Contents

List of Tables ... x
List of Figures ... xlv
List of Acronyms and Abbreviations ... lx

Executive Summary ... ES-1
ES.1 Purpose of this Environmental Impact Report ... ES-2
ES.2 Project Background ... ES-3
ES.3 Summary of Proposed Project ... ES-6
ES.4 Summary of Environmental Consequences ... ES-9
ES.5 Summary of Findings ... ES-9
ES.6 Areas of Controversy ... ES-14
ES.7 Issues to be Resolved ... ES-14

Chapter 1 Introduction ... 1-1
1.1 Purpose of the Draft Environmental Impact Report ... 1-1
1.2 DEIR Preparation Process ... 1-1
1.2.1 Notice of Preparation and Scoping ... 1-2
1.2.2 Initial Study ... 1-2
1.2.3 DEIR ... 1-3
1.2.4 Final EIR and Certification ... 1-4
1.3 DEIR Organization ... 1-4

Chapter 2 Project Description ... 2-1
2.1 Introduction ... 2-1
2.1.1 Project Objectives ... 2-1
2.1.2 Project Location ... 2-2
2.1.3 Description of Existing Facilities Relevant to Proposed Project Operations ... 2-4
2.1.4 Description of Existing SWP Water Service Contracts ... 2-9
2.1.5 SWP Settlement Agreements ... 2-12
2.1.6 SWP Allocation and Forecasting ... 2-13
2.1.7 Daily Operations ... 2-13
2.2 Existing Regulations ... 2-15
2.2.1 U.S. Army Corps of Engineers Permits ... 2-15
2.2.2 State Water Resources Control Board Water Rights and D-1641 ... 2-15
2.2.3 Federal Endangered Species Act ... 2-15
2.2.4 California Endangered Species Act ... 2-16

2.3	Description of the Proposed Project	2-16
2.3.1	Seasonal Operations	2-19
2.3.2	Expansion of the CCF Increased Winter Diversion Window	2-20
2.3.3	Old and Middle River Flow Management	2-20
2.3.4	White Sturgeon Protection Measures	2-31
2.3.5	Spring Delta Outflow	2-31
2.3.6	Delta Smelt Summer-Fall Habitat	2-34
2.3.7	John E. Skinner Delta Fish Protective Facility	2-35
2.3.8	Habitat Restoration	2-36
2.3.9	Delta Smelt Supplementation	2-37
2.3.10	Longfin Smelt Culture Program	2-38
2.3.11	Water Transfers	2-39
2.3.12	Georgiana Slough Salmonid Migratory Barrier Operations	2-40
2.3.13	Agricultural Barriers	2-41
2.3.14	Barker Slough Pumping Plant	2-41
2.3.15	Clifton Court Forebay Weed Management	2-42
2.3.16	Suisun Marsh	2-43
2.3.17	Monitoring	2-43
2.3.18	Adaptive Management	2-45
2.3.19	Special Studies	2-46
2.3.20	Drought	2-52
2.3.21	Additional Actions Retained from 2020 ITP	2-53
2.3.22	Governance	2-54
Chapter 3	**Scope of Analysis**	**3-1**
3.1	Geographic Scope of the Analysis	3-1
3.2	Issues Eliminated from Detailed Consideration in the DEIR	3-1
3.3	Environmental Baseline	3-2
3.4	Impact of Climate Change	3-3
3.5	Approach to Modeling	3-3
3.5.1	CalSim 3	3-4
3.5.2	Delta Simulation Model II	3-4
3.5.3	Semi-Implicit Cross-Scale Hydroscience Integrated System Model	3-5
3.5.4	Biological Modeling	3-5
3.5.5	Appropriate Use of Modeling	3-7
Chapter 4	**Surface Water Hydrology**	**4-1**
4.1	Environmental Setting	4-1
4.1.1	Sacramento River	4-1

4.1.2 Sacramento and San Joaquin Bay-Delta 4-4
4.1.3 SWP and CVP Delta Water Facilities 4-6
4.1.4 Water Supplies Used by State Water Project Water Users 4-9
4.2 Regulatory Setting 4-11
4.3 Comparison of the Proposed Project with the Baseline Conditions....4-11
4.3.1 Thresholds of Significance 4-11
4.3.2 Method of Analysis 4-12
4.3.3 Comparison of Sacramento River Flows into Delta, Delta Outflow, and OMR Flow....4-12
4.3.4 Comparison of SWP Banks Pumping Plant Exports 4-18

Chapter 5 Surface Water Quality 5-1
5.1 Environmental Setting 5-1
5.1.1 Primary Factors Affecting Existing Water Quality....5-1
5.1.2 Beneficial Uses 5-2
5.1.3 Water Quality Impairments 5-3
5.1.4 Existing Surface Water Quality 5-5
5.2 Regulatory Setting 5-12
5.3 Impacts of the Proposed Project 5-12
5.3.1 Thresholds of Significance 5-13
5.3.2 Methods of Analysis....5-13
5.3.3 Evaluation of the Proposed Project 5-16

Chapter 6 Aquatic Biological Resources 6-1
6.1 Environmental Setting 6-1
6.1.1 Study Area....6-1
6.1.2 Fish and Aquatic Species of Management Concern 6-1
6.1.3 Habitat Conditions and Environmental Stressors....6-3
6.1.4 Delta and Suisun Bay/Marsh....6-3
6.1.5 San Pablo and San Francisco Bays 6-27
6.2 Regulatory Environment and Compliance Requirements 6-28
6.2.1 Federal Plans, Policies, and Regulations....6-28
6.2.2 State Plans, Policies, and Regulations....6-33
6.2.3 Regional and Local Plans, Policies, and Regulations....6-36
6.3 Threshold of Significance and Approach to Impact Assessment....6-36
6.3.1 Threshold of Significance....6-36
6.3.2 Operations Effects 6-37
6.3.3 Maintenance and Other Effects....6-38

6.4 Impacts of the Proposed Project 6-38
6.4.1 Delta Smelt 6-38
6.4.2 Longfin Smelt 6-89
6.4.3 Winter-Run Chinook Salmon 6-108
6.4.4 Spring-Run Chinook Salmon 6-164
6.4.5 Fall-Run and Late-Fall-Run Chinook Salmon 6-175
6.4.6 Central Valley Steelhead 6-195
6.4.7 North American Green Sturgeon 6-202
6.4.8 White Sturgeon 6-206
6.4.9 Pacific Lamprey and Western River Lamprey 6-213
6.4.10 Native Minnows (Sacramento Hitch, Sacramento Splittail, Hardhead, and Central California Roach) 6-217
6.4.11 Starry Flounder 6-222
6.4.12 Northern Anchovy 6-226
6.4.13 Striped Bass 6-228
6.4.14 American Shad 6-233
6.4.15 Threadfin Shad 6-237
6.4.16 Black Bass 6-240
6.4.17 California Bay Shrimp 6-244
6.4.18 Killer Whale 6-248
6.5 Mitigation Measures 6-248

Chapter 7 Tribal Cultural Resources 7-1

7.1 Environmental Setting 7-1
7.1.1 Methods for Resource Identification 7-2
7.1.2 Delta Tribal Cultural Landscape 7-8
7.1.3 Potential Tribal Cultural Resources 7-9
7.2 Regulatory Setting 7-9
7.2.1 California Environmental Quality Act 7-9
7.2.2 California Natural Resources Agency Tribal Consultation Policy 7-10
7.2.3 California Department of Water Resources Tribal Engagement Policy 7-10
7.3 Environmental Impacts 7-11
7.3.1 Impact Mechanisms for Tribal Cultural Resources 7-11
7.3.2 Thresholds of Significance 7-12
7.3.3 Impact Analysis 7-13

Chapter 8 Environmental Justice 8-1
8.1 Regulatory Setting 8-1
8.1.1 Federal 8-1
8.1.2 State 8-2
8.2 Background 8-3
8.2.1 Minority Populations 8-3
8.2.2 Poverty Levels 8-6
8.3 Environmental Impacts and Mitigation Measures 8-6
8.3.1 Thresholds of Significance 8-6
8.3.2 Impact Analysis 8-7
Chapter 9 Climate Change Resiliency and Adaptation 9-1
9.1 Introduction 9-1
9.1.1 Purpose 9-1
9.1.2 Organization 9-3
9.1.3 Climate Change Background 9-4
9.2 Affected Environment and Resources 9-5
9.2.1 Global Climate Change Trends 9-6
9.2.2 Climate Change Trends in California 9-8
9.2.3 Climate Change Trends and Associated Impacts on the Study Area 9-12
9.2.4 Application of California Climate Projections to Proposed Long-Term Operations Changes 9-19
9.3 Applicable Laws, Regulations, and Programs 9-20
9.4 Potential Climate Change Impacts on Baseline Operations and the Proposed Project 9-21
9.4.1 X2 9-22
9.4.2 State Water Project Exports 9-24
9.4.3 Old and Middle River Flows 9-27
9.4.4 Delta Outflow 9-30
9.4.5 San Joaquin River at Vernalis 9-33
9.4.6 Sacramento River at Freeport 9-37
9.5 Climate Change Resiliency and Adaptation Benefits 9-39
Chapter 10 Other CEQA Discussions 10-1
10.1 Cumulative Impacts 10-1
10.1.1 CEQA Requirements for Cumulative Assessment 10-1
10.1.2 Cumulative Context and Approach 10-2
10.1.3 Scope of Cumulative Analysis 10-3
10.1.4 Surface Water Hydrology 10-23

10.1.5 Surface Water Quality 10-23
10.1.6 Aquatic Biological Resources 10-25
10.1.7 Tribal Cultural Resources 10-153
10.1.8 Environmental Justice 10-154
10.1.9 Climate Change Resiliency and Adaptation 10-154
10.2 Growth-Inducing Impacts 10-154
10.2.1 Direct Impacts of the Proposed Project 10-155
10.2.2 Potential of the Proposed Project to Induce Growth 10-155

Chapter 11 Alternatives to the Proposed Project 11-1

11.1 Introduction 11-1
11.2 Range of Alternatives Considered 11-1
11.2.1 Alternatives Considered but Not Analyzed Further 11-2
11.2.2 Alternatives Considered in this Environmental Impact Report 11-7
11.3 No Project Alternative 11-7
11.3.1 Surface Water Hydrology 11-8
11.3.2 Surface Water Quality 11-8
11.3.3 Aquatic Biological Resources 11-8
11.3.4 Other Resources 11-8
11.4 Alternative 1: May Deployment of SWP-Facilitated Fallowing Inject and No Expansion of the CCF Increased Winter Diversion Window 11-8
11.4.1 Surface Water Hydrology 11-9
11.4.2 Surface Water Quality 11-16
11.4.3 Aquatic Biological Resources 11-20
11.4.4 Other Resources 11-44
11.5 Alternative 2: May Deployment of SWP-Facilitated Fallowing Inject and Expansion of the CCF Increased Winter Diversion Window 11-44
11.5.1 Surface Water Hydrology 11-45
11.5.2 Surface Water Quality 11-50
11.5.3 Aquatic Biological Resources 11-54
11.5.4 Other Resources 11-58
11.6 Alternative 3: Flexible Deployment of SWP-Facilitated Fallowing Inject and No Expansion of the CCF Increased Winter Diversion Window 11-58
11.6.1 Surface Water Hydrology 11-58
11.6.2 Surface Water Quality 11-65
11.6.3 Aquatic Biological Resources 11-70
11.6.4 Other Resources 11-76
11.7 Environmentally Superior Alternative 11-76

Chapter 12 References ... 12-1
12.1 Chapter 1, Introduction ... 12-1
12.2 Chapter 2, Project Description ... 12-1
12.3 Chapter 3, Scope of Analysis ... 12-3
12.4 Chapter 4, Surface Water Hydrology ... 12-4
12.5 Chapter 5, Surface Water Quality ... 12-4
12.6 Chapter 6, Aquatic Biological Resources ... 12-10
12.6.1 References Cited ... 12-10
12.6.2 Personal Communications ... 12-36
12.7 Chapter 7, Tribal Cultural Resources ... 12-37
12.8 Chapter 8, Environmental Justice ... 12-37
12.9 Chapter 9, Climate Change Resiliency ... 12-38
12.10 Chapter 10, Other CEQA Discussions ... 12-42
12.11 Chapter 11, Alternatives to the Proposed Project ... 12-46

Chapter 13 Preparers and Other Persons Consulted ... 13-1
13.1 California Department of Water Resources ... 13-1
13.2 ICF ... 13-1
13.3 Jacobs ... 13-2
13.4 Cramer Fish Sciences ... 13-2
13.5 Robertson Bryan Incorporated ... 13-3

Appendix 2A Project Description Elements
Attachment 1 John E. Skinner Delta Fish Protective Facility Standard Operating Procedures for Fish Salvage
Attachment 2 Tidal Habitat Restoration Administrative Process and Documentation Requirements
Attachment 3 South Delta Temporary Barriers Project Annual Construction and Operation Flow Chart for Calendar Years 2023–2027
Attachment 4 North Bay Aqueduct Fish Screen Sediment and Aquatic Weed Removal Standard Operating Procedures
Attachment 5 Clifton Court Forebay Aquatic Weed Management Standard Operating Procedures
Attachment 6 Drought Toolkit

Appendix 2B Adaptive Management Program
Attachment 1 Adaptive Management Program Framework and Implementation
Attachment 2 Adaptive Management Actions and Programs

Appendix 2C Winter-run Chinook Salmon Juvenile Production Estimates

Appendix 2D	**Geographic Scope of Project's Influence on Flow**
Attachment 1	Technical Memorandum: DRAFT Upstream Screening-Level Analysis for Fish and Aquatic Resources, Long-Term Operations of the State Water Project
Appendix 2E	**Delta Smelt Supplementation Strategy**
Appendix 2F	**Georgiana Slough Salmonid Migratory Barrier Operations Plan**
Appendix 3A	**Initial Study**
Appendix 4A	**Model Assumptions**
Attachment 1	Model Assumptions
Attachment 2	CalSim 3 Model Assumptions Callouts
Attachment 3	DSM2 Model Assumptions Callouts
Attachment 4	DSM2 PTM Documentation
Attachment 5	DSM2 ECO-PTM Documentation
Attachment 6	Scenario Related Changes to CalSim 3 and DSM2
Attachment 7	SWP Proportion
Attachment 8	Model Limitations
Attachment 9	Suisun Marsh Salinity Control Gate Operation Sensitivity Analysis
Appendix 4B	**Model Results**
Attachment 1	Storage and Elevation Results (CalSim 3)
Attachment 2	Flow Results (CalSim 3)
Attachment 3	Diversion Results (CalSim 3)
Attachment 4	X2 Results (CalSim 3)
Attachment 5	Stage Results (DSM2)
Attachment 6	Electrical Conductivity Results (DSM2)
Attachment 7	Chloride Results (DSM2)
Attachment 8	DSM2 Water Quality Compliance Results
Attachment 9	CalSim 3 Water Quality Compliance Results
Appendix 4C	**Alternatives Model Results**
Attachment 1	CalSim 3 Model Assumptions Callouts
Attachment 2	Storage and Elevation Results (CalSim 3)
Attachment 3	Flow Results (CalSim 3)
Attachment 4	Diversion Results (CalSim 3)
Attachment 5	X2 Results (CalSim 3)
Appendix 4D	**Climate Change Projections Development**
Appendix 4E	**Operations Sensitivity to Climate Change, Temporary Urgency Change Petitions, and the Interim Operating Plan**

Appendix 4F **Cumulative Model Results**
Attachment 1 CalSim 3 Model Assumptions Callouts
Attachment 2 Storage and Elevation Results (CalSim 3)
Attachment 3 Flow Results (CalSim 3)
Attachment 4 Diversion Results (CalSim 3)
Attachment 5 X2 Results (CalSim 3)

Appendix 4G **Cumulative Model Results**
Attachment 1 CalSim 3 Model Assumptions Callouts
Attachment 2 Storage and Elevation Results (CalSim 3)
Attachment 3 Flow Results (CalSim 3)
Attachment 4 Diversion Results (CalSim 3)
Attachment 5 X2 Results (CalSim 3)

Appendix 4H **Cumulative with Climate Change Model Results**
Attachment 1 Storage and Elevation Results (CalSim 3)
Attachment 2 Flow Results (CalSim 3)
Attachment 3 Diversion Results (CalSim 3)
Attachment 4 X2 Results (CalSim 3)

Appendix 4I **Operations Sensitivity to Drought Conditions**

Appendix 4J **Proposed Project and Alternative 1 Comparison**

Appendix 5A **Chloride**

Appendix 5B **Electrical Conductivity**

Appendix 6A **Environmental Setting Background Information**

Appendix 6B **Biological Modeling Methods and Selected Results**

Appendix 6C **SCHISM Model Results**

Appendix 7A **Tribal Consultation and Engagement Log**

Tables

Table 2-1. State Water Contractors 2-11

Table 2-2. SWP Settlement Agreements 2-12

Table 2-3.. Summary of Proposed Project Elements for which Take is Sought 2-17

Table 2-4. San Francisco Bay Study Longfin Smelt Index Catch Threshold 2-24

Table 2-5. Historical (Water Years 2017–2021) Presence of Winter-Run Chinook Salmon Entering the Delta (Column B), Exiting the Delta (Column C), in the Delta (Column D = Column B–Column C) and in the Delta Scaled to 100% (Column E) 2-27

Table 2-6. Water Made Available by the SWP Under the Voluntary Agreements During Each Water Year Type 2-32

Table 2-7. Tidal Habitat Restoration 2-37

Table 2-8. Proposed Annual North to South (out of basin) Water Transfer Volume 2-39

Table 5-1. Designated Beneficial Uses for Waterbodies in the Potential Environmental Impact Area 5-2

Table 5-2. Clean Water Act Section 303(d) Listed Pollutants and Sources in the Delta, Suisun Bay, and Suisun Marsh 5-4

Table 5-3. Clean Water Act Section 303(d) Listed Pollutants and Sources for San Francisco Bay 5-5

Table 5-4. Water Quality Objectives for Chloride in the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary for Municipal and Industrial Beneficial Uses (in milligrams per liter) 5-7

Table 5-5. Water Quality Objectives for Electrical Conductivity in the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary for Agricultural Beneficial Uses (in micromhos per centimeter) 5-7

Table 5-6. Water Quality Objectives for Electrical Conductivity in the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary for Fish and Wildlife Beneficial Uses (in micromhos per centimeter) 5-8

Table 5-7. Water Quality Objectives for Electrical Conductivity in the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary for Fish and Wildlife Beneficial Uses for Suisun Marsh (in millimhos per centimeter) 5-8

Table 5-8. Delta and Suisun Marsh Assessment Locations for Electrical Conductivity 5-14

Table 5-9. Delta Assessment Locations and Concentration Calculation Method for Chloride 5-14

Table 5-10. Monthly Average Electrical Conductivity (in micromhos per centimeter) at Delta Assessment Locations for the Full Simulation Period under the Proposed Project, and Difference from Baseline Conditions 5-17

Table 5-11. Percent of Days in Water Years 1922–2021 that Modeled Electrical Conductivity Exceeded the Agricultural Beneficial Uses Water Quality Objective, Baseline Conditions and the Proposed Project 5-21

Table 5-12. Percent of Days in Water Years 1922–2021 that Modeled Electrical Conductivity Exceeded the Fish and Wildlife Beneficial Uses Water Quality Objective, Baseline Conditions and the Proposed Project 5-21

Table 5-13. Monthly Average Chloride (in milligrams per liter) at Delta Assessment Locations for the Full Simulation Period under the Proposed Project and Difference from Baseline Conditions 5-22

Table 5-14. Percent of Days in Water Years 1922–2021 that Modeled Chloride Concentrations Exceeded the 250 Milligrams per Liter Municipal and Industrial Uses Water Quality Objective, Baseline Conditions and the Proposed Project 5-24

Table 5-15. Number of Years in Calendar Years 1922–2020 that Modeled Chloride Concentrations Exceeded the 150 Milligrams per Liter Chloride Objective for Contra Costa Pumping Plant #1, Baseline Conditions and the Proposed Project 5-24

Table 5-16. Monthly Average Electrical Conductivity (in micromhos per centimeter) at Suisun Marsh Assessment Locations for the Full Simulation Period under the Proposed Project and Difference from Baseline Conditions 5-29

Table 6-1. Fish and Aquatic Species of Management Concern Potentially Affected by the Proposed Project 6-2

Table 6-2. DWR and Reclamation Coordinated Monitoring Programs 6-21

Table 6-3. Experimental Releases of Delta Smelt, 2021–2024 6-21

Table 6-4. Percentage of Particles Entrained Over 30 Days into Clifton Court Forebay 6-44

Table 6-5. Percentage of Particles Entrained Over 30 Days into Barker Slough Pumping Plant 6-45

Table 6-6. Mean Predicted March–May Cladocerans (Except *Daphnia*) Catch per Cubic Meter in the Low Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-52

Table 6-7. Mean Predicted March–May *Eurytemora affinis* Adults Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-53

Table 6-8. Mean Predicted March–May Harpacticoid Copepods Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-54

Table 6-9. Mean Predicted March–May Other Calanoid Copepod Adults Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-55

Table 6-10. Mean Predicted March–May Other Calanoid Copepod Copepodites Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-56

Table 6-11. Mean Predicted September–November *Eurytemora affinis* Adults Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-61

Table 6-12. Mean Predicted September–November Mysids Catch per Cubic Meter in the Low-Salinity Zone under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-62

Table 6-13. Median, Percentage Difference (Proposed Action minus Baseline Conditions), and Proportion of Posterior Distribution with Proposed Action Less than Baseline Conditions in Population Growth Rate from Delta Smelt LCME Modeling 6-73

Table 6-14. Percentage of Years with X2 Less than 85 km (Low-Salinity Zone within Honker Bay), June–December 6-76

Table 6-15. Entrainment Loss of Adult Longfin Smelt in Relation to December Population Abundance 6-90

Table 6-16. Mean Percentage of Neutrally Buoyant Particles Entrained Over 90 Days into Clifton Court Forebay and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-92

Table 6-17. Mean Percentage of Neutrally Buoyant Particles Entrained Over 90 Days into Barker Slough Pumping Plant and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-92

Table 6-18. Mean Percentage of Neutrally Buoyant Particles Passing Chipps Island Over 90 Days and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-93

Table 6-19. Mean Percentage of Surface-Oriented Particles Entrained Over 90 Days into Clifton Court Forebay and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-93

Table 6-20. Mean Percentage of Surface-Oriented Particles Entrained Over 90 Days into Barker Slough Pumping Plant and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-94

Table 6-21. Mean Percentage of Surface-Oriented Particles Passing Chipps Island Over 90 Days and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-94

Table 6-22. Mean Annual Longfin Smelt April–May Salvage, from the Regression Including Mean Old and Middle River Flows (Grimaldo et al. 2009a) and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-95

Table 6-23. Juvenile Longfin Smelt: Estimated Entrainment Loss Relative to Population Size, SWP South Delta Export Facility, 1995–2015 6-97

Table 6-24. Mean Percentage of Neutrally Buoyant Particles Entering the South Delta (via Big Break, Dutch Slough, False River, Fishermans Cut, Mouth of Old River, Mouth of Middle River, Columbia Cut, or Turner Cut) and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-98

Table 6-25. Mean Percentage of Surface-Oriented Particles Entering the South Delta (via Big Break, Dutch Slough, False River, Fishermans Cut, Mouth of Old River, Mouth of Middle River, Columbia Cut, or Turner Cut) and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-98

Table 6-26. Mean Predicted Longfin Smelt Fall Midwater Trawl Index under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-102

Table 6-27. Mean Predicted Longfin Smelt Bay Midwater Trawl Age-0 Index under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-102

Table 6-28. Mean Predicted Longfin Smelt Bay Otter Trawl Age-0 Index under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-103

Table 6-29. Mean Probability of Lower Longfin Smelt Fall Midwater Trawl Index under the Proposed Project Modeling Scenario than under the Baseline Conditions Modeling Scenario, Grouped by Water Year Type 6-103

Table 6-30. Mean Probability of Lower Longfin Smelt Bay Midwater Trawl Age-0 Index under the Proposed Project Modeling Scenario than under the Baseline Conditions Modeling Scenario, Grouped by Water Year Type 6-103

Table 6-31. Mean Probability of Lower Longfin Smelt Bay Otter Trawl Age-0 Index under the Proposed Project Modeling Scenario than under the Baseline Conditions Modeling Scenario, Grouped by Water Year Type 6-104

Table 6-32. Mean Modeled December–May Delta Outflow under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-104

Table 6-33. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-118

Table 6-34. Mean Annual Proportion of Juvenile Winter-run Chinook Salmon Entering the Delta Salvaged at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), from the Salvage Analysis Based on Zeug and Cavallo (2014) 6-119

Table 6-35. Mean Daily Proportion of Flow Entering Delta Junctions by Month and Water Year Type 6-131

Table 6-36. Delta Passage Model: Mean Winter-Run Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-146

Table 6-37. STARS: Mean September Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-148

Table 6-38. STARS: Mean October Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-149

Table 6-39. STARS: Mean November Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-149

Table 6-40. STARS: Mean December Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-149

Table 6-41. STARS: Mean January Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-150

Table 6-42. STARS: Mean February Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-150

Table 6-43. STARS: Mean March Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-150

Table 6-44. STARS: Mean April Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-151

Table 6-45. STARS: Mean May Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-151

Table 6-46. STARS: Mean June Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-151

Table 6-47. STARS: Mean September Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type........6-152

Table 6-48. STARS: Mean October Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type 6-152

Table 6-49. STARS: Mean November Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption........6-152

Table 6-50. STARS: Mean December Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption........6-152

Table 6-51. STARS: Mean January Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption........6-153

Table 6-52. STARS: Mean February Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption........6-153

Table 6-53. STARS: Mean March Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-153

Table 6-54. STARS: Mean April Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-154

Table 6-55. STARS: Mean May Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-154

Table 6-56. STARS: Mean June Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project Being Less Than Baseline Conditions, Grouped by Water Year Type 6-154

Table 6-57. ECO-PTM: Mean September Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-156

Table 6-58. ECO-PTM: Mean October Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-156

Table 6-59. ECO-PTM: Mean November Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-156

Table 6-60. ECO-PTM: Mean December Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-157

Table 6-61. ECO-PTM: Mean January Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-157

Table 6-62. ECO-PTM: Mean February Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-157

Table 6-63. ECO-PTM: Mean March Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-158

Table 6-64. ECO-PTM: Mean April Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 6-158

Table 6-65. ECO-PTM: Mean May Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-158

Table 6-66. ECO-PTM: Mean June Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-159

Table 6-67. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-165

Table 6-68. Delta Passage Model: Mean Spring-Run Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-168

Table 6-69. Mean Predicted San Joaquin River Spring-Run Chinook Salmon Annual Proportional Through-Delta Survival under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-171

Table 6-70. Mean Predicted San Joaquin River Basin Fall-Run Chinook Salmon Adult Straying to the Sacramento River Basin under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-180

Table 6-71. Mean Number of Days of Delta Cross Channel Opening in October and November under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-182

Table 6-72. Mean Number of Fall-Run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method........ 6-184

Table 6-73. Mean Number of Late-Fall-Run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method........ 6-184

Table 6-74. Delta Passage Model: Mean Fall-Run Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption........ 6-186

Table 6-75. Delta Passage Model: Mean Late Fall-Run Chinook Salmon Smolt Survival Through the Delta under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 6-188

Table 6-76. Mean Predicted San Joaquin River Fall-Run Chinook Salmon Juvenile Annual Proportional Through-Delta Survival under the Proposed Project and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 6-190

Table 6-77. Mean Number of Steelhead Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-196

Table 6-78. Mean Number of Green Sturgeon Juveniles Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-202

Table 6-79. Mean Number of White Sturgeon Juveniles Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-207

Table 6-80. Mean Annual White Sturgeon Year Class Strength, from the Regression Including March–July Delta Outflow and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-208

Table 6-81. Mean Annual White Sturgeon Year Class Strength, from the Regression Including April–May Delta Outflow and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-209

Table 6-82. Mean Number of Lamprey Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-213

Table 6-83. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-217

Table 6-84. Mean Number of Hardhead Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-218

Table 6-85. Mean Number of Central California Roach Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-218

Table 6-86. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-218

Table 6-87. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-222

Table 6-88. Mean Annual Starry Flounder Age 1+ Bay Study Otter Trawl Abundance Index, from the Regression Including March–June Delta Outflow and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-223

Table 6-89. Mean Number of Striped Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-229

Table 6-90. Mean Annual Striped Bass Fall Midwater Trawl Abundance Index, from the Regression Including April–June Delta Outflow and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-229

Table 6-91. Mean Number of American Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-233

Table 6-92. Mean Annual American Shad Fall Midwater Trawl Abundance Index, from the Regression Including February–June Delta Outflow and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped By Water Year Type 6-234

Table 6-93. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-238

Table 6-94. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-241

Table 6-95. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-241

Table 6-96. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 6-242

Table 6-97. California Bay Shrimp Catch Per 1,000 Square Meters Sampled by San Francisco Bay Study Otter Trawl, 2003–2022 6-245

Table 8-1. Minority Population Distribution within the Project Area, 2022 8-5

Table 8-2. Population below Poverty Level within the Project Region, 2022 8-6

Table 9-1. Comparison of Climate Change Chapter to Other Resource Chapters 9-3

Table 9-2. Climate Change Projections for the Study Area [a] 9-14

Table 9-3. CalSim 3 Model Simulations used to Analyze Climate Change Impact on Operations 9-21

Table 9-4. Exceedance Probability of X2 during September and October under Baseline Conditions and the Proposed Project under Current and Future Climate Assumptions 9-24

Table 9-5. Long-Term Average SWP Exports under Baseline Conditions and the Proposed Project under Current and Future Climate 9-24

Table 9-6. Old and Middle River Flows under Baseline Conditions and the Proposed Project under Current and Future Climate 9-28

Table 9-7. Delta Outflow under Baseline Conditions and the Proposed Project under Current and Future Climate 9-31

Table 9-8. Flows in the San Joaquin River at Vernalis under Baseline Conditions and the Proposed Project under Current and Future Climate 9-34

Table 9-9. Flows in the Sacramento River at Freeport under Baseline Conditions and the Proposed Project under current and future climate. 9-37

Table 10-1a. List of Cumulative Projects, Water Supply, Water Management, and Water Quality Projects and Actions 10-4

Table 10-1b. List of Cumulative Projects, Habitat Improvement Projects and Actions 10-9

Table 10-1c. List of Cumulative Projects, Fish Passage and Diversion Screening Projects and Actions 10-15

Table 10-1d. List of Cumulative Projects, Invasive Species Control Programs and Actions 10-17

Table 10-1e. List of Cumulative Projects, Area-Wide Plans and Programs 10-18

Table 10-2. Median, Percentage Difference (Proposed Project plus Cumulative minus Baseline Conditions (Updated)), and Proportion of Posterior Distribution with Proposed Project plus Cumulative Less than Baseline Conditions (Updated) in Population Growth Rate from Delta Smelt LCME Modeling 10-45

Table 10-3. Percentage of Years with X2 Less than 85 km (Low-Salinity Zone within Honker Bay) or Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June–December 10-47

Table 10-4. Mean Modeled December–May Delta Outflow (Cubic Feet per Second) under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-49

Table 10-5. Mean Predicted Longfin Smelt Fall Midwater Trawl Index under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-51

Table 10-6. Mean Predicted Longfin Smelt Bay Midwater Trawl Age-0 Index under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-52

Table 10-7. Mean Predicted Longfin Smelt Bay Otter Trawl Age-0 Index under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-52

Table 10-8. Mean Probability of Lower Longfin Smelt Fall Midwater Trawl Index under the Proposed Project plus Cumulative Modeling Scenario than under the Baseline Conditions (Updated) Modeling Scenario, Grouped by Water Year Type........ 10-52

Table 10-9. Mean Probability of Lower Longfin Smelt Bay Midwater Trawl Age-0 Index under the Proposed Project plus Cumulative Modeling Scenario than under the Baseline Conditions (Updated) Modeling Scenario, Grouped by Water Year Type........ 10-53

Table 10-10. Mean Probability of Lower Longfin Smelt Bay Otter Trawl Age-0 Index under the Proposed Project plus Cumulative Modeling Scenario than under the Baseline Conditions (Updated) Modeling Scenario, Grouped by Water Year Type........ 10-53

Table 10-11. STARS: Mean September Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-60

Table 10-12. STARS: Mean October Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 10-60

Table 10-13. STARS: Mean November Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-60

Table 10-14. STARS: Mean December Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-61

Table 10-15. STARS: Mean January Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-61

Table 10-16. STARS: Mean February Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-61

Table 10-17. STARS: Mean March Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-62

Table 10-18. STARS: Mean April Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-62

Table 10-19. STARS: Mean May Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-63

Table 10-20. STARS: Mean June Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative and Baseline Conditions (Updated) Modeling Scenarios, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence Operation Assumption 10-63

Table 10-21. STARS: Mean September Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type 10-63

Table 10-22. STARS: Mean October Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type 10-64

Table 10-23. STARS: Mean November Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-64

Table 10-24. STARS: Mean December Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-64

Table 10-25. STARS: Mean January Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-64

Table 10-26. STARS: Mean February Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-65

Table 10-27. STARS: Mean March Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-65

Table 10-28. STARS: Mean April Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type and Georgiana Slough Salmonid Migratory Barrier BioAcoustic Fish Fence (BAFF) Operation Assumption 10-65

Table 10-29. STARS: Mean May Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type 10-66

Table 10-30. STARS: Mean June Probability of Chinook Salmon Smolt Survival Through the Delta under the Proposed Project plus Cumulative Being Less Than Baseline Conditions (Updated), Grouped by Water Year Type 10-66

Table 10-31. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-71

Table 10-32. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-71

Table 10-33. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-73

Table 10-34. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-73

Table 10-35. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-78

Table 10-36. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-78

Table 10-37. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method........ 10-80

Table 10-38. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density 10-81

Table 10-39. Mean Number of Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-84

Table 10-40. Mean Number of Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-84

Table 10-41. Mean Number of Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-86

Table 10-42. Mean Number of Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-86

Table 10-43. Mean Number of Late-Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-88

Table 10-44. Mean Number of Late-Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-88

Table 10-45. Mean Number of Late-Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-90

Table 10-46. Mean Number of Late-Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-90

Table 10-47. Mean Number of Steelhead Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-92

Table 10-48. Mean Number of Steelhead Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-92

Table 10-49. Mean Number of Steelhead Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-94

Table 10-50. Mean Number of Steelhead Lost (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-94

Table 10-51. Mean Number of Green Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-96

Table 10-52. Mean Number of Green Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-96

Table 10-53. Mean Number of Green Sturgeon Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-98

Table 10-54. Mean Number of Green Sturgeon Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-98

Table 10-55. Mean Number of White Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-100

Table 10-56. Mean Number of White Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-100

Table 10-57. Mean Number of White Sturgeon Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-102

Table 10-58. Mean Number of White Sturgeon Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-102

Table 10-59. Mean Number of Lamprey Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-104

Table 10-60. Mean Number of Lamprey Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-104

Table 10-61. Mean Number of Lamprey Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-106

Table 10-62. Mean Number of Lamprey Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-106

Table 10-63. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-108

Table 10-64. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-108

Table 10-65. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-110

Table 10-66. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-110

Table 10-67. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-112

Table 10-68. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-112

Table 10-69. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-114

Table 10-70. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-114

Table 10-71. Mean Number of Hardhead Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-116

Table 10-72. Mean Number of Hardhead Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-117

Table 10-73. Mean Number of Hardhead Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-118

Table 10-74. Mean Number of Hardhead Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-119

Table 10-75. Mean Number of Central California Roach Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-120

Table 10-76. Mean Number of Central California Roach Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-121

Table 10-77. Mean Number of Central California Roach Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-122

Table 10-78. Mean Number of Central California Roach Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-123

Table 10-79. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-124

Table 10-80. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-125

Table 10-81. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-126

Table 10-82. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-127

Table 10-83. Mean Number of Striped Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-128

Table 10-84. Mean Number of Striped Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-129

Table 10-85. Mean Number of Striped Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-130

Table 10-86. Mean Number of Striped Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-131

Table 10-87. Mean Number of American Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-132

Table 10-88. Mean Number of American Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-133

Table 10-89. Mean Number of American Shad Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-134

Table 10-90. Mean Number of American Shad Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-135

Table 10-91. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-136

Table 10-92. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-137

Table 10-93. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-138

Table 10-94. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-139

Table 10-95. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-140

Table 10-96. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-141

Table 10-97. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-142

Table 10-98. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-143

Table 10-99. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-144

Table 10-100. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-145

Table 10-101. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-146

Table 10-102. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-147

Table 10-103. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-148

Table 10-104. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method (Includes Banks SWP and Banks CVP Exports) 10-149

Table 10-105. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-150

Table 10-106. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the Central Valley Project South Delta Export Facility for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios Grouped by Water Year Type and Month, and Differences between the Scenarios (Proposed Project plus Cumulative minus Baseline Conditions (Updated)) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 10-151

Table 11-1. Alternatives Considered but Not Analyzed Further 11-3

Table 11-2. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton by Water Year Type, Water Years 1922–2021, Alternative 1 11-17

Table 11-3. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point by Water Year Type, Water Years 1922–2021, Alternative 1 11-18

Table 11-4. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Old River at Rock Slough by Water Year Type, Water Years 1922–2021, Alternative 1 11-19

Table 11-5. Mean Number of Genetically Identified Winter-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-22

Table 11-6. Mean Number of Genetically Identified Spring-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-22

Table 11-7. Mean Number of Fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-22

Table 11-8. Mean Number of Late-fall-run Chinook Salmon Juveniles Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-23

Table 11-9. Mean Number of Steelhead Lost (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-23

Table 11-10. Mean Number of Green Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-23

Table 11-11. Mean Number of White Sturgeon Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-24

Table 11-12. Mean Number of Lamprey Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-24

Table 11-13. Mean Number of Sacramento Hitch Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-24

Table 11-14. Mean Number of Hardhead Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-25

Table 11-15. Mean Number of Central California Roach Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-25

Table 11-16. Mean Number of Sacramento Splittail Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-25

Table 11-17. Mean Number of Starry Flounder Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-26

Table 11-18. Mean Number of Striped Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, and Alternative 2 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-26

Table 11-19. Mean Number of American Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-26

Table 11-20. Mean Number of Threadfin Shad Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-27

Table 11-21. Mean Number of Largemouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-27

Table 11-22. Mean Number of Smallmouth Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-27

Table 11-23. Mean Number of Spotted Bass Salvaged (Fish Per Year) at the State Water Project South Delta Export Facility for Baseline Conditions, Proposed Project, Alternative 1, Alternative 2, and Alternative 3 Scenarios Grouped by Water Year Type, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Based on the Salvage-Density Method 11-28

Table 11-24. Mean Modeled March–May Delta Outflow under the Proposed Project, Alternative 1, Alternative 2, Alternative 3, and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-29

Table 11-25. Mean Modeled March–June Delta Outflow under the Proposed Project, Alternative 1, Alternative 2, Alternative 3, and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-30

Table 11-26. Mean Modeled February–June Delta Outflow under the Proposed Project, Alternative 1, Alternative 2, Alternative 3, and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-31

Table 11-27. Mean Modeled April–June Delta Outflow under the Proposed Project, Alternative 1, Alternative 2, Alternative 3, and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-32

Table 11-28. Mean Predicted Longfin Smelt Fall Midwater Trawl Index under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-35

Table 11-29. Mean Predicted Longfin Smelt Bay Midwater Trawl Age-0 Index under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-35

Table 11-30. Mean Predicted Longfin Smelt Bay Otter Trawl Age-0 Index under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-35

Table 11-31. Delta Smelt LCME Modeling Results for Proposed Project/Alternative 1/Alternative 2/Alternative 3 compared to Baseline Conditions 11-37

Table 11-32. Mean Modeled January–May QWEST Flow (cfs) under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type 11-39

Table 11-33. Mean Modeled September–June Sacramento River at Freeport Flow (cfs) under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type............. 11-41

Table 11-34. Mean Modeled January–May San Joaquin River at Vernalis Flow (cfs) under the Proposed Project/Alternative 1/Alternative 2/Alternative 3 and Baseline Conditions Modeling Scenarios, and Differences between the Scenarios (Proposed Project/Alternative 1/Alternative 2/Alternative 3 minus Baseline Conditions) Expressed as a Percentage Difference (parentheses), Grouped by Water Year Type............. 11-43

Table 11-35. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton by Water Year Type, Alternative 2... 11-51

Table 11-36. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point by Water Year Type, Water Years 1922–2021, Alternative 2 11-52

Table 11-37. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Old River at Rock Slough by Water Year Type, Water Years 1922–2021, Alternative 2 11-53

Table 11-38. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton by Water Year Type, Alternative 3... 11-67

Table 11-39. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point by Water Year Type, Water Years 1922–2021, Alternative 3 11-68

Table 11-40. CalSim-Modeled Average Electrical Conductivity (in micromhos/cm) for the Old River at Rock Slough by Water Year Type, Water Years 1922–2021, Alternative 3 11-69

Figures

Figure 2-1. Locations of Facilities Relevant to Proposed Project Operations in the Delta, Suisun Marsh, and Suisun Bay 2-3

Figure 2-2. The 29 Water Purveyors Under Contract to Receive SWP Water Deliveries 2-10

Figure 2-3 Governance Structure for SWP Water Operations 2-57

Figure 4-1. Map of Tributaries that Enter the Yolo Bypass 4-2

Figure 4-2. Sacramento River at Freeport, Historical and Modeled Baseline Conditions Flow 4-3

Figure 4-3. Sacramento River at Freeport, Critical Year Historical and Modeled Baseline Conditions Flow 4-4

Figure 4-4. Total Delta Exports, Historical and Modeled Baseline Conditions 4-7

Figure 4-5. Total Delta Exports, Dry Year Historical and Modeled Baseline Conditions 4-8

Figure 4-6. Total Delta Exports, Critical Year Historical and Modeled Baseline Conditions 4-9

Figure 4-7. Annual Total SWP Deliveries, Historical and Modeled Baseline Conditions 4-10

Figure 4-8. Sacramento River at Freeport, Comparison between Long-term Monthly Average Baseline Conditions and Proposed Project Operations 4-13

Figure 4-9. Delta Outflow, Comparison between Long-term Monthly Average Baseline Conditions and Proposed Project Operations 4-14

Figure 4-10. Old and Middle River Flow, Comparison between Long-term Monthly Average Baseline Conditions and Proposed Project Operations 4-17

Figure 4-11. SWP Banks Pumping Plant Exports, Comparison between Long-term Monthly Average Baseline Conditions and Proposed Project Operations 4-19

Figure 6-1. Mean Modeled Old and Middle River Flow, December 6-39

Figure 6-2. Mean Modeled Old and Middle River Flow, January 6-39

Figure 6-3. Mean Modeled Old and Middle River Flow, February 6-40

Figure 6-4. Mean Modeled Old and Middle River Flow, March 6-40

Figure 6-5. Mean Modeled Old and Middle River Flow, April 6-41

Figure 6-6. Mean Modeled Old and Middle River Flow, May 6-42

Figure 6-7. Mean Modeled Old and Middle River Flow, June 6-42

Figure 6-8. Mean Modeled Flow Through Yolo Bypass, December 6-46

Figure 6-9. Mean Modeled Flow Through Yolo Bypass, January 6-46

Figure 6-10. Mean Modeled Flow Through Yolo Bypass, February 6-47

Figure 6-11. Mean Modeled Flow Through Yolo Bypass, March 6-47

Figure 6-12. Mean Modeled Flow Through Yolo Bypass, April 6-48

Figure 6-13. Mean Modeled Flow Through Yolo Bypass, May 6-48

Figure 6-14. Mean Modeled Delta Outflow, March–May 6-50

Figure 6-15. Mean Modeled Delta Outflow, March 6-50

Figure 6-16. Mean Modeled Delta Outflow, April 6-51

Figure 6-17. Mean Modeled Delta Outflow, May 6-51

Figure 6-18. Exceedance Plot of March–May Cladocerans (Except *Daphnia*) Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-52

Figure 6-19. Exceedance Plot of March–May *Eurytemora affinis* Adults Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-53

Figure 6-20. Exceedance Plot of March–May Harpacticoid Copepods Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-54

Figure 6-21. Exceedance Plot of March–May Other Calanoid Copepod Adults Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-55

Figure 6-22. Exceedance Plot of March–May Other Calanoid Copepod Copepodites Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-56

Figure 6-23. Mean Modeled Delta Outflow, July–September 6-57

Figure 6-24. Mean Modeled Delta Outflow, July 6-58

Figure 6-25. Mean Modeled Delta Outflow, August 6-58

Figure 6-26. Mean Modeled Delta Outflow, September 6-59

Figure 6-27. Mean Modeled Delta Outflow, June 6-59

Figure 6-28. Exceedance Plot of September–November Eurytemora affinis Adults Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-61

Figure 6-29. Exceedance Plot of September–November Mysids Catch per Cubic Meter in the Low-Salinity Zone 95% Prediction Interval, for the 1922–2021 Modeled Period 6-62

Figure 6-30. Mean Modeled Delta Outflow, September–November 6-63

Figure 6-31. Mean Modeled Delta Outflow, September 6-63

Figure 6-32. Mean Modeled Delta Outflow, October 6-64

Figure 6-33. Mean Modeled Delta Outflow, November 6-64

Figure 6-34. Sediment Rating Curve for the Sacramento River at Rio Vista, 1998–2002 6-65

Figure 6-35. Mean Modeled Sacramento River Flow at Rio Vista, December 6-66

Figure 6-36. Mean Modeled Sacramento River Flow at Rio Vista, January 6-66

Figure 6-37. Mean Modeled Sacramento River Flow at Rio Vista, February 6-67

Figure 6-38. Mean Modeled Sacramento River Flow at Rio Vista, March 6-67

Figure 6-39. Mean Modeled Sacramento River Flow at Rio Vista, April 6-68

Figure 6-40. Mean Modeled Sacramento River Flow at Rio Vista, May 6-68

Figure 6-41. Mean Modeled South Delta Exports, March–May 6-70

Figure 6-42. Mean Modeled Delta Inflow, June–September 6-70

Figure 6-43. Median Population Growth Rate (Lambda) from Delta Smelt LCME Modeling 6-73

Figure 6-44. Mean Modeled X2, September–November 6-75

Figure 6-45. Geographic Regions Used in SCHISM Analysis 6-77

Figure 6-46. Low-Salinity Area in 2010 from SCHISM Modeling 6-78

Figure 6-47. Low-Salinity Area in 2016 from SCHISM Modeling 6-79

Figure 6-48. Low-Salinity Area in 2020 from SCHISM Modeling 6-80

Figure 6-49. Plan View of BioAcoustic Fish Fence Excerpted from Engineering Drawings. 6-84

Figure 6-50. Close-up Plan View of Downstream End of BioAcoustic Fish Fence Excerpted from Engineering Drawings. 6-85

Figure 6-51. Profile View of BioAcoustic Fish Fence Excerpted from Engineering Drawings. 6-86

Figure 6-52. Exceedance Plot of Longfin Smelt April–May Salvage Prediction Interval, Based on the Analysis using the Salvage-Old and Middle River Flow Regression Developed by Grimaldo et al. (2009a) 6-96

Figure 6-53. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Fall Midwater Trawl Index from Application of the Delta Outflow-Abundance Index Method 6-101

Figure 6-54. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Midwater Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method 6-101

Figure 6-55. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Otter Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method 6-102

Figure 6-56. Mean Modeled Sacramento River Flow at Freeport, November 6-108
Figure 6-57. Mean Modeled Sacramento River Flow at Freeport, December 6-109
Figure 6-58. Mean Modeled Sacramento River Flow at Freeport, January 6-109
Figure 6-59. Mean Modeled Sacramento River Flow at Freeport, February 6-110
Figure 6-60. Mean Modeled Sacramento River Flow at Freeport, March 6-110
Figure 6-61. Mean Modeled Sacramento River Flow at Freeport, April 6-111
Figure 6-62. Mean Modeled Sacramento River Flow at Freeport, May 6-111
Figure 6-63. Mean Modeled Sacramento River Flow at Freeport, June 6-112
Figure 6-64. Mean Modeled SWP South Delta Exports, November 6-113
Figure 6-65. Mean Modeled SWP South Delta Exports, December 6-113
Figure 6-66. Mean Modeled SWP South Delta Exports, January 6-114
Figure 6-67. Mean Modeled SWP South Delta Exports, February 6-114
Figure 6-68. Mean Modeled SWP South Delta Exports, March 6-115
Figure 6-69. Mean Modeled SWP South Delta Exports, April 6-115
Figure 6-70. Mean Modeled SWP South Delta Exports, May 6-116
Figure 6-71. Mean Modeled SWP South Delta Exports, June 6-116
Figure 6-72. Exceedance Plot of Annual Proportion of Juvenile Winter-run Chinook Salmon Entering the Delta Salvaged at the State Water Project South Delta Export Facility for Baseline Conditions and Proposed Project Scenarios from the Salvage Analysis Based on Zeug and Cavallo (2014) 6-119
Figure 6-73. Velocity Density Distribution for Sacramento River at Freeport, September 6-121
Figure 6-74. Velocity Density Distribution for Sacramento River at Freeport, October 6-121
Figure 6-75. Velocity Density Distribution for Sacramento River at Freeport, November 6-122
Figure 6-76. Velocity Density Distribution for Sacramento River at Freeport, December 6-122
Figure 6-77. Velocity Density Distribution for Sacramento River at Freeport, January........................6-123
Figure 6-78. Velocity Density Distribution for Sacramento River at Freeport, February 6-123
Figure 6-79. Velocity Density Distribution for Sacramento River at Freeport, March 6-124
Figure 6-80. Velocity Density Distribution for Sacramento River at Freeport, April 6-124
Figure 6-81. Velocity Density Distribution for Sacramento River at Freeport, May 6-125
Figure 6-82. Velocity Density Distribution for Sacramento River at Freeport, June 6-125
Figure 6-83. Velocity Density Distribution for Sacramento River at Walnut Grove, September 6-126

Figure 6-84. Velocity Density Distribution for Sacramento River at Walnut Grove, October 6-126

Figure 6-85. Velocity Density Distribution for Sacramento River at Walnut Grove, November 6-127

Figure 6-86. Velocity Density Distribution for Sacramento River at Walnut Grove, December...........6-127

Figure 6-87. Velocity Density Distribution for Sacramento River at Walnut Grove, January 6-128

Figure 6-88. Velocity Density Distribution for Sacramento River at Walnut Grove, February 6-128

Figure 6-89. Velocity Density Distribution for Sacramento River at Walnut Grove, March 6-129

Figure 6-90. Velocity Density Distribution for Sacramento River at Walnut Grove, April 6-129

Figure 6-91. Velocity Density Distribution for Sacramento River at Walnut Grove, May 6-130

Figure 6-92. Velocity Density Distribution for Sacramento River at Walnut Grove, June 6-130

Figure 6-93. Delta Passage Model: Exceedance Plot of Winter-Run Chinook Salmon Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 50%. 6-147

Figure 6-94. Delta Passage Model: Exceedance Plot of Winter-Run Chinook Salmon Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 67%. 6-147

Figure 6-95. Velocity Density Distribution for Old River near Head of Old River, April........................6-166

Figure 6-96. Velocity Density Distribution for Old River near Head of Old River, May 6-167

Figure 6-97. Velocity Density Distribution for Old River Downstream of the South Delta Export Facilities, April 6-167

Figure 6-98. Velocity Density Distribution for Old River Downstream of the South Delta Export Facilities, May. 6-168

Figure 6-99. Delta Passage Model: Exceedance Plot of Spring-Run Chinook Salmon Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 50% 6-169

Figure 6-100. Delta Passage Model: Exceedance Plot of Spring-Run Chinook Salmon Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 67% 6-169

Figure 6-101. Exceedance Plot of San Joaquin River Spring-Run Chinook Salmon Annual Proportional Through-Delta Survival under the Proposed Project and Baseline Conditions Modeling Scenarios, for the 1922–2021 Modeled Period....................................6-171

Figure 6-102. Mean Modeled Sacramento River Flow at Freeport, July 6-176

Figure 6-103. Mean Modeled Sacramento River Flow at Freeport, August 6-176

Figure 6-104. Mean Modeled Sacramento River Flow at Freeport, September 6-177

Figure 6-105. Mean Modeled Sacramento River Flow at Freeport, October 6-177

Figure 6-106. Mean Modeled SWP South Delta Exports, July 6-178

Figure 6-107. Mean Modeled SWP South Delta Exports, August 6-179

Figure 6-108. Mean Modeled SWP South Delta Exports, September 6-179

Figure 6-109. Mean Modeled SWP South Delta Exports, October 6-180

Figure 6-110. Exceedance Plot of San Joaquin River Basin Fall-Run Chinook Salmon Adult Straying to the Sacramento River Basin under the Proposed Project and Baseline Conditions Modeling Scenarios, for the 1922–2021 Modeled Period....6-181

Figure 6-111. Number of Days of Delta Cross Channel Opening, October 6-182

Figure 6-112. Number of Days of Delta Cross Channel Opening, November 6-183

Figure 6-113. Delta Passage Model: Exceedance Plot of Fall-Run Chinook Salmon Smolt Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 50%....6-187

Figure 6-114. Delta Passage Model: Exceedance Plot of Fall-Run Chinook Salmon Smolt Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 67%....6-187

Figure 6-115. Delta Passage Model: Exceedance Plot of Late Fall-Run Chinook Salmon Smolt Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 50%....6-188

Figure 6-116. Delta Passage Model: Exceedance Plot of Late Fall-Run Chinook Salmon Smolt Through-Delta Survival 95% Predictions, for the 1922–2021 Modeled Period, Assuming BioAcoustic Fish Fence Reducing Entry into Georgiana Slough by 67%....6-189

Figure 6-117. Exceedance Plot of San Joaquin River Fall-Run Chinook Salmon Juvenile Annual Proportional Through-Delta Survival under the Proposed Project and Baseline Conditions Modeling Scenarios, for the 1922–2021 Modeled Period....6-191

Figure 6-118. Mean Modeled San Joaquin River Flow at Vernalis, February 6-197

Figure 6-119. Mean Modeled San Joaquin River Flow at Vernalis, March 6-197

Figure 6-120. Mean Modeled San Joaquin River Flow at Vernalis, April 6-198

Figure 6-121. Mean Modeled San Joaquin River Flow at Vernalis, May 6-198

Figure 6-122. Exceedance Plot of White Sturgeon Year Class Strength Prediction Interval, Based on the Regression Including March–July Delta Outflow 6-208

Figure 6-123. Exceedance Plot of White Sturgeon Year Class Strength Prediction Interval, Based on the Regression Including April–May Delta Outflow 6-209

Figure 6-124. Exceedance Plot of Starry Flounder Age 1+ Bay Study Otter Trawl Abundance Index, Based on the Regression Including March–June Delta Outflow 6-223

Figure 6-125. Exceedance Plot of Striped Bass Fall Midwater Trawl Abundance Index, Based on the Regression Including April–June Delta Outflow 6-230

Figure 6-126. Exceedance Plot of American Shad Fall Midwater Trawl Abundance Index, Based on the Regression Including February–June Delta Outflow 6-234

Figure 9-1. Exceedance Probability Showing the Location of the X2 for September and October in Current Climate (a) and Projected Climate (b) Scenarios Relative to Existing Operations and Climate Conditions 9-23

Figure 9-2. State Water Project Exports under Current Conditions and Future Climate Change Conditions. Flows under climate change are shown as flows with operational changes described under the Proposed Project (Project) and with no operational changes (Baseline). 9-26

Figure 9-3. Climate Change Impact on State Water Project Exports are shown for the Future Climate Scenario for both Baseline and Proposed Project Operations, Relative to Existing Operations and Climate Conditions 9-27

Figure 9-4. Old and Middle River Flows under Current Conditions and under Future Climate Change Conditions. Flows under climate change are shown as flows with operational changes described in the Project (Project) and with no operational changes (Baseline). 9-29

Figure 9-5. Old and Middle River Flows are Shown for the Future Climate Scenario for both Baseline and Proposed Project Operations Relative to Existing Operations and Climate Conditions 9-30

Figure 9-6. Delta Flows under Current Conditions and under Future Climate Change Conditions. Flows under climate change are shown as flows with operational changes described in the Project (Project) and with no operational changes (Baseline). 9-32

Figure 9-7. Climate Change Impact on Delta Outflows are Shown for the Future Climate Scenario for both Baseline and Proposed Project Operations relative to Existing Operations and Climate Conditions 9-33

Figure 9-8. San Joaquin River flows at Vernalis under Current Conditions and Future Climate Change Conditions. Flows under climate change are shown as flows with operational changes described in the Project (Project) and with no operational changes (Baseline). 9-35

Figure 9-9. Climate Change Impact on San Joaquin River flows at Vernalis for the Future Climate Scenario for both Baseline and Proposed Project Operations Relative to Existing Operations and Climate Conditions 9-36

Figure 9-10. Sacramento River flows at Freeport under Current Conditions and Future Climate Change Conditions. Flows under climate change are shown as flows with operational changes described in the Project (Project) and with no operational changes (Baseline). 9-38

Figure 9-11. Climate Change Impact on Sacramento River flows at Freeport for the Future Climate Scenario for both Baseline and Proposed Project Operations Relative to Existing Operations and Climate Conditions........ 9-39

Figure 10-1. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, December........ 10-29

Figure 10-2. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, January 10-30

Figure 10-3. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, February 10-30

Figure 10-4. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March 10-31

Figure 10-5. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April........ 10-32

Figure 10-6. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May 10-32

Figure 10-7. Mean Modeled Old and Middle River Flow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June 10-33

Figure 10-8. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, December........ 10-34

Figure 10-9. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, January 10-34

Figure 10-10. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, February 10-35

Figure 10-11. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March 10-35

Figure 10-12. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April........ 10-36

Figure 10-13. Mean Modeled Flow Through Yolo Bypass for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May 10-36

Figure 10-14. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March–May 10-37

Figure 10-15. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March ... 10-37

Figure 10-16. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April ... 10-38

Figure 10-17. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May ... 10-38

Figure 10-18. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June ... 10-39

Figure 10-19. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, July ... 10-39

Figure 10-20. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, August ... 10-40

Figure 10-21. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, September ... 10-40

Figure 10-22. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, October ... 10-41

Figure 10-23. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, November ... 10-41

Figure 10-24. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, July–September ... 10-42

Figure 10-25. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March–May ... 10-43

Figure 10-26. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June–September ... 10-43

Figure 10-27. Median Population Growth Rate (Lambda) from Delta Smelt LCME Modeling for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios ... 10-45

Figure 10-28. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June–August ... 10-46

Figure 10-29. Mean X2 for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, September–November ... 10-47

Figure 10-30. Mean Modeled Delta Outflow for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, December–May ... 10-48

Figure 10-31. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Fall Midwater Trawl Index from Application of the Delta Outflow-Abundance Index Method for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios ... 10-50

Figure 10-32. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Midwater Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios ... 10-50

Figure 10-33. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Otter Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios ... 10-51

Figure 10-34. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, September ... 10-55

Figure 10-35. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, October ... 10-55

Figure 10-36. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, November ... 10-56

Figure 10-37. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, December ... 10-56

Figure 10-38. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, January ... 10-57

Figure 10-39. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, February ... 10-57

Figure 10-40. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March ... 10-58

Figure 10-41. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April ... 10-58

Figure 10-42. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May ... 10-59

Figure 10-43. Mean Modeled Sacramento River Flow at Freeport for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June ... 10-59

Figure 10-44. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, November ... 10-67

Figure 10-45. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, December ... 10-67

Figure 10-46. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, January ... 10-68

Figure 10-47. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, February ... 10-68

Figure 10-48. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March 10-69

Figure 10-49. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April 10-69

Figure 10-50. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May 10-70

Figure 10-51. Mean Modeled South Delta Exports for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June 10-70

Figure 10-52. Mean Modeled San Joaquin River Flow at Vernalis for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, March 10-76

Figure 10-53. Mean Modeled San Joaquin River Flow at Vernalis for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, April 10-76

Figure 10-54. Mean Modeled San Joaquin River Flow at Vernalis for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, May 10-77

Figure 10-55. Mean Modeled San Joaquin River Flow at Vernalis for Baseline Conditions (Updated) and Proposed Project plus Cumulative Scenarios, June 10-77

Figure 11-1. Sacramento River at Freeport Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-10

Figure 11-2. Monthly Long-term Average Yolo Bypass Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-10

Figure 11-3. Monthly Long-term Average Georgiana Slough Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-11

Figure 11-4. Monthly Long-term Average Delta Cross Channel Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-11

Figure 11-5. Monthly Long-term Average Qwest Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-12

Figure 11-6. Monthly Long-term Average Delta Outflow for the Baseline Conditions, Proposed Project, and Alternative 1 11-12

Figure 11-7. Combined Old and Middle River Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 1 11-13

Figure 11-8. Monthly Long-term Average Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-13

Figure 11-9. December Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-14

Figure 11-10. January Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-14

Figure 11-11. February Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-15

Figure 11-12. March Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-15

Figure 11-13. Annual Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 1 11-16

Figure 11-14. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton, Water Years 1922–2021, Alternative 1........ 11-17

Figure 11-15. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point, Water Years 1922–2021, Alternative 1 11-18

Figure 11-16. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for Old River at Rock Slough, Water Years 1922–2021, Alternative 1........ 11-19

Figure 11-17. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 1), December 11-21

Figure 11-18. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 1), March........ 11-21

Figure 11-19. Mean Modeled March–May Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 1 11-29

Figure 11-20. Mean Modeled March–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 1 11-30

Figure 11-21. Mean Modeled February–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 1........ 11-31

Figure 11-22. Mean Modeled April–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 1 11-32

Figure 11-23. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Fall Midwater Trawl Index from Application of the Delta Outflow-Abundance Index Method for Alternative 1 and Baseline Conditions Scenarios 11-33

Figure 11-24. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Midwater Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 1 and Baseline Conditions Scenarios 11-34

Figure 11-25. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Otter Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 1 and Baseline Conditions Scenarios 11-34

Figure 11-26. Median Population Growth Rate (Lambda) from Delta Smelt LCME Modeling for Baseline Conditions and Alternative 1 11-38

Figure 11-27. Sacramento River at Freeport Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-45

Figure 11-28. Monthly Long-term Average Yolo Bypass Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-46

Figure 11-29. Monthly Long-term Average Georgiana Slough Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-46

Figure 11-30. Monthly Long-term Average Delta Cross Channel Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-47

Figure 11-31. Monthly Long-term Average Qwest Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-47

Figure 11-32. Monthly Long-term Average Delta Outflow for the Baseline Conditions, Proposed Project, and Alternative 2 11-48

Figure 11-33. Combined Old and Middle River Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 2 11-48

Figure 11-34. Monthly Long-term Average Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 2 11-49

Figure 11-35. Annual Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 2 11-49

Figure 11-36. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton, Water Years 1922–2021, Alternative 2 11-51

Figure 11-37. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point, Water Years 1922–2021, Alternative 2 11-52

Figure 11-38. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for Old River at Rock Slough, Water Years 1922–2021, Alternative 2 11-53

Figure 11-39. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 2), December 11-54

Figure 11-40. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 2), March 11-55

Figure 11-41. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Fall Midwater Trawl Index from Application of the Delta Outflow-Abundance Index Method for Alternative 2 and Baseline Conditions (BC) Scenarios 11-55

Figure 11-42. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Midwater Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 2 and Baseline Conditions (BC) Scenarios 11-56

Figure 11-43. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Otter Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 2 and Baseline Conditions (BC) Scenarios 11-56

Figure 11-44. Median Population Growth Rate (Lambda) from Delta Smelt LCME Modeling for Baseline Conditions and Alternative 2 11-57

Figure 11-45. Sacramento River at Freeport Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-59

Figure 11-46. Monthly Long-term Average Yolo Bypass Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-60

Figure 11-47. Monthly Long-term Average Georgiana Slough Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-60

Figure 11-48. Monthly Long-term Average Delta Cross Channel Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-61

Figure 11-49. Monthly Long-term Average Qwest Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-61

Figure 11-50. Monthly Long-term Average Delta Outflow for the Baseline Conditions, Proposed Project, and Alternative 3 11-62

Figure 11-51. Combined Old and Middle River Monthly Long-term Average Flow for the Baseline Conditions, Proposed Project, and Alternative 3 11-62

Figure 11-52. Monthly Long-term Average Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-63

Figure 11-53. December Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-63

Figure 11-54. January Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-64

Figure 11-55. February Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-64

Figure 11-56. March Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-65

Figure 11-57. Annual Delta Exports for the Baseline Conditions, Proposed Project, and Alternative 3 11-65

Figure 11-58. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the Sacramento River at Emmaton, Water Years 1922–2021, Alternative 3 11-67

Figure 11-59. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for the San Joaquin River at Jersey Point, Water Years 1922–2021, Alternative 3 11-68

Figure 11-60. CalSim-modeled Monthly Average Electrical Conductivity (in micromhos/cm) for Old River at Rock Slough, Water Years 1922–2021, Alternative 3 11-69

Figure 11-61. Mean Modeled March–May Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 3 11-70

Figure 11-62. Mean Modeled March–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 3 11-71

Figure 11-63. Mean Modeled February–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 3 11-71

Figure 11-64. Mean Modeled April–June Delta Outflow for Baseline Conditions, Proposed Project, and Alternative 3 11-72

Figure 11-65. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 3), December 11-72

Figure 11-66. Mean Modeled SWP South Delta Exports (Baseline Conditions, Proposed Project, and Alternative 3), March 11-73

Figure 11-67. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Fall Midwater Trawl Index from Application of the Delta Outflow-Abundance Index Method for Alternative 3 and Baseline Conditions (BC) Scenarios 11-73

Figure 11-68. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Midwater Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 3 and Baseline Conditions (BC) Scenarios 11-74

Figure 11-69. Time Series Plot of 95% Posterior Distribution of the Longfin Smelt Bay Otter Trawl Age-0 Index from Application of the Delta Outflow-Abundance Index Method for Alternative 3 and Baseline Conditions (BC) Scenarios 11-74

Figure 11-70. Median Population Growth Rate (Lambda) from Delta Smelt LCME Modeling for Baseline Conditions and Alternative 3 11-75

Acronyms and Abbreviations

Term	Definition
°C	degrees Celsius
°F	degrees Fahrenheit
μg/L	micrograms per liter
μmhos/cm	micromhos per centimeter
AB	Assembly Bill
af	acre-feet
ARIS	Adaptive Resolution Imaging Sonar
BAFF	Barrier BioAcoustic Fish Fence
Banks Pumping Plant	Harvey O. Banks Pumping Plant
BiOp	biological opinion
BSPP	Barker Slough Pumping Plant
CALFED	CALFED Bay-Delta Program
CASCaDE	Computational Assessments of Scenarios of Change for the Delta Ecosystem
CCF	Clifton Court Forebay
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
cfs	cubic feet per second
CGC	California Government Code
CHAB	cyanobacteria harmful algae bloom
CMIP5	Coupled Model Intercomparison Project Phase 5
CNRA	California Natural Resources Agency
COA	Coordinated Operation Agreement
CRHR	California Register of Historical Resources
CSAMP	Collaborative Science and Adaptive Management Program
CSD	Community Services District
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
CWC	California Water Code
CWC	California Water Commission
D-1485	State Water Board Water Right Decision 1485
D-1641	Decision 1641

Term	Definition
DCC	Delta Cross Channel
DCD	Delta Channel Depletion
DCP	Delta Conveyance Project
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DEIR	Draft Environmental Impact Report
Delta	Sacramento–San Joaquin Delta
Delta Reform Act	Sacramento–San Joaquin Delta Reform Act of 2009
DICU	Delta Island Consumptive Use
DO	dissolved oxygen
DPM	Delta Passage Model
DPS	distinct population segment
Draft SEIR	draft supplemental environmental impact report
DSM2	Delta Simulation Model II
DWR	California Department of Water Resources
E:I	export/inflow
EC	electrical conductivity
ECO-PTM	Ecological Particle Tracking Modeling
EDSM	Enhanced Delta Smelt Monitoring
EFH	essential fish habitat
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FCCL	Fish Conservation and Culture Laboratory
FFGS study	Floating Fish Guidance Structure
FMWT	fall midwater trawl
FR	Federal Register
GHG	greenhouse gas
HRLP	Healthy Rivers and Landscapes Program
I:E	inflow to exports
IEP	Interagency Ecological Program
IEP MAST	Interagency Ecological Program Management, Analysis, and Synthesis Team
IEUA	Inland Empire Utilities Agency
IPCC	Intergovernmental Panel on Climate Change
ITP	Incidental Take Permit
JPA	Joint Powers Authority
LCME	Life Cycle Model with Entrainment
LMP	Land Management Plan
LSIWA	Lower Sherman Island Wildlife Area

Term	Definition
maf	million acre-feet
mg/L	milligrams per liter
MIDS	Morrow Island Distribution System
mm	millimeter
mmhos/cm	millimhos per centimeter
MOU	Memorandum of Understanding
MWD	Metropolitan Water District
NAHC	Native American Heritage Commission
NAVD	North American Vertical Datum
NBA	North Bay Aqueduct
NEPA	National Environmental Policy Act
NOP	Notice of Preparation
OMR	Old and Middle River
OPR	Governor's Office of Planning and Research
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
POD	pelagic organism decline
ppt	parts per thousand
PRC	Public Resources Code
PTM	particle tracking modeling
PWA	Public Water Agency
RCP	Representative Concentration Pathway
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RM	River Mile
ROC on LTO	Reinitiation of Consultation on the Long-Term Operations of SWP and CVP
RRDS	Roaring River Distribution System
RWQCB	Regional Water Quality Control Board
SCHISM	Semi-Implicit Cross-scale Hydroscience Integrated System Model
SDG	South Delta Gates
SED	Substitute Environmental Document
Skinner Fish Facility	John E. Skinner Delta Fish Protective Facility
SMSCG	Suisun Marsh Salinity Control Gates
SSP	shared socioeconomic pathways
SST	Salmonid Scoping Team
STARS	Survival, Travel Time, and Routing Analysis
State Water Board	State Water Resources Control Board
SWP	State Water Project
taf	thousand acre-feet
TBP	Temporary Barriers Project
TCL	Tribal Cultural Landscape

Term	Definition
TCR	Tribal cultural resource
TDS	total dissolved solids
TMDL	total maximum daily load
TUCP	Temporary Urgency Change Petition
UAIC	United Auburn Indian Community of the Auburn Rancheria
UC	University of California
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
WQCP	Water Quality Control Plan
WSIP	Water Storage Investment Program
WY	water year