

APPENDIX 5A, SECTION E
MODELING TECHNICAL APPENDIX –
ATTACHMENT 1 – SALMOD MODEL RESULTS
FOR EXISTING CONDITION AND ALTERNATIVES
AT 2020

5A-E. Appendix 5A, Section E Modeling Technical Appendix – Attachment 1 – SALMOD	
Model Results for Existing Condition and Alternatives at 2020	E-1
E.1 Production Results	E-2
E.1.1 Fall-Run Chinook Salmon Production	E-2
E.1.2 Late Fall-Run Chinook Salmon Production	E-7
E.1.3 Spring-Run Chinook Salmon Production	E-11
E.1.4 Winter-Run Chinook Salmon Production	E-15
E.2 Mortality Results	E-19
E.2.1 Fall-Run Chinook Salmon Mortality	E-19
E.2.2 Late Fall-Run Chinook Salmon Mortality	E-28
E.2.3 Spring-Run Chinook Salmon Mortality	E-37
E.2.4 Winter-Run Chinook Salmon Mortality	E-46
E.3 References	E-55

Tables

Table 5A-E1.1.1.1-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Existing Condition	E-2
Table 5A-E1.1.1.1-B. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2020)	E-2
Table 5A-E1.1.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition	E-2
Table 5A-E1.1.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-3
Table 5A-E1.1.1.2-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2020)	E-3
Table 5A-E1.1.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2020) minus Existing Condition	E-3
Table 5A-E1.1.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-3
Table 5A-E1.1.1.3-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2020)	E-4
Table 5A-E1.1.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-4
Table 5A-E1.1.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2020) minus Existing Condition	E-4
Table 5A-E1.1.1.4-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2020)	E-4
Table 5A-E1.1.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-5

1	Table 5A-E1.1.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
2	Production (percentage), Alternative 2a/4a (2020) minus Existing Condition.....	E-5
3	Table 5A-E1.1.1.5-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish	
4	per year), Alternative 5 (2020).....	E-5
5	Table 5A-E1.1.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Production	
6	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-5
7	Table 5A-E1.1.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
8	Production (percentage), Alternative 5 (2020) minus Existing Condition	E-6
9	Table 5A-E1.1.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
10	fish per year), Existing Condition.....	E-7
11	Table 5A-E1.1.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
12	fish per year), Alternative 2b/4b (2020)	E-7
13	Table 5A-E1.1.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average	
14	Production (number of fish per year), Alternative 2b/4b (2020) minus Existing	
15	Condition.....	E-7
16	Table 5A-E1.1.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
17	Production (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-7
18	Table 5A-E1.1.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
19	fish per year), Alternative 2c/4c (2020)	E-8
20	Table 5A-E1.1.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average	
21	Production (number of fish per year), Alternative 2c/4c (2020) minus Existing	
22	Condition.....	E-8
23	Table 5A-E1.1.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
24	Production (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-8
25	Table 5A-E1.1.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
26	fish per year), Alternative 1/3 (2020)	E-8
27	Table 5A-E1.1.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average	
28	Production (number of fish per year), Alternative 1/3 (2020) minus Existing	
29	Condition.....	E-9
30	Table 5A-E1.1.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
31	Production (percentage), Alternative 1/3 (2020) minus Existing Condition	E-9
32	Table 5A-E1.1.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
33	fish per year), Alternative 2a/4a (2020)	E-9
34	Table 5A-E1.1.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average	
35	Production (number of fish per year), Alternative 2a/4a (2020) minus Existing	
36	Condition.....	E-9
37	Table 5A-E1.1.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
38	Production (percentage), Alternative 2a/4a (2020) minus Existing Condition.....	E-10
39	Table 5A-E1.1.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of	
40	fish per year), Alternative 5 (2020)	E-10
41	Table 5A-E1.1.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average	
42	Production (number of fish per year), Alternative 5 (2020) minus Existing Condition	E-10
43	Table 5A-E1.1.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
44	Production (percentage), Alternative 5 (2020) minus Existing Condition	E-10

1	Table 5A-E1.1.3.1-A. Spring-Run Chinook Salmon, Annual Average Production (number of	
2	fish per year), Existing Condition.....	E-11
3	Table 5A-E1.1.3.1-B. Spring-Run Chinook Salmon, Annual Average Production (number of	
4	fish per year), Alternative 2b/4b (2020)	E-11
5	Table 5A-E1.1.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Production	
6	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition.....	E-11
7	Table 5A-E1.1.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
8	Production (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-11
9	Table 5A-E1.1.3.2-A. Spring-Run Chinook Salmon, Annual Average Production (number of	
10	fish per year), Alternative 2c/4c (2020)	E-12
11	Table 5A-E1.1.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
12	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition.....	E-12
13	Table 5A-E1.1.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
14	Production (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-12
15	Table 5A-E1.1.3.3-A. Spring-Run Chinook Salmon, Annual Average Production (number of	
16	fish per year), Alternative 1/3 (2020)	E-12
17	Table 5A-E1.1.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
18	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-13
19	Table 5A-E1.1.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
20	Production (percentage), Alternative 1/3 (2020) minus Existing Condition	E-13
21	Table 5A-E1.1.3.4-A. Spring-Run Chinook Salmon, Annual Average Production (number of	
22	fish per year), Alternative 2a/4a (2020)	E-13
23	Table 5A-E1.1.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
24	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-13
25	Table 5A-E1.1.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
26	Production (percentage), Alternative 2a/4a (2020) minus Existing Condition.....	E-14
27	Table 5A-E1.1.3.5-A. Spring-Run Chinook Salmon, Annual Average Production (number of	
28	fish per year), Alternative 5 (2020)	E-14
29	Table 5A-E1.1.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
30	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-14
31	Table 5A-E1.1.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
32	Production (percentage), Alternative 5 (2020) minus Existing Condition	E-14
33	Table 5A-E1.1.4.1-A. Winter-Run Chinook Salmon, Annual Average Production (number of	
34	fish per year), Existing Condition.....	E-15
35	Table 5A-E1.1.4.1-B. Winter-Run Chinook Salmon, Annual Average Production (number of	
36	fish per year), Alternative 2b/4b (2020)	E-15
37	Table 5A-E1.1.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Production	
38	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition.....	E-15
39	Table 5A-E1.1.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
40	Production (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-15
41	Table 5A-E1.1.4.2-A. Winter-Run Chinook Salmon, Annual Average Production (number of	
42	fish per year), Alternative 2c/4c (2020)	E-16
43	Table 5A-E1.1.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
44	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition.....	E-16

1	Table 5A-E1.1.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
2	Production (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-16
3	Table 5A-E1.1.4.3-A. Winter-Run Chinook Salmon, Annual Average Production (number of	
4	fish per year), Alternative 1/3 (2020)	E-16
5	Table 5A-E1.1.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
6	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-17
7	Table 5A-E1.1.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
8	Production (percentage), Alternative 1/3 (2020) minus Existing Condition	E-17
9	Table 5A-E1.1.4.4-A. Winter-Run Chinook Salmon, Annual Average Production (number of	
10	fish per year), Alternative 2a/4a (2020)	E-17
11	Table 5A-E1.1.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
12	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-17
13	Table 5A-E1.1.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
14	Production (percentage), Alternative 2a/4a (2020) minus Existing Condition	E-18
15	Table 5A-E1.1.4.5-A. Winter-Run Chinook Salmon, Annual Average Production (number of	
16	fish per year), Alternative 5 (2020)	E-18
17	Table 5A-E1.1.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
18	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-18
19	Table 5A-E1.1.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
20	Production (percentage), Alternative 5 (2020) minus Existing Condition	E-18
21	Table 5A-E1.2.1.1-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
22	per year), Existing Condition	E-20
23	Table 5A-E1.2.1.1-B. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
24	per year), Alternative 2b/4b (2020)	E-20
25	Table 5A-E1.2.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
26	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition	E-21
27	Table 5A-E1.2.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
28	Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-21
29	Table 5A-E1.2.1.2-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
30	per year), Alternative 2c/4c (2020)	E-22
31	Table 5A-E1.2.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
32	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition	E-22
33	Table 5A-E1.2.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
34	Mortality (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-23
35	Table 5A-E1.2.1.3-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
36	per year), Alternative 1/3 (2020)	E-23
37	Table 5A-E1.2.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
38	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-24
39	Table 5A-E1.2.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
40	Mortality (percentage), Alternative 1/3 (2020) minus Existing Condition	E-24
41	Table 5A-E1.2.1.4-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
42	per year), Alternative 2a/4a (2020)	E-25
43	Table 5A-E1.2.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
44	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-25

1	Table 5A-E1.2.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
2	Mortality (percentage), Alternative 2a/4a (2020) minus Existing Condition	E-26
3	Table 5A-E1.2.1.5-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
4	per year), Alternative 5 (2020)	E-26
5	Table 5A-E1.2.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
6	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-27
7	Table 5A-E1.2.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average	
8	Mortality (percentage), Alternative 5 (2020) minus Existing Condition	E-27
9	Table 5A-E1.2.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
10	fish per year), Existing Condition	E-29
11	Table 5A-E1.2.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
12	fish per year), Alternative 2b/4b (2020)	E-29
13	Table 5A-E1.2.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
14	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition	E-30
15	Table 5A-E1.2.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
16	Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition	E-30
17	Table 5A-E1.2.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
18	fish per year), Alternative 2c/4c (2020)	E-31
19	Table 5A-E1.2.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
20	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition	E-31
21	Table 5A-E1.2.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
22	Mortality (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-32
23	Table 5A-E1.2.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
24	fish per year), Alternative 1/3 (2020)	E-32
25	Table 5A-E1.2.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
26	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-33
27	Table 5A-E1.2.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
28	Mortality (percentage), Alternative 1/3 (2020) minus Existing Condition	E-33
29	Table 5A-E1.2.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
30	fish per year), Alternative 2a/4a (2020)	E-34
31	Table 5A-E1.2.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
32	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-34
33	Table 5A-E1.2.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
34	Mortality (percentage), Alternative 2a/4a (2020) minus Existing Condition	E-35
35	Table 5A-E1.2.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of	
36	fish per year), Alternative 5 (2020)	E-35
37	Table 5A-E1.2.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
38	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-36
39	Table 5A-E1.2.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
40	Mortality (percentage), Alternative 5 (2020) minus Existing Condition	E-36
41	Table 5A-E1.2.3.1-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
42	per year), Existing Condition	E-38
43	Table 5A-E1.2.3.1-B. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
44	per year), Alternative 2b/4b (2020)	E-38

1	Table 5A-E1.2.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
2	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition.....	E-39
3	Table 5A-E1.2.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
4	Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition.....	E-39
5	Table 5A-E1.2.3.2-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
6	per year), Alternative 2c/4c (2020)	E-40
7	Table 5A-E1.2.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
8	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition.....	E-40
9	Table 5A-E1.2.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
10	Mortality (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-41
11	Table 5A-E1.2.3.3-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
12	per year), Alternative 1/3 (2020).....	E-41
13	Table 5A-E1.2.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
14	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition.....	E-42
15	Table 5A-E1.2.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
16	Mortality (percentage), Alternative 1/3 (2020) minus Existing Condition	E-42
17	Table 5A-E1.2.3.4-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
18	per year), Alternative 2a/4a (2020)	E-43
19	Table 5A-E1.2.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
20	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-43
21	Table 5A-E1.2.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
22	Mortality (percentage), Alternative 2a/4a (2020) minus Existing Condition	E-44
23	Table 5A-E1.2.3.5-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish	
24	per year), Alternative 5 (2020).....	E-44
25	Table 5A-E1.2.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
26	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-45
27	Table 5A-E1.2.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
28	Mortality (percentage), Alternative 5 (2020) minus Existing Condition	E-45
29	Table 5A-E1.2.4.1-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
30	fish per year), Existing Condition.....	E-47
31	Table 5A-E1.2.4.1-B. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
32	fish per year), Alternative 2b/4b (2020)	E-47
33	Table 5A-E1.2.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
34	(number of fish per year), Alternative 2b/4b (2020) minus Existing Condition.....	E-48
35	Table 5A-E1.2.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
36	Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition.....	E-48
37	Table 5A-E1.2.4.2-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
38	fish per year), Alternative 2c/4c (2020)	E-49
39	Table 5A-E1.2.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
40	(number of fish per year), Alternative 2c/4c (2020) minus Existing Condition.....	E-49
41	Table 5A-E1.2.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
42	Mortality (percentage), Alternative 2c/4c (2020) minus Existing Condition	E-50
43	Table 5A-E1.2.4.3-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
44	fish per year), Alternative 1/3 (2020)	E-50

1	Table 5A-E1.2.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
2	(number of fish per year), Alternative 1/3 (2020) minus Existing Condition	E-51
3	Table 5A-E1.2.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
4	Mortality (percentage), Alternative 1/3 (2020) minus Existing Condition	E-51
5	Table 5A-E1.2.4.4-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
6	fish per year), Alternative 2a/4a (2020)	E-52
7	Table 5A-E1.2.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
8	(number of fish per year), Alternative 2a/4a (2020) minus Existing Condition	E-52
9	Table 5A-E1.2.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
10	Mortality (percentage), Alternative 2a/4a (2020) minus Existing Condition	E-53
11	Table 5A-E1.2.4.5-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of	
12	fish per year), Alternative 5 (2020)	E-53
13	Table 5A-E1.2.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
14	(number of fish per year), Alternative 5 (2020) minus Existing Condition	E-54
15	Table 5A-E1.2.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
16	Mortality (percentage), Alternative 5 (2020) minus Existing Condition	E-54
17		
18		

Appendix 5A, Section E
Modeling Technical Appendix – Attachment 1 –
SALMOD Model Results for Existing Condition and
Alternatives at 2020

This attachment provides a summary of SALMOD results for simulations conducted for the Delta Conveyance Project Final Environmental Impact Report (EIR).

E.1 Production Results

E.1.1 Fall-Run Chinook Salmon Production

Table 5A-E1.1.1.1-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Existing Condition

Average	Annual Potential Production
Full Simulation Period	14,591,971
Wet Water Years	13,932,281
Above Normal Water Years	15,081,265
Below Normal Water Years	14,794,101
Dry Water Years	15,380,583
Critical Water Years	14,402,246

Table 5A-E1.1.1.1-B. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2020)

Average	Annual Potential Production
Full Simulation Period	14,622,196
Wet Water Years	13,878,216
Above Normal Water Years	15,044,521
Below Normal Water Years	14,855,189
Dry Water Years	15,349,672
Critical Water Years	14,687,078

Table 5A-E1.1.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	30,225
Wet Water Years	-54,065
Above Normal Water Years	-36,744
Below Normal Water Years	61,088
Dry Water Years	-30,911
Critical Water Years	284,832

Table 5A-E1.1.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.1.2-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2020)

Average	Annual Potential Production
Full Simulation Period	14,598,292
Wet Water Years	13,842,566
Above Normal Water Years	15,002,218
Below Normal Water Years	14,857,952
Dry Water Years	15,347,982
Critical Water Years	14,635,508

Table 5A-E1.1.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	6,321
Wet Water Years	-89,715
Above Normal Water Years	-79,047
Below Normal Water Years	63,851
Dry Water Years	-32,601
Critical Water Years	233,262

Table 5A-E1.1.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	-1%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.1.3-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2020)

Average	Annual Potential Production
Full Simulation Period	14,589,914
Wet Water Years	13,884,672
Above Normal Water Years	14,975,848
Below Normal Water Years	14,807,061
Dry Water Years	15,357,317
Critical Water Years	14,579,647

Table 5A-E1.1.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	-2,057
Wet Water Years	-47,609
Above Normal Water Years	-105,417
Below Normal Water Years	12,960
Dry Water Years	-23,266
Critical Water Years	177,401

Table 5A-E1.1.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E1.1.1.4-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2020)

Average	Annual Potential Production
Full Simulation Period	14,608,847
Wet Water Years	13,842,920
Above Normal Water Years	14,986,833
Below Normal Water Years	14,883,303
Dry Water Years	15,358,642
Critical Water Years	14,664,931

Table 5A-E1.1.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	16,876
Wet Water Years	-89,361
Above Normal Water Years	-94,432
Below Normal Water Years	89,202
Dry Water Years	-21,941
Critical Water Years	262,685

Table 5A-E1.1.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	-1%
Above Normal Water Years	-1%
Below Normal Water Years	1%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.1.5-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2020)

Average	Annual Potential Production
Full Simulation Period	14,596,478
Wet Water Years	13,916,039
Above Normal Water Years	14,957,180
Below Normal Water Years	14,783,867
Dry Water Years	15,365,057
Critical Water Years	14,598,309

Table 5A-E1.1.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	4,507
Wet Water Years	-16,242
Above Normal Water Years	-124,085
Below Normal Water Years	-10,234
Dry Water Years	-15,526
Critical Water Years	196,063

1 **Table 5A-E1.1.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production**
2 **(percentage), Alternative 5 (2020) minus Existing Condition**

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

3

E.1.2 Late Fall-Run Chinook Salmon Production

Table 5A-E1.1.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Existing Condition

Average	Annual Potential Production
Full Simulation Period	2,335,421
Wet Water Years	2,332,884
Above Normal Water Years	2,400,415
Below Normal Water Years	2,383,677
Dry Water Years	2,347,129
Critical Water Years	2,200,582

Table 5A-E1.1.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2020)

Average	Annual Potential Production
Full Simulation Period	2,341,711
Wet Water Years	2,328,868
Above Normal Water Years	2,392,666
Below Normal Water Years	2,371,810
Dry Water Years	2,360,295
Critical Water Years	2,260,663

Table 5A-E1.1.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	6,290
Wet Water Years	-4,016
Above Normal Water Years	-7,749
Below Normal Water Years	-11,867
Dry Water Years	13,166
Critical Water Years	60,081

Table 5A-E1.1.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	1%
Critical Water Years	3%

Table 5A-E1.1.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2020)

Average	Annual Potential Production
Full Simulation Period	2,338,103
Wet Water Years	2,320,606
Above Normal Water Years	2,389,754
Below Normal Water Years	2,375,842
Dry Water Years	2,354,660
Critical Water Years	2,256,789

Table 5A-E1.1.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	2,682
Wet Water Years	-12,278
Above Normal Water Years	-10,661
Below Normal Water Years	-7,835
Dry Water Years	7,531
Critical Water Years	56,207

Table 5A-E1.1.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	-1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	3%

Table 5A-E1.1.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2020)

Average	Annual Potential Production
Full Simulation Period	2,340,968
Wet Water Years	2,334,768
Above Normal Water Years	2,386,296
Below Normal Water Years	2,371,663
Dry Water Years	2,357,653
Critical Water Years	2,251,335

Table 5A-E1.1.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	5,547
Wet Water Years	1,884
Above Normal Water Years	-14,119
Below Normal Water Years	-12,014
Dry Water Years	10,524
Critical Water Years	50,753

Table 5A-E1.1.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	-1%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2020)

Average	Annual Potential Production
Full Simulation Period	2,347,373
Wet Water Years	2,339,798
Above Normal Water Years	2,401,542
Below Normal Water Years	2,383,541
Dry Water Years	2,351,334
Critical Water Years	2,259,685

Table 5A-E1.1.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	11,952
Wet Water Years	6,914
Above Normal Water Years	1,127
Below Normal Water Years	-136
Dry Water Years	4,205
Critical Water Years	59,103

Table 5A-E1.1.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	3%

Table 5A-E1.1.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2020)

Average	Annual Potential Production
Full Simulation Period	2,344,485
Wet Water Years	2,335,515
Above Normal Water Years	2,406,351
Below Normal Water Years	2,378,220
Dry Water Years	2,355,183
Critical Water Years	2,249,861

Table 5A-E1.1.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	9,064
Wet Water Years	2,631
Above Normal Water Years	5,936
Below Normal Water Years	-5,457
Dry Water Years	8,054
Critical Water Years	49,279

Table 5A-E1.1.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

E.1.3 Spring-Run Chinook Salmon Production

Table 5A-E1.1.3.1-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Existing Condition

Average	Annual Potential Production
Full Simulation Period	436,619
Wet Water Years	439,748
Above Normal Water Years	456,379
Below Normal Water Years	438,431
Dry Water Years	461,209
Critical Water Years	383,439

Table 5A-E1.1.3.1-B. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2020)

Average	Annual Potential Production
Full Simulation Period	436,531
Wet Water Years	439,674
Above Normal Water Years	447,087
Below Normal Water Years	438,312
Dry Water Years	460,636
Critical Water Years	391,154

Table 5A-E1.1.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	-88
Wet Water Years	-74
Above Normal Water Years	-9,292
Below Normal Water Years	-119
Dry Water Years	-573
Critical Water Years	7,715

Table 5A-E1.1.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-2%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.3.2-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2020)

Average	Annual Potential Production
Full Simulation Period	436,863
Wet Water Years	439,575
Above Normal Water Years	444,434
Below Normal Water Years	438,155
Dry Water Years	460,720
Critical Water Years	395,803

Table 5A-E1.1.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	244
Wet Water Years	-173
Above Normal Water Years	-11,945
Below Normal Water Years	-276
Dry Water Years	-489
Critical Water Years	12,364

Table 5A-E1.1.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-3%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	3%

Table 5A-E1.1.3.3-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2020)

Average	Annual Potential Production
Full Simulation Period	434,934
Wet Water Years	439,662
Above Normal Water Years	442,158
Below Normal Water Years	438,216
Dry Water Years	460,324
Critical Water Years	384,952

Table 5A-E1.1.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	-1,685
Wet Water Years	-86
Above Normal Water Years	-14,221
Below Normal Water Years	-215
Dry Water Years	-885
Critical Water Years	1,513

Table 5A-E1.1.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-3%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	0%

Table 5A-E1.1.3.4-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2020)

Average	Annual Potential Production
Full Simulation Period	436,535
Wet Water Years	439,572
Above Normal Water Years	444,229
Below Normal Water Years	437,994
Dry Water Years	460,997
Critical Water Years	393,733

Table 5A-E1.1.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	-84
Wet Water Years	-176
Above Normal Water Years	-12,150
Below Normal Water Years	-437
Dry Water Years	-212
Critical Water Years	10,294

Table 5A-E1.1.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-3%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	3%

Table 5A-E1.1.3.5-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2020)

Average	Annual Potential Production
Full Simulation Period	434,828
Wet Water Years	439,679
Above Normal Water Years	441,766
Below Normal Water Years	438,302
Dry Water Years	459,710
Critical Water Years	385,086

Table 5A-E1.1.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	-1,791
Wet Water Years	-69
Above Normal Water Years	-14,613
Below Normal Water Years	-129
Dry Water Years	-1,499
Critical Water Years	1,647

Table 5A-E1.1.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-3%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	0%

E.1.4 Winter-Run Chinook Salmon Production

Table 5A-E1.1.4.1-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Existing Condition

Average	Annual Potential Production
Full Simulation Period	1,571,148
Wet Water Years	1,578,050
Above Normal Water Years	1,630,780
Below Normal Water Years	1,576,312
Dry Water Years	1,628,736
Critical Water Years	1,435,578

Table 5A-E1.1.4.1-B. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2020)

Average	Annual Potential Production
Full Simulation Period	1,577,338
Wet Water Years	1,576,590
Above Normal Water Years	1,626,675
Below Normal Water Years	1,577,751
Dry Water Years	1,620,872
Critical Water Years	1,489,777

Table 5A-E1.1.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	6,190
Wet Water Years	-1,460
Above Normal Water Years	-4,105
Below Normal Water Years	1,439
Dry Water Years	-7,864
Critical Water Years	54,199

Table 5A-E1.1.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	4%

Table 5A-E1.1.4.2-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2020)

Average	Annual Potential Production
Full Simulation Period	1,579,486
Wet Water Years	1,575,996
Above Normal Water Years	1,620,935
Below Normal Water Years	1,575,258
Dry Water Years	1,631,694
Critical Water Years	1,501,375

Table 5A-E1.1.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	8,338
Wet Water Years	-2,054
Above Normal Water Years	-9,845
Below Normal Water Years	-1,054
Dry Water Years	2,958
Critical Water Years	65,797

Table 5A-E1.1.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	5%

Table 5A-E1.1.4.3-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2020)

Average	Annual Potential Production
Full Simulation Period	1,573,520
Wet Water Years	1,576,514
Above Normal Water Years	1,622,197
Below Normal Water Years	1,570,296
Dry Water Years	1,630,634
Critical Water Years	1,468,653

Table 5A-E1.1.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	2,372
Wet Water Years	-1,536
Above Normal Water Years	-8,583
Below Normal Water Years	-6,016
Dry Water Years	1,898
Critical Water Years	33,075

Table 5A-E1.1.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E1.1.4.4-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2020)

Average	Annual Potential Production
Full Simulation Period	1,579,412
Wet Water Years	1,576,896
Above Normal Water Years	1,624,633
Below Normal Water Years	1,578,840
Dry Water Years	1,633,613
Critical Water Years	1,488,228

Table 5A-E1.1.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	8,264
Wet Water Years	-1,154
Above Normal Water Years	-6,147
Below Normal Water Years	2,528
Dry Water Years	4,877
Critical Water Years	52,650

Table 5A-E1.1.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	4%

Table 5A-E1.1.4.5-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2020)

Average	Annual Potential Production
Full Simulation Period	1,573,870
Wet Water Years	1,579,057
Above Normal Water Years	1,622,715
Below Normal Water Years	1,569,448
Dry Water Years	1,629,954
Critical Water Years	1,467,230

Table 5A-E1.1.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	2,722
Wet Water Years	1,007
Above Normal Water Years	-8,065
Below Normal Water Years	-6,864
Dry Water Years	1,218
Critical Water Years	31,652

Table 5A-E1.1.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2020) minus Existing Condition

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

- 1 **E.2 Mortality Results**
- 2 **E.2.1 Fall-Run Chinook Salmon Mortality**

1 **Table 5A-E1.2.1.1-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,304,410	973,312	46,277	3,926,073	6,250,072
Wet Water Years	721,363	2,068,695	45,258	4,211,737	7,047,053
Above Normal Water Years	174,205	273,293	42,263	4,401,906	4,891,668
Below Normal Water Years	1,628,571	461,487	33,481	3,854,083	5,977,622
Dry Water Years	87,839	542,631	51,342	3,825,390	4,507,201
Critical Water Years	4,322,784	472,579	65,938	3,168,260	8,029,560

2 **Table 5A-E1.2.1.1-B. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,204,810	975,727	46,067	3,930,198	6,156,803
Wet Water Years	921,655	2,070,294	44,926	4,191,262	7,228,137
Above Normal Water Years	407,957	269,355	43,078	4,325,630	5,046,021
Below Normal Water Years	1,439,688	482,255	32,778	3,844,050	5,798,771
Dry Water Years	97,988	521,304	51,702	3,881,573	4,552,567
Critical Water Years	3,333,515	480,029	65,306	3,251,026	7,129,876

3

Table 5A-E1.2.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-99,600	2,415	-210	4,125	-93,269
Wet Water Years	200,292	1,599	-332	-20,475	181,084
Above Normal Water Years	233,752	-3,938	815	-76,276	154,353
Below Normal Water Years	-188,883	20,768	-703	-10,033	-178,851
Dry Water Years	10,149	-21,327	360	56,183	45,366
Critical Water Years	-989,269	7,450	-632	82,766	-899,684

Table 5A-E1.2.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-8%	0%	0%	0%	-1%
Wet Water Years	28%	0%	-1%	0%	3%
Above Normal Water Years	134%	-1%	2%	-2%	3%
Below Normal Water Years	-12%	5%	-2%	0%	-3%
Dry Water Years	12%	-4%	1%	1%	1%
Critical Water Years	-23%	2%	-1%	3%	-11%

1 **Table 5A-E1.2.1.2-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,192,268	974,825	45,922	3,977,650	6,190,664
Wet Water Years	991,367	2,065,101	44,426	4,214,010	7,314,904
Above Normal Water Years	458,985	270,662	43,836	4,355,284	5,128,768
Below Normal Water Years	1,275,212	486,801	33,131	3,927,013	5,722,157
Dry Water Years	95,798	513,544	51,018	3,900,576	4,560,936
Critical Water Years	3,321,685	485,862	65,045	3,342,109	7,214,701

2 **Table 5A-E1.2.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-112,142	1,513	-355	51,577	-59,408
Wet Water Years	270,004	-3,594	-832	2,273	267,851
Above Normal Water Years	284,780	-2,631	1,573	-46,622	237,100
Below Normal Water Years	-353,359	25,314	-350	72,930	-255,465
Dry Water Years	7,959	-29,087	-324	75,186	53,735
Critical Water Years	-1,001,099	13,283	-893	173,849	-814,859

4
5

1 **Table 5A-E1.2.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2020) minus**
2 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-9%	0%	-1%	1%	-1%
Wet Water Years	37%	0%	-2%	0%	4%
Above Normal Water Years	163%	-1%	4%	-1%	5%
Below Normal Water Years	-22%	5%	-1%	2%	-4%
Dry Water Years	9%	-5%	-1%	2%	1%
Critical Water Years	-23%	3%	-1%	5%	-10%

3 **Table 5A-E1.2.1.3-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,279,010	980,945	45,658	3,941,346	6,246,960
Wet Water Years	898,635	2,071,835	44,669	4,193,662	7,208,802
Above Normal Water Years	498,885	305,613	39,096	4,364,271	5,207,864
Below Normal Water Years	1,525,543	484,484	33,341	3,874,723	5,918,091
Dry Water Years	98,602	527,213	50,799	3,875,228	4,551,843
Critical Water Years	3,668,682	472,644	66,416	3,248,629	7,456,371

4

1 **Table 5A-E1.2.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2020) minus**
2 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-25,400	7,633	-619	15,273	-3,112
Wet Water Years	177,272	3,140	-589	-18,075	161,749
Above Normal Water Years	324,680	32,320	-3,167	-37,635	316,196
Below Normal Water Years	-103,028	22,997	-140	20,640	-59,531
Dry Water Years	10,763	-15,418	-543	49,838	44,642
Critical Water Years	-654,102	65	478	80,369	-573,189

3 **Table 5A-E1.2.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-2%	1%	-1%	0%	0%
Wet Water Years	25%	0%	-1%	0%	2%
Above Normal Water Years	186%	12%	-7%	-1%	6%
Below Normal Water Years	-6%	5%	0%	1%	-1%
Dry Water Years	12%	-3%	-1%	1%	1%
Critical Water Years	-15%	0%	1%	3%	-7%

5

1 **Table 5A-E1.2.1.4-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,183,744	975,580	45,436	3,967,855	6,172,614
Wet Water Years	981,905	2,068,533	44,538	4,218,640	7,313,616
Above Normal Water Years	465,972	274,116	38,942	4,401,550	5,180,581
Below Normal Water Years	1,303,118	484,975	33,520	3,870,805	5,692,419
Dry Water Years	91,109	516,827	50,766	3,884,132	4,542,835
Critical Water Years	3,241,354	479,929	65,093	3,337,886	7,124,263

2 **Table 5A-E1.2.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-120,666	2,268	-841	41,782	-77,458
Wet Water Years	260,542	-162	-720	6,903	266,563
Above Normal Water Years	291,767	823	-3,321	-356	288,913
Below Normal Water Years	-325,453	23,488	39	16,722	-285,203
Dry Water Years	3,270	-25,804	-576	58,742	35,634
Critical Water Years	-1,081,430	7,350	-845	169,626	-905,297

4

1 **Table 5A-E1.2.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2020) minus**
2 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-9%	0%	-2%	1%	-1%
Wet Water Years	36%	0%	-2%	0%	4%
Above Normal Water Years	167%	0%	-8%	0%	6%
Below Normal Water Years	-20%	5%	0%	0%	-5%
Dry Water Years	4%	-5%	-1%	2%	1%
Critical Water Years	-25%	2%	-1%	5%	-11%

3 **Table 5A-E1.2.1.5-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	1,252,445	980,133	45,729	3,944,847	6,223,154
Wet Water Years	793,632	2,073,110	44,712	4,198,551	7,110,005
Above Normal Water Years	502,261	305,477	39,115	4,400,095	5,246,949
Below Normal Water Years	1,547,650	484,213	33,389	3,897,802	5,963,053
Dry Water Years	106,819	527,182	50,696	3,859,288	4,543,986
Critical Water Years	3,670,440	465,087	66,820	3,215,211	7,417,557

4

1 **Table 5A-E1.2.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2020) minus**
2 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-51,965	6,821	-548	18,774	-26,918
Wet Water Years	72,269	4,415	-546	-13,186	62,952
Above Normal Water Years	328,056	32,184	-3,148	-1,811	355,281
Below Normal Water Years	-80,921	22,726	-92	43,719	-14,569
Dry Water Years	18,980	-15,449	-646	33,898	36,785
Critical Water Years	-652,344	-7,492	882	46,951	-612,003

3 **Table 5A-E1.2.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-4%	1%	-1%	0%	0%
Wet Water Years	10%	0%	-1%	0%	1%
Above Normal Water Years	188%	12%	-7%	0%	7%
Below Normal Water Years	-5%	5%	0%	1%	0%
Dry Water Years	22%	-3%	-1%	1%	1%
Critical Water Years	-15%	-2%	1%	1%	-8%

5

1 E.2.2 Late Fall-Run Chinook Salmon Mortality

1 **Table 5A-E1.2.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	205,930	133,192	20,661	1,353,040	1,712,823
Wet Water Years	137,560	354,086	654	1,229,127	1,721,427
Above Normal Water Years	238,157	34,350	471	1,330,570	1,603,547
Below Normal Water Years	225,773	29,730	1,218	1,418,633	1,675,355
Dry Water Years	320,570	19,873	1,416	1,438,114	1,779,973
Critical Water Years	150,204	20,084	130,472	1,339,277	1,640,035

2 **Table 5A-E1.2.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	202,959	133,600	14,470	1,353,333	1,704,362
Wet Water Years	135,057	353,708	658	1,238,098	1,727,521
Above Normal Water Years	238,754	35,399	489	1,337,122	1,611,763
Below Normal Water Years	227,759	30,801	1,494	1,437,406	1,697,460
Dry Water Years	318,464	20,827	1,386	1,414,297	1,754,974
Critical Water Years	134,864	19,982	89,363	1,314,545	1,558,754

3

1 **Table 5A-E1.2.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b**
2 **(2020) minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2,971	408	-6,191	293	-8,461
Wet Water Years	-2,503	-378	4	8,971	6,094
Above Normal Water Years	597	1,049	18	6,552	8,216
Below Normal Water Years	1,986	1,071	276	18,773	22,105
Dry Water Years	-2,106	954	-30	-23,817	-24,999
Critical Water Years	-15,340	-102	-41,109	-24,732	-81,281

3 **Table 5A-E1.2.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2020)**
4 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-1%	0%	-30%	0%	0%
Wet Water Years	-2%	0%	1%	1%	0%
Above Normal Water Years	0%	3%	4%	0%	1%
Below Normal Water Years	1%	4%	23%	1%	1%
Dry Water Years	-1%	5%	-2%	-2%	-1%
Critical Water Years	-10%	-1%	-32%	-2%	-5%

5

1 **Table 5A-E1.2.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	202,051	133,505	14,784	1,361,017	1,711,357
Wet Water Years	134,292	353,874	629	1,252,260	1,741,055
Above Normal Water Years	238,145	35,599	502	1,344,268	1,618,514
Below Normal Water Years	231,744	30,337	1,488	1,429,144	1,692,713
Dry Water Years	311,994	20,546	1,390	1,429,869	1,763,800
Critical Water Years	132,144	19,894	91,486	1,324,266	1,567,788

2 **Table 5A-E1.2.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-3,879	313	-5,877	7,977	-1,466
Wet Water Years	-3,268	-212	-25	23,133	19,628
Above Normal Water Years	-12	1,249	31	13,698	14,967
Below Normal Water Years	5,971	607	270	10,511	17,358
Dry Water Years	-8,576	673	-26	-8,245	-16,173
Critical Water Years	-18,060	-190	-38,986	-15,011	-72,247

4

1 **Table 5A-E1.2.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	0%	-28%	1%	0%
Wet Water Years	-2%	0%	-4%	2%	1%
Above Normal Water Years	0%	4%	7%	1%	1%
Below Normal Water Years	3%	2%	22%	1%	1%
Dry Water Years	-3%	3%	-2%	-1%	-1%
Critical Water Years	-12%	-1%	-30%	-1%	-4%

3 **Table 5A-E1.2.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	204,943	133,339	15,737	1,353,843	1,707,862
Wet Water Years	137,025	353,449	630	1,228,655	1,719,760
Above Normal Water Years	232,220	32,942	508	1,358,831	1,624,501
Below Normal Water Years	222,638	30,946	1,589	1,443,168	1,698,341
Dry Water Years	325,513	20,960	1,269	1,416,262	1,764,004
Critical Water Years	148,813	20,369	97,717	1,309,776	1,576,674

4

1 **Table 5A-E1.2.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-987	147	-4,924	803	-4,961
Wet Water Years	-535	-637	-24	-472	-1,667
Above Normal Water Years	-5,937	-1,408	37	28,261	20,954
Below Normal Water Years	-3,135	1,216	371	24,535	22,986
Dry Water Years	4,943	1,087	-147	-21,852	-15,969
Critical Water Years	-1,391	285	-32,755	-29,501	-63,361

3 **Table 5A-E1.2.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2020)**
4 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	0%	0%	-24%	0%	0%
Wet Water Years	0%	0%	-4%	0%	0%
Above Normal Water Years	-2%	-4%	8%	2%	1%
Below Normal Water Years	-1%	4%	30%	2%	1%
Dry Water Years	2%	5%	-10%	-2%	-1%
Critical Water Years	-1%	1%	-25%	-2%	-4%

5

1 **Table 5A-E1.2.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	201,076	132,992	14,206	1,346,936	1,695,210
Wet Water Years	136,324	353,380	623	1,219,996	1,710,323
Above Normal Water Years	234,077	34,113	505	1,332,507	1,601,202
Below Normal Water Years	217,520	28,797	1,559	1,425,776	1,673,652
Dry Water Years	317,019	21,126	1,361	1,429,513	1,769,019
Critical Water Years	141,193	20,506	87,614	1,315,815	1,565,128

2 **Table 5A-E1.2.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a**
3 **(2020) minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-4,854	-200	-6,455	-6,104	-17,613
Wet Water Years	-1,236	-706	-31	-9,131	-11,104
Above Normal Water Years	-4,080	-237	34	1,937	-2,345
Below Normal Water Years	-8,253	-933	341	7,143	-1,703
Dry Water Years	-3,551	1,253	-55	-8,601	-10,954
Critical Water Years	-9,011	422	-42,858	-23,462	-74,907

4

1 **Table 5A-E1.2.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-2%	0%	-31%	0%	-1%
Wet Water Years	-1%	0%	-5%	-1%	-1%
Above Normal Water Years	-2%	-1%	7%	0%	0%
Below Normal Water Years	-4%	-3%	28%	1%	0%
Dry Water Years	-1%	6%	-4%	-1%	-1%
Critical Water Years	-6%	2%	-33%	-2%	-5%

3 **Table 5A-E1.2.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	205,305	133,349	15,274	1,349,231	1,703,159
Wet Water Years	137,301	353,413	630	1,227,315	1,718,659
Above Normal Water Years	232,295	32,947	509	1,328,561	1,594,311
Below Normal Water Years	223,114	30,956	1,587	1,431,595	1,687,252
Dry Water Years	326,575	20,960	1,262	1,419,085	1,767,881
Critical Water Years	148,574	20,496	94,686	1,321,088	1,584,844

4

1 **Table 5A-E1.2.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-625	157	-5,387	-3,809	-9,664
Wet Water Years	-259	-673	-24	-1,812	-2,768
Above Normal Water Years	-5,862	-1,403	38	-2,009	-9,236
Below Normal Water Years	-2,659	1,226	369	12,962	11,897
Dry Water Years	6,005	1,087	-154	-19,029	-12,092
Critical Water Years	-1,630	412	-35,786	-18,189	-55,191

3 **Table 5A-E1.2.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	0%	0%	-26%	0%	-1%
Wet Water Years	0%	0%	-4%	0%	0%
Above Normal Water Years	-2%	-4%	8%	0%	-1%
Below Normal Water Years	-1%	4%	30%	1%	1%
Dry Water Years	2%	5%	-11%	-1%	-1%
Critical Water Years	-1%	2%	-27%	-1%	-3%

5

1 E.2.3 Spring-Run Chinook Salmon Mortality

1 **Table 5A-E1.2.3.1-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	64,047	6,128	48	2,041	72,264
Wet Water Years	4,467	2,907	10	2,138	9,522
Above Normal Water Years	702	7,659	47	2,405	10,813
Below Normal Water Years	5,457	6,062	41	2,307	13,868
Dry Water Years	6,053	12,550	85	1,899	20,587
Critical Water Years	430,543	4,354	102	1,208	436,207

2 **Table 5A-E1.2.3.1-B. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	63,427	6,214	44	2,067	71,752
Wet Water Years	4,484	3,081	10	2,147	9,721
Above Normal Water Years	664	6,942	49	2,491	10,145
Below Normal Water Years	6,966	7,138	29	2,229	16,362
Dry Water Years	6,138	11,853	81	2,024	20,096
Critical Water Years	423,444	4,265	100	1,274	429,083

3

Table 5A-E1.2.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020) minus Existing Condition

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-620	86	-4	26	-512
Wet Water Years	17	174	0	9	199
Above Normal Water Years	-38	-717	2	86	-668
Below Normal Water Years	1,509	1,076	-12	-78	2,494
Dry Water Years	85	-697	-4	125	-491
Critical Water Years	-7,099	-89	-2	66	-7,124

Table 5A-E1.2.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2020) minus Existing Condition

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-1%	1%	-8%	1%	-1%
Wet Water Years	0%	6%	0%	0%	2%
Above Normal Water Years	-5%	-9%	4%	4%	-6%
Below Normal Water Years	28%	18%	-29%	-3%	18%
Dry Water Years	1%	-6%	-5%	7%	-2%
Critical Water Years	-2%	-2%	-2%	5%	-2%

1 **Table 5A-E1.2.3.2-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	62,504	6,206	44	2,039	70,793
Wet Water Years	4,448	3,103	8	2,099	9,658
Above Normal Water Years	681	7,068	50	2,436	10,235
Below Normal Water Years	6,672	6,754	28	2,260	15,714
Dry Water Years	6,279	12,107	85	2,029	20,500
Critical Water Years	417,228	4,383	100	1,172	422,882

2 **Table 5A-E1.2.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-1,543	78	-4	-2	-1,471
Wet Water Years	-19	196	-2	-39	136
Above Normal Water Years	-21	-591	3	31	-578
Below Normal Water Years	1,215	692	-13	-47	1,846
Dry Water Years	226	-443	0	130	-87
Critical Water Years	-13,315	29	-2	-36	-13,325

4

1 **Table 5A-E1.2.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	1%	-8%	0%	-2%
Wet Water Years	0%	7%	-20%	-2%	1%
Above Normal Water Years	-3%	-8%	6%	1%	-5%
Below Normal Water Years	22%	11%	-32%	-2%	13%
Dry Water Years	4%	-4%	0%	7%	0%
Critical Water Years	-3%	1%	-2%	-3%	-3%

3 **Table 5A-E1.2.3.3-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	66,946	6,330	44	2,045	75,366
Wet Water Years	4,454	3,099	10	2,139	9,702
Above Normal Water Years	655	7,257	46	2,430	10,388
Below Normal Water Years	6,529	7,336	28	2,263	16,156
Dry Water Years	6,105	12,239	85	2,002	20,431
Critical Water Years	449,478	3,959	100	1,157	454,693

4

1 **Table 5A-E1.2.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,899	202	-4	4	3,102
Wet Water Years	-13	192	0	1	180
Above Normal Water Years	-47	-402	-1	25	-425
Below Normal Water Years	1,072	1,274	-13	-44	2,288
Dry Water Years	52	-311	0	103	-156
Critical Water Years	18,935	-395	-2	-51	18,486

3 **Table 5A-E1.2.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	5%	3%	-8%	0%	4%
Wet Water Years	0%	7%	0%	0%	2%
Above Normal Water Years	-7%	-5%	-2%	1%	-4%
Below Normal Water Years	20%	21%	-32%	-2%	16%
Dry Water Years	1%	-2%	0%	5%	-1%
Critical Water Years	4%	-9%	-2%	-4%	4%

5

1 **Table 5A-E1.2.3.4-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	62,879	6,348	43	2,027	71,298
Wet Water Years	4,442	3,255	10	2,134	9,841
Above Normal Water Years	641	7,326	44	2,435	10,446
Below Normal Water Years	6,579	7,107	24	2,222	15,932
Dry Water Years	5,798	12,080	84	1,931	19,893
Critical Water Years	420,715	4,248	100	1,195	426,258

2 **Table 5A-E1.2.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-1,168	220	-5	-14	-966
Wet Water Years	-25	348	0	-4	319
Above Normal Water Years	-61	-333	-3	30	-367
Below Normal Water Years	1,122	1,045	-17	-85	2,064
Dry Water Years	-255	-470	-1	32	-694
Critical Water Years	-9,828	-106	-2	-13	-9,949

4

1 **Table 5A-E1.2.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-2%	4%	-10%	-1%	-1%
Wet Water Years	-1%	12%	0%	0%	3%
Above Normal Water Years	-9%	-4%	-6%	1%	-3%
Below Normal Water Years	21%	17%	-41%	-4%	15%
Dry Water Years	-4%	-4%	-1%	2%	-3%
Critical Water Years	-2%	-2%	-2%	-1%	-2%

3 **Table 5A-E1.2.3.5-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	67,139	6,327	44	2,025	75,535
Wet Water Years	4,457	3,106	10	2,118	9,692
Above Normal Water Years	654	7,257	47	2,418	10,376
Below Normal Water Years	6,471	7,340	28	2,238	16,077
Dry Water Years	6,112	12,225	86	1,994	20,416
Critical Water Years	450,937	3,930	98	1,123	456,088

4

1 **Table 5A-E1.2.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	3,092	199	-4	-16	3,271
Wet Water Years	-10	199	0	-20	170
Above Normal Water Years	-48	-402	0	13	-437
Below Normal Water Years	1,014	1,278	-13	-69	2,209
Dry Water Years	59	-325	1	95	-171
Critical Water Years	20,394	-424	-4	-85	19,881

3 **Table 5A-E1.2.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	5%	3%	-8%	-1%	5%
Wet Water Years	0%	7%	0%	-1%	2%
Above Normal Water Years	-7%	-5%	0%	1%	-4%
Below Normal Water Years	19%	21%	-32%	-3%	16%
Dry Water Years	1%	-3%	1%	5%	-1%
Critical Water Years	5%	-10%	-4%	-7%	5%

5

1 E.2.4 Winter-Run Chinook Salmon Mortality

1 **Table 5A-E1.2.4.1-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	287,405	290,076	2,024	82,605	662,110
Wet Water Years	153,840	177,523	0	106,091	437,454
Above Normal Water Years	166,950	216,121	0	92,689	475,760
Below Normal Water Years	163,284	376,323	0	77,049	616,655
Dry Water Years	169,986	409,596	0	65,155	644,736
Critical Water Years	1,061,389	325,025	14,478	49,980	1,450,872

2 **Table 5A-E1.2.4.1-B. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	266,084	300,260	2,641	80,686	649,671
Wet Water Years	153,323	172,745	0	104,987	431,055
Above Normal Water Years	163,930	222,401	0	96,266	482,597
Below Normal Water Years	158,563	409,440	0	71,854	639,857
Dry Water Years	169,628	415,441	0	62,592	647,660
Critical Water Years	921,270	339,872	18,893	47,442	1,327,476

3

1 **Table 5A-E1.2.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-21,321	10,184	617	-1,919	-12,439
Wet Water Years	-517	-4,778	0	-1,104	-6,399
Above Normal Water Years	-3,020	6,280	0	3,577	6,837
Below Normal Water Years	-4,721	33,117	0	-5,195	23,202
Dry Water Years	-358	5,845	0	-2,563	2,924
Critical Water Years	-140,119	14,847	4,415	-2,538	-123,396

3 **Table 5A-E1.2.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2020)**
4 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-7%	4%	30%	-2%	-2%
Wet Water Years	0%	-3%	0%	-1%	-1%
Above Normal Water Years	-2%	3%	0%	4%	1%
Below Normal Water Years	-3%	9%	0%	-7%	4%
Dry Water Years	0%	1%	0%	-4%	0%
Critical Water Years	-13%	5%	30%	-5%	-9%

5

1 **Table 5A-E1.2.4.2-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	266,120	295,389	2,508	81,458	645,476
Wet Water Years	153,733	171,551	0	106,776	432,061
Above Normal Water Years	164,694	230,481	0	90,040	485,215
Below Normal Water Years	160,424	389,004	0	73,499	622,927
Dry Water Years	169,650	415,569	0	61,736	646,956
Critical Water Years	916,703	334,740	17,944	52,853	1,322,241

2 **Table 5A-E1.2.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-21,285	5,313	484	-1,147	-16,634
Wet Water Years	-107	-5,972	0	685	-5,393
Above Normal Water Years	-2,256	14,360	0	-2,649	9,455
Below Normal Water Years	-2,860	12,681	0	-3,550	6,272
Dry Water Years	-336	5,973	0	-3,419	2,220
Critical Water Years	-144,686	9,715	3,466	2,873	-128,631

4

1 **Table 5A-E1.2.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-7%	2%	24%	-1%	-3%
Wet Water Years	0%	-3%	0%	1%	-1%
Above Normal Water Years	-1%	7%	0%	-3%	2%
Below Normal Water Years	-2%	3%	0%	-5%	1%
Dry Water Years	0%	1%	0%	-5%	0%
Critical Water Years	-14%	3%	24%	6%	-9%

3 **Table 5A-E1.2.4.3-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	275,457	296,524	2,586	81,785	656,352
Wet Water Years	153,420	171,732	0	104,250	429,402
Above Normal Water Years	165,214	226,076	0	95,813	487,103
Below Normal Water Years	158,434	388,378	0	76,226	623,038
Dry Water Years	170,733	423,073	0	64,296	658,102
Critical Water Years	985,773	338,337	18,500	47,927	1,390,537

4

1 **Table 5A-E1.2.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-11,948	6,448	562	-820	-5,758
Wet Water Years	-420	-5,791	0	-1,841	-8,052
Above Normal Water Years	-1,736	9,955	0	3,124	11,343
Below Normal Water Years	-4,850	12,055	0	-823	6,383
Dry Water Years	747	13,477	0	-859	13,366
Critical Water Years	-75,616	13,312	4,022	-2,053	-60,335

3 **Table 5A-E1.2.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-4%	2%	28%	-1%	-1%
Wet Water Years	0%	-3%	0%	-2%	-2%
Above Normal Water Years	-1%	5%	0%	3%	2%
Below Normal Water Years	-3%	3%	0%	-1%	1%
Dry Water Years	0%	3%	0%	-1%	2%
Critical Water Years	-7%	4%	28%	-4%	-4%

5

1 **Table 5A-E1.2.4.4-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	263,518	295,313	2,554	82,550	643,935
Wet Water Years	153,519	169,487	0	105,093	428,099
Above Normal Water Years	164,959	217,079	0	96,551	478,589
Below Normal Water Years	158,966	394,607	0	74,930	628,503
Dry Water Years	170,844	412,880	0	68,459	652,184
Critical Water Years	899,336	345,162	18,270	47,841	1,310,609

2 **Table 5A-E1.2.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2020)**
3 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-23,887	5,237	530	-55	-18,175
Wet Water Years	-321	-8,036	0	-998	-9,355
Above Normal Water Years	-1,991	958	0	3,862	2,829
Below Normal Water Years	-4,318	18,284	0	-2,119	11,848
Dry Water Years	858	3,284	0	3,304	7,448
Critical Water Years	-162,053	20,137	3,792	-2,139	-140,263

4

1 **Table 5A-E1.2.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-8%	2%	26%	0%	-3%
Wet Water Years	0%	-5%	0%	-1%	-2%
Above Normal Water Years	-1%	0%	0%	4%	1%
Below Normal Water Years	-3%	5%	0%	-3%	2%
Dry Water Years	1%	1%	0%	5%	1%
Critical Water Years	-15%	6%	26%	-4%	-10%

3 **Table 5A-E1.2.4.5-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2020)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	274,535	297,265	2,536	81,401	655,737
Wet Water Years	153,338	171,767	0	104,434	429,538
Above Normal Water Years	164,714	226,276	0	97,305	488,295
Below Normal Water Years	157,889	390,416	0	73,237	621,543
Dry Water Years	170,758	423,613	0	64,486	658,856
Critical Water Years	980,716	339,260	18,142	48,204	1,386,323

4

1 **Table 5A-E1.2.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2020)**
2 **minus Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-12,870	7,189	512	-1,204	-6,373
Wet Water Years	-502	-5,756	0	-1,657	-7,916
Above Normal Water Years	-2,236	10,155	0	4,616	12,535
Below Normal Water Years	-5,395	14,093	0	-3,812	4,888
Dry Water Years	772	14,017	0	-669	14,120
Critical Water Years	-80,673	14,235	3,664	-1,776	-64,549

3 **Table 5A-E1.2.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2020) minus**
4 **Existing Condition**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-4%	2%	25%	-1%	-1%
Wet Water Years	0%	-3%	0%	-2%	-2%
Above Normal Water Years	-1%	5%	0%	5%	3%
Below Normal Water Years	-3%	4%	0%	-5%	1%
Dry Water Years	0%	3%	0%	-1%	2%
Critical Water Years	-8%	4%	25%	-4%	-4%

5

1 **E.3 References**

- 2 State Water Resources Control Board. 1995. Water Quality Control Plan for the San Francisco
3 Bay/Sacramento-San Joaquin Delta Estuary. May 1995.