

South Delta
IMPROVEMENTS PROGRAM
EIS/EIR

Volume III: Chapters 9–10 and Appendices
**Environmental Impact Statement/
Environmental Impact Report**

Final



California Department
of Water Resources



U.S. Department of the Interior,
Bureau of Reclamation

U.S. Department of the Interior, Bureau of Reclamation

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

California Department of Water Resources

The mission of the California Department of Water Resources is to manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

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Volume III: Chapters 9–10 and Appendices

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Acronyms and Abbreviations

µg/l	micrograms per liter
µS/cm	microSiemens per centimeter
1978 Delta Plan	Water Quality Control Plan for the Sacramento–San Joaquin Delta and Suisun Marsh
1991 Delta Plan	1991 Delta Water Quality Control Plan for Salinity, Temperature and Dissolved Oxygen
ACE	Altamont Commuter Express
ACHP	Advisory Council on Historic Preservation
af	acre-feet
af/day	acre-feet per day
AFRP	Anadromous Fish Restoration Program
AG-40	Permanent Agricultural Intensive Land Use Zone, minimum parcel size 40 acres
AG-80	Permanent Agricultural Extensive Land Use Zone, minimum parcel size 80 acres
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
APE	area of potential effects
ASIP	Action Specific Implementation Plan
ASTM	American Society for Testing and Material
AU-20	Agriculture–Urban Reserve, minimum parcel size 20 acres
Authority	California Bay-Delta Authority
B.P.	years before present
BA	biological assessment
BAAQMD	Bay Area Air Quality Management District
BART	San Francisco Bay Area Rapid Transit District
Bay-Delta	San Francisco Bay/Sacramento–San Joaquin River Delta
Bay-Delta Estuary	San Francisco Bay/Sacramento–San Joaquin River Delta Estuary
BDAC	Bay-Delta Advisory Council
BDPAC	Bay-Delta Public Advisory Committee
BIA	Bureau of Indian Affairs
BMPs	best management practices
BNSF	Burlington Northern and Santa Fe Railway
BO	biological opinion
Br ⁻	bromide
Business Plan Act	Hazardous Materials Release Response Plans and Inventory Act

CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALFED Ops Group	California-Federal Operations Group
CALFED Program	CALFED Bay-Delta Program
CALFED ROD	CALFED Programmatic Record of Decision
CALSIM	joint water supply planning model
CALSIM II	DWR and Reclamation joint planning model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAT	San Joaquin Area Transit
CBDA	California Bay-Delta Authority
CCC	Contra Costa Canal
CCF	Clifton Court Forebay
CCIC	Central California Information Center
CCMP	Comprehensive Conservation and Management Plan
CCR	California Code of Regulations
CCWA	Central Coast Water Authority
CCWD	Contra Costa Water District
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
Cl ⁻	chloride
cm	centimeters
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
COA	Coordinated Operations Agreement
Corps	U.S. Army Corps of Engineers
CPM	Certified Property Manager
CRHR	California Register of Historic Resources
CSUS	California State University, Sacramento
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CVP Tracy	CVP Tracy Pumping Plant
CVPIA	Central Valley Project Improvement Act
CVP-OCAP	CVP Operating and Criteria Plan
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	federal Clean Water Act of 1977
cy	cubic yards
D-1485	State Water Resources Control Board Decision-1485
D-1630	Water Right Decision 1630
D-1641	State Water Resource Control Board Decision 1641
D-893	Water Right Decision 893
DAT	Data Assessment Team

dB	Decibel
dBA	A-Weighted Decibel
DBW	California Department of Boating and Waterways
DCC	Delta Cross Channel
DEFT	Diversion Effects on Fisheries Team
Delta	Sacramento–San Joaquin River Delta
DFG	California Department of Fish and Game
DIDI	Delta Island Drainage Investigations
DIP	Delta Improvements Package
DMC	Delta-Mendota Canal
DO	dissolved oxygen
DOC	dissolved organic carbon
DOI	U.S. Department of the Interior
DPC	Delta Protection Commission
DPR	California Department of Parks and Recreation
DPS	dredge placement sites
DRERIP	Delta Regional Ecosystem Restoration Implementation Plan
DSA	depletion study area
DSM2	Delta Simulation Model 2
DSM2	State of California Delta Simulation Model
DSOD	Department of Safety of Dams
DSRAM	Delta Smelt Risk Assessment Matrix
DWR	California Department of Water Resources
DWSC	Deep Water Ship Channel
E/I	export/inflow
EBMUD	East Bay Municipal Utility District
EC	electrical conductivity
EDR	Environmental Data Report
EIS/EIR	environmental impact statement/environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Ecosystem Restoration Program
ESA	federal Endangered Species Act
ESU	evolutionarily significant unit
EWA	Environmental Water Account
EWP	Environmental Water Program
feet msl	feet above mean sea level
feet/sec	feet per second
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FPMP	fugitive PM10 management plan
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRSA	Feather River Service Area
FRWP	Freeport Regional Water Project
FSZ	Farmland Security Zone
FTA	Federal Transit Administration
FWCA	Fish and Wildlife Coordination Act

g	force of gravity
GIS	geographic information systems
GPS	Global Positioning System
HCP	habitat conservation plan
HM	Habitat Management
Hp	horsepower
I-5	Interstate 5
IDHAMP	Interagency Delta Health Aspects Monitoring Program
IEP	Interagency Ecological Program
IESP	Interagency Ecological Study Program
in/sec	inches per second
Intertie	Delta-Mendota Canal and California Aqueduct Intertie
ISDP	Interim South Delta Program
ITAs	Indian Trust Assets
JPE	juvenile production estimate
JPOD	joint point of diversion
KCWA	Kern County Water Agency
kV	kilovolts
L _{dn}	Day-Night Level
L _{eq}	Equivalent Sound Level
L _{max}	Maximum Sound Level
L _{min}	Minimum Sound Level
LOD	level of development
LOS	levels of service
LRMP	Land and Resource Management Plan
LTEWA	Long-Term EWA
L _{xx}	Percentile-Exceeded Sound Level
M&I	municipal and industrial
m/sec	meter per second
maf	million acre-feet
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MAs	Management Agencies
MBK	Murray, Burns & Kienlen
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
Metropolitan	The Metropolitan Water District of Southern California
mg/l	milligrams per liter
mgd	million gallons per day
MLLW	mean lower low water
MOU	memorandum of understanding
μS/cm	microSiemens per centimeter
μg/l	micrograms per liter
μg/m ³	micrograms per cubic meter
mph	miles per hour

mS/cm	milliSiemens per centimeter
MSA	Metropolitan Statistical Area
MSCS	Multi-Species Conservation Strategy
MSSCG	Montezuma Slough salinity control gates
MTC	Metropolitan Transportation Commission
MWQI	Municipal Water Quality Investigations Program
MWT	Fall Midwater Trawl survey
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAVD 88	North American Vertical Datum of 1988
NCCA	and Natural Communities Conservation Act
NCCP	Natural Community Conservation Plan
NCCPA	Natural Communities Conservation Planning Act
NEPA	National Environmental Policy Act
NGVD	national geodetic vertical datum
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Marine Fisheries Service
NOC	Notice of Completion
NOD	Notice of Determination
NOP/NOI	Notice of Preparation/Notice of Intent
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRA	National Recreation Area
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTU	nephelometric turbidity unit
NWIC	Northwest Information Center
O&M	operations and maintenance
O ³	ozone
OCAP	CVP/SWP Operations Criteria and Plan
OES	Office of Emergency Services
OPR	Governor's Office of Planning and Research
PAs	Project Agencies
PCL	Planning and Conservation League
PG&E	Pacific Gas and Electric Company
PL	Public Law
PM10	particulate matter 10 microns in diameter or less
Porter-Cologne	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppt	parts per thousand
PPV	Peak Particle Velocity
Programmatic EIS/EIR	CALFED Programmatic Environmental Impact Statement/Environmental Impact Report
Proposition 65	Safe Drinking Water and Toxic Enforcement Act of 1986
PTM	Particle Tracking Module
Public Notice	Public Notice 5820A, Amended

RBDD	Red Bluff Diversion Dam
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RMP	risk management plan
ROC	reactive organic compounds
ROD	Record of Decision
RPA	Reasonable Prudent Alternative
RT	round trip
RTOC	Regional Tribal Operations Committee
RWQCB	Regional Water Quality Control Board
RWWCF	Stockton Regional Wastewater Control Facility
SAP	sampling and analysis plan
SB	Senate Bill
SCVWD	Santa Clara Valley Water District
SCWA	Sacramento County Water Agency
SDIP	South Delta Improvements Program
SDWA	South Delta Water Agency
SET	standard elutriate tests
SFBAAB	San Francisco Bay Area Air Basin
SFEP	San Francisco Estuary Project
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVDIP	San Joaquin Valley Drainage Implementation Program
SJVUAPCD	San Joaquin Valley Unified Air Pollution Control District
SMART	San Joaquin Regional Transit District
SR	State Route
SRA	State Recreation Area
SRFCP	Sacramento River Flood Control Project
SS	suspended sediments
State Water Board	State Water Resources Control Board
Superfund	Comprehensive Environmental Response, Compensation, and Liability Act
SVWMA	Sacramento Valley Water Management Agreement
SVWMP	Sacramento Valley Water Management Plan
SWP	State Water Project
SWP Banks	SWP Harvey O. Banks Pumping Plant
SWPPP	stormwater pollution prevention plan
taf	thousand acre-feet
taf/yr	thousand acre-feet per year
TDF	Through-Delta Facility
TDS	total dissolved solids
THMs	trihalomethanes
TMDL	total maximum daily load
TNS	Summer Towntet Survey
TOC	total organic carbon
tpy	tons per year
TRMFRP EIS	Trinity River Mainstream Fishery Restoration Program Environmental Impact Statement

UBC	Uniform Building Code
Union Island	Old River at the head of Middle River
USC	U.S. Code
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VAMP	Vernalis Adaptive Management Plan
VELB	valley elderberry longhorn beetle
VOCs	volatile organic carbons
WAP	Water Acquisition Program
WAPA	Western Area Power Administration
WDRs	waste discharge requirements
Williamson Act	California Land Conservation Act of 1965
WMU	Waste Management Unit
WOMT	Water Operations Management Team
WQCP	Water Quality Control Plan
WTP	Water Treatment Plant
WY	water years
X2	the distance in kilometers of the 2-ppt isohaline from the Golden Gate Bridge
yds ³	cubic yards