	~~127,120~~ 127,034	~~102,364~~ 102,132	~~123,516~~ 123,276
2012	~~21,651~~ 24,939	~~22,542~~ 25,665	~~24,243~~ 26,994	~~25,942~~ 27,201
2013	~~31,546~~ 34,487	~~43,358~~ 45,550	~~34,236~~ 35,787	~~33,306~~ 35,779
Average	~~96,264~~ 97,416	~~100,005~~ 100,813	~~94,575~~ 94,969	~~97,797~~ 98,802
Maximum	~~349,584~~ 349,624	~~349,584~~ 349,624	~~344,306~~ 344,068	~~352,207~~ 351,779
Minimum	~~21,651~~ 24,939	~~22,542~~ 25,665	~~24,243~~ 26,994	~~25,942~~ 27,201

SOURCE SFPUC, 2016. Simulated streamflows for different scenarios at 5 nodes. Excel spreadsheet file provided by Amod Dhakal on July 7, 2016. Adjusted to include NPDES quarry discharges at Node 6 and losses between Node 6 and 7 by ESA/Orion. Corrected in November 2017 by ESA/Orion.

Page 122, first paragraph, first and second sentences

Figure HYD8-1 shows that flow at Niles (Node 9), under pre-2001 conditions is estimated to exceed 25 cfs on about 67 ~~63~~ percent of the days. Under with-project conditions, it would exceed 25 cfs on 70 ~~65~~ percent of the days.

Page 122 and 123, shared paragraph, second, and third sentences

Under pre-2001 conditions, the average flow volume was 97,416 ~~96,264~~ acre-feet. The average flow volume under with-project conditions would be 98,802 ~~97,797~~ acre-feet or about 1.4 ~~1.6~~ percent more than under the pre-2001 condition.

Page 124, first paragraph, second, third, and fourth sentences

Average monthly flows would be greater under with-project conditions than they were under the pre-2001 condition for 11 ~~8~~ of 12 months. Average monthly flow volumes would be lower under with-project conditions than under pre-2001conditions in March~~, July, August and September~~. ~~However three of these months July, August and September are months when ACWD is not permitted to divert water from Alameda Creek~~.

Page 124, Table HYD8-3

TABLE HYD8-3R
AVERAGE MONTHLY FLOWS IN ALAMEDA CREEK AT NILES FOR WITH-CDRP CONDITIONS AND WITH-PROJECT CONDITIONS ESTIMATED FOR CEQA ANALYSIS PURPOSES
WY 1996 TO WY 2013 (CFS)

Scenario	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Pre-2001 Conditions	~~35.0~~ 39.5	~~46.8~~ 51.5	~~151.4~~ 154.7	~~320.5~~ 322.6	~~527.4~~ 528.9	~~330.1~~ 331.3	~~165.5~~ 167.2	~~40.3~~ 42.6	~~26.1~~ 29.1	~~24.5~~ 28.0	~~24.2~~ 28.2	~~24.7~~ 28.5
Existing Conditions	~~36.3~~ 40.0	~~47.7~~ 51.6	~~171.1~~ 173.8	~~342.3~~ 343.4	~~528.1~~ 529.1	~~305.1~~ 305.7	~~184.8~~ 185.7	~~63.2~~ 64.7	~~33.9~~ 36.0	~~25.4~~ 28.0	~~25.0~~ 28.2	~~25.6~~ 28.6
With-CDRP Conditions	~~39.0~~ 41.2	~~52.2~~ 54.6	~~162.5~~ 164.1	~~315.5~~ 316.1	~~532.2~~ 533.0	~~272.1~~ 272.4	~~165.4~~ 165.5	~~51.4~~ 52.0	~~33.1~~ 33.8	~~30.0~~ 30.8	~~28.9~~ 30.4	~~30.0~~ 31.1
With-project Conditions	~~35.0~~ 39.6	~~48.2~~ 53.1	~~159.1~~ 162.2	~~323.8~~ 325.0	~~535.7~~ 536.4	~~326.7~~ 327.1	~~169.5~~ 170.7	~~44.9~~ 47.4	~~26.6~~ 30.2	~~24.0~~ 28.2	~~23.7~~ 28.4	~~24.0~~ 28.6
With-project Conditions minus Pre-2001Conditions	~~0~~ 0.1	~~1.4~~ 1.6	~~7.7~~ 7.5	~~3.3~~ 2.4	~~8.3~~ 7.5	~~-3.4~~ -4.2	~~4.0~~ 3.5	~~4.6~~ 4.9	~~0.5~~ 1.1	~~-0.5~~ 0.3	~~-0.5~~ 0.2	~~-0.7~~ 0.1
Difference in flow between with project conditions and existing conditions (With-project conditions minus Existing Conditions)	~~-1.3~~ -0.4	~~0.5~~ 1.4	~~-12.0~~ -11.6	~~-18.5~~ -18.4	~~7.6~~ 7.3	~~21.6~~ 21.4	~~-15.3~~ -15.0	~~-18.3~~ -17.3	~~-7.3~~ -5.9	~~-1.4~~ 0.2	~~-1.3~~ 0.2	~~-1.6~~ 0.0
Difference in flow between with project conditions and with CDRP conditions (With-project conditions minus With-CDRP)	~~-4.0~~ -1.6	~~-4.0~~ -1.5	~~-3.4~~ -1.9	~~8.3~~ 8.8	~~3.5~~ 3.4	~~54.6~~ 54.8	~~4.1~~ 5.3	~~-6.5~~ -4.5	~~-6.5~~ -3.6	~~-6.0~~ -2.6	~~-5.2~~ -2.1	~~-6.0~~ -2.5

SOURCE SFPUC, 2016. Simulated streamflows for different scenarios at 5 nodes. Excel spreadsheet file provided by Amod Dhakal on July 7, 2016. Adjusted to include NPDES quarry discharges at Node 6 and losses between Node 6 and 7 by ESA/Orion. Corrected in November 2017 by ESA/Orion.

Page 125, first paragraph, second and third sentences

Flow at Niles under existing conditions is estimated to exceed 25 cfs on about 70 ~~65~~ percent of the days. Under with-project conditions, it would also exceed 25 cfs on 70 ~~65~~ percent of the days.

Page 125, second paragraph, second and third sentences

Under existing conditions, the average flow volume in Alameda Creek at Niles is estimated to be 100,813 ~~100,005~~ acre-feet. Under with-project conditions, it would be 98,802 ~~97,797~~ acre-feet or about 2 ~~2.2~~ percent less than under existing conditions.

Page 126, first full paragraph, second, third, and fourth sentences

Average monthly flows would be lower under with-project conditions than under existing conditions for six ~~nine~~ months of the year. However, one ~~four~~ of these months is ~~are~~ June, ~~July, August and September~~ when ACWD is not permitted to divert water from Alameda Creek. Average monthly flows under with-project conditions would be higher than under existing conditions in November, February, ~~and~~ March, July, and August. Average monthly flows would be the same under the two conditions in September.

Page 126, third full paragraph, second and third sentences

Flow at Niles, under with-CDRP conditions is estimated to exceed 25 cfs on about 78 ~~75~~ percent of the days. Under with project conditions, it would exceed 25 cfs on 70 ~~65~~ percent of the days.

Page 126, fourth full paragraph, second and third sentences

Under with CDRP conditions, the average flow in Alameda Creek at Niles is estimated to be 94,969 ~~94,575~~ acre-feet. Under with-project conditions, it would be 98,802 ~~97,797~~ acre-feet, about 4 ~~3.4~~ percent more than under with-CDRP conditions.

Page 127, third full paragraph, second sentence

Under these pre-2001 conditions, the average flow volume in Alameda Creek at Niles, upstream of ACWD's diversion point for the eight-month period between October and May when ACWD can divert water is estimated to be 97,416 ~~96,264~~ acre-feet.

Page 127, fourth full paragraph, second sentence

Under existing conditions, the average flow volume in Alameda Creek at Niles, upstream of ACWD's diversion point for the eight-month period between October and May when ACWD can divert water is estimated to be 100,813 ~~100,005~~ acre-feet.

Page 127, fifth full paragraph, second sentence

Under these with-project conditions, the average flow volume in Alameda Creek at Niles, upstream of ACWD's diversion point for the eight-month period between October and May when ACWD can divert water is estimated to be 98,802 ~~94,575~~ acre-feet.

Pages 127 and 128, bridging paragraph 6, first sentence

From 2001 until the present, as a result of the SFPUC's reduced diversion of water necessitated by the storage restrictions at Calaveras Reservoir, an annual average of about 3,400 ~~4,000~~ acre-feet more water has flowed down Alameda Creek to the ACWD diversion point between October and May than did prior to 2001.

Page 127 and 128, bridging paragraph, third sentence

Once the CDRP and the proposed ACRP are commissioned and Calaveras Reservoir's full storage capacity is available to the SFPUC, flow volume at ACWD's diversion point between October and May would be reduced, but it would still be an ~~annual~~ average of about 1,400 ~~1,500~~ acre-feet, or 1.4 ~~1.6~~ percent, higher than under pre-2001 conditions.

ACRP EIR Volume 3

Page 11.5-19, second paragraph, fourth, fifth, and sixth sentences

Relative to pre-2001 conditions, the ACRP would affect ACWD's release requirements on an average of about 4.8 ~~9.3~~ days (4.8 ~~8.8~~ days of increase and zero ~~0.5~~ days of decrease) of the 151-day steelhead in-migration season. Relative to existing conditions, the ACRP would affect release requirements on an average of about 4.6 ~~9.4~~ days (2.4 ~~5.3~~ days of increase and 2.2 ~~4.1~~ days of decrease) of the 151-day steelhead in-migration season. Relative to with-CDRP conditions, the ACRP would affect releases requirements on an average of about 11.5 ~~14.9~~ days (0.1 ~~0.8~~ days of increase and 11.4 ~~14.1~~ days of decrease) of the 151-day steelhead in-migration season.

Page 11.5-19, third paragraph, second and third sentences

Under pre-2001 and existing condition, on average, the effect of the ACRP would be to increase flow at the Niles gage above the thresholds of 25 cfs (January 1 to March 31) and 30 cfs (April 1 to May 31) about 4.8 ~~8.8~~ days and 2.4 ~~5.3~~ days, respectively, and therefore raise the amount of the required release on those days. Compared to with-CDRP conditions, the ACRP would not increase flow but instead decrease flow at the Niles gage below the thresholds of 25 cfs (January 1 to March 31) and 30 cfs (April 1 to May 31) on an average of about 11.4 ~~14.1~~ days.

Page 11.5-20, Table 11.5-3

TABLE 11.5-3R
ESTIMATED NUMBER OF DAYS ACRP-CAUSED INCREASES AND DECREASES IN FLOW AT NILES (NODE 9) ABOVE THRESHOLD (25 CFS AND 30 CFS) DURING THE STEELHEAD MIGRATION PERIOD (JANUARY 1 TO MAY 31) THAT COULD AFFECT ACWD RELEASES* (DAYS)

Water Year	Compared to Pre-2001 Conditions		Compared to Existing Conditions		Compared to With-CDRP Conditions	
	Increase	Decrease	Increase	Decrease	Increase	Decrease
1996	~~4~~ 0	0	~~4~~ 0	0	0	1
1997	0	~~3~~ 0	0	~~3~~ 0	0	~~5~~ 6
1998	0	0	0	0	0	0
1999	~~4~~ 0	0	~~4~~ 0	0	0	0
2000	~~5~~ 0	0	~~3~~ 0	0	0	3
2001	~~7~~ 1	~~3~~ 0	~~6~~ 1	~~3~~ 0	0	~~63~~ 54
2002	~~26~~ 21	0	~~10~~ 5	~~14~~ 5	0	~~28~~ 20
2003	~~11~~ 13	0	~~6~~ 8	~~0~~ 1	0	~~29~~ 33
2004	~~7~~ 6	0	~~5~~ 6	~~7~~ 8	0	~~34~~ 15
2005	~~23~~ 14	0	~~13~~ 8	0	0	~~7~~ 10
2006	0	0	0	0	0	0
2007	~~12~~ 1	0	~~9~~ 1	~~2~~ 0	0	~~25~~ 35
2008	~~11~~ 2	~~1~~ 0	~~3~~ 2	~~25~~ 15	0	~~13~~ 9
2009	~~4~~ 2	~~2~~ 0	~~3~~ 2	~~2~~ 0	0	~~30~~ 12
2010	~~11~~ 8	0	~~7~~ 6	0	0	7
2011	~~10~~ 15	0	1	6	0	~~2~~ 1
2012	~~21~~ 4	0	~~21~~ 4	0	~~14~~ 1	0
2013	~~2~~ 0	0	0	~~12~~ 11	0	~~7~~ 0
Average	*~~8.8~~* *4.8*	*~~0.5~~* *0.0*	*~~5.3~~* *2.4*	*~~4.1~~* *2.2*	*~~0.8~~* *0.1*	*~~14.1~~* *11.4*

SOURCE: ESA and Orion, June 2017, corrected November 2017.

Pages 11.5-20 and 11.5-21, bridging paragraph, first, second, third, fourth, and fifth sentences

ACRP-caused changes in flow in the vicinity of 25 cfs and 30 cfs would affect ACWD's proposed release requirements on about 4.8 ~~9.3~~ days on average, during the 151-day steelhead in-migration season of each water year compared to pre-2001 conditions. On about 4.8 ~~8.8~~ days, the ACRP would both increase flow and release requirements compared to pre-2001 conditions. ACRP-caused changes in flow in the vicinity of 25 cfs and 30 cfs would affect ACWD's release requirements on about 4.6 ~~9.4~~ days on average during the 151-day steelhead in-migration season compared to existing conditions. On about 2.4 ~~5.3~~ days, the ACRP would both increase flow and release requirements compared to existing conditions. ACRP-caused changes in flow in the vicinity of 25 cfs and 30 cfs would affect ACWD's release requirements on about 11.5 ~~14.9~~ days on average during the 151-day steelhead in-migration season compared to with-CDRP conditions. On about 11.4 ~~14.1~~ days, the ACRP would both decrease flow and release requirements.