

CENTRAL VALLEY FLOOD MANAGEMENT PLANNING PROGRAM



2012 Central Valley Flood Protection Plan Final Program Environmental Impact Report

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Abbreviations and Acronyms

µg/m ³	micrograms per cubic meter
°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ACWA	Association of California Water Agencies
AEP	annual exceedence probability
APS	alternative planning strategy
AR	atmospheric river
BAAQMD	Bay Area Air Quality Management District
Basin Plan	<i>The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region: The Sacramento River Basin and the San Joaquin River Basin</i>
Bay-Delta	San Francisco Bay/Sacramento–San Joaquin Delta
BCDC	San Francisco Bay Conservation and Development Commission
BDCP	Bay Delta Conservation Plan
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BMP	best management practice
BNSF	Burlington Northern Santa Fe Railway
Board	Central Valley Flood Protection Board
Building Code	California Building Standards Code
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California ambient air quality standards
CAISO	California Independent System Operator
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CALFED	CALFED Bay-Delta Program
CALFED FEIS/R	<i>CALFED Bay-Delta Program Final Programmatic Environmental Impact Statement/Environmental Impact Report</i>

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<i>CALFED Proceedings</i>	<i>In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1163</i>
CAL FIRE	California Department of Forestry and Fire Protection
California ISO	California Independent System Operator Corporation
California System	California Wild and Scenic Rivers System
Cal/OSHA	California Occupational Health and Safety Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	climate action plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CCAA	California Clean Air Act
CCASCW	<i>Climate Change Adaptation Strategies for California's Water</i>
CCP	comprehensive conservation plan
CCR	California Code of Regulations
CDC	Centers for Disease Control and Prevention
CDEC	California Data Exchange Center
CDWA	Central Delta Water Agency
CEC	California Energy Commission
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CEQA Guidelines	California Environmental Quality Act Guidelines
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CESA	California Endangered Species Act
CFBF	California Farm Bureau Federation
CFCP	California Farmland Conservancy Program
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGC	California Government Code
CGS	California Geological Survey
CH ₄	methane

CHP	California Highway Patrol
CIC	Chico Municipal Airport
cm	centimeter(s)
CMP	Corridor Management Planning
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNG	compressed natural gas
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COA	Coordinated Operations Agreement
CO-CAT	Coastal and Ocean Resources Working Group for the Climate Action Team
COG	council of governments
Comprehensive Study	<i>Sacramento and San Joaquin River Basins Comprehensive Study</i>
Conservation Strategy	Central Valley Flood System Conservation Strategy
CPUC	California Public Utilities Commission
CRFSC	California Regional Framework Study Committee
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSAC	California State Association of Counties
CSC	California species of special concern
CSSC	California Seismic Safety Commission
CTR	California Toxics Rule
CVFED	Central Valley Floodplain Evaluation and Delineation
CVFMP	Central Valley Flood Management Planning
CVFPP	Central Valley Flood Protection Program
CVHM	Central Valley Hydrologic Model
CVIFMS	Central Valley Integrated Flood Management Study
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act

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CWA	Clean Water Act
CWC	California Water Code
CWP	California Water Plan
dB	decibels
dBA	A-weighted decibels
dbh	diameter at breast height
DBW	California Department of Boating and Waterways
DCC	Delta Cross Channel
DDE	dichloro-diphenyl-dichloroethylene
DDT	dichloro-diphenyl-trichloroethylene
DEET	diethyl-meta-toluamide
Delta	Sacramento–San Joaquin Delta
Delta LRMP	<i>Land and Resource Management Plan for the Primary Zone of the Delta</i>
Delta Reform Act	Sacramento–San Joaquin Delta Reform Act
DEM	digital elevation model
DFG	California Department of Fish and Game
DFM	Division of Flood Management
diesel PM	particulate matter from diesel-fueled engines
DOC	California Department of Conservation
DOE	Department of Energy
DOF	California Department of Finance
DOGGR	California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
DOT	U.S. Department of Transportation
DPC	Delta Protection Commission
DPEIR	draft program environmental impact report
DPH	California Department of Public Health
DPS	distinct population segment
DSM	deep soil mixing
DSOD	California Department of Water Resources, Division of Safety of Dams
DTSC	California Department of Toxic Substances Control
DWB	California Department of boating and Waterways

DWR	California Department of Water Resources
EA	environmental assessment
EAD	Estimated Annual Damages
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EC	electrical conductivity
<i>E. coli</i>	<i>Escherichia coli</i>
EDD	California Employment Development Department
EID	El Dorado Irrigation District
EIP	Early Implementation Program
EIR	environmental impact report
EMF	electromagnetic field
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESA	Environmental Site Assessment
ESU	evolutionarily significant unit
ET	evapotranspiration
ETL	engineering technical letter
Extended SPA	extended systemwide planning area
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FAT	Fresno-Yosemite International Airport
F-BO	Forecast-Based Operations
F-CO	Forecast-Coordinated Operations
FCSSR	Flood Control System Status Report
FE	federally listed endangered species
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Aviation Noise
FIP	Floodplain Inundation Potential
FMMP	Farmland Mapping and Monitoring Program

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FPEIR	final program environmental impact report
FR	<i>Federal Register</i>
Framework Agreement	<i>California's Central Valley Flood System Improvement Framework</i>
FRAP	California Fire and Resource Assessment Program
FRAQMD	Feather River Air Quality Management District
FROA	Floodplain Restoration Opportunity Analysis
FRRPD	Feather River Recreation and Park District
FSRG	Friends of the Sacramento River Greenway
FSZ	Farmland Security Zone
FT	federally listed threatened species
FTA	Federal Transit Administration
g/hp-hr	grams per horsepower hour
GAMA	Ground-Water Ambient Monitoring and Assessment
GBVAB	Great Basin Valleys Air Basin
GCS	Government Code Section
<i>Goleta</i>	<i>Citizens of Goleta Valley v. Board of Supervisors</i> (1990) 52 Cal.3d 553, 574
GHG	greenhouse gas
GIS	geographic information system
gpm	gallons per minute
GWP	global warming potential
HAA	Habitat Analysis Area
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAP	hazardous air pollutant
HAR	Height Above River
HCD	California Department of Housing and Community Development
HCP	habitat conservation plan
HFC	hydrofluorocarbon
hp	horsepower
HVAC	heating, ventilation, and air conditioning
I-5	Interstate 5
I-505	Interstate 505

I-80	Interstate 80
IFM	Integrated Flood Management
IHA	Indicators of Hydrologic Alteration
in/sec	inches per second
in/year	inches per year
IPCC	Intergovernmental Panel on Climate Change
IS	initial study
ITE	Institute of Transportation Engineers
IWM	instream woody material
JFP	Joint Federal Project
kg/gal	kilograms per gallon
L _{dn}	day-night average noise level
L _{eq}	equivalent hourly average noise level
L _{max}	maximum sound level
L _{min}	minimum noise level
LCC	League of California Cities
LCAB	Lake County Air Basin
LCFS	Low Carbon Fuel Standard
LCM	life-cycle management
LEERD	lands, easements, rights-of-way, relocations and disposals
LESA	Land Evaluation and Site Assessment
LiDAR	light detection and ranging
LMA	local maintaining agency
LNG	liquefied natural gas
LOS	level of service
LOSRA	Lake Oroville State Recreation Area
LRC	Life Risk Calculation
LRMP	land and resource management plan
LSJRFS	Lower San Joaquin River Feasibility Study
LTMA	long-term management activity
LTMS	<i>Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region</i>
L _x	statistical descriptor

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M&I	municipal and industrial
Ma	millions of years ago
MAF	million acre-feet
MBTA	Migratory Bird Treaty Act
MCAB	Mountain Counties Air Basin
MCL	maximum contaminant levels
mg/L	milligrams per liter
MID	Merced Irrigation District
MID	Modesto Irrigation District
MLD	Most Likely Descendant
mm	millimeter
MMRP	mitigation monitoring and reporting plan
Mmt	million metric tons
mm/year	millimeter per year
MOD	Modesto City-County Airport
Modified SSIA	Modified State Systemwide Investment Approach
mph	miles per hour
MPO	metropolitan planning organization
MSHCP	multi-species habitat conservation plan
mt	metric tons
MVCAC	Mosquito and Vector Control Association of California
MW	megawatt(s)
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHB	National Association of Home Builders
NAHC	Native American Heritage Commission
Napa County FC&WCD	Napa County Flood Control and Water Conservation District
National System	National Wild and Scenic Rivers System
NCCP	natural community conservation plan
NED	National Economic Development
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NESHAPs	national emissions standards for hazardous air pollutants

NF ₃	nitrogen trifluoride
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NLIP	Natomas Levee Improvement Program
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	notice of preparation
NO _x	oxides of nitrogen
NPAB	Northeast Plateau Air Basin
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRA	National Recreation Area
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTMA	near-term management activity
NULE	nonurban levee evaluation
NWR	national wildlife refuge
O&M	operations and maintenance
OHP	State Office of Historic Preservation
OID	Oakdale Irrigation District
OPC	California Ocean Protection Council
OPLMA	Omnibus Public Land Management Act
OPR	Governor's Office of Planning and Research
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
P-C	Production-Consumption
PCB	polychlorinated biphenyl
PCFCWCD	Placer County Flood Control and Water Conservation District
PCWA	Placer County Water Agency
PEIR	program environmental impact report
PFC	perfluorocarbon

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PG&E	Pacific Gas and Electric Company
PGL	Policy Guidance Letter
PL	Public Law
PM _{2.5}	particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less
PM ₁₀	particulate matter with an aerodynamic diameter of 10 micrometers or less
POD	Pelagic Organism Decline
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
ppt	parts per thousand
PPV	peak particle velocity
PRBO	Point Reyes Bird Observatory
PRC	California Public Resources Code
RA	Recreation Area (U.S. Army Corps of Engineers)
RAMP	Regional Advanced Mitigation Planning
RBDD	Red Bluff Diversion Dam
RCRA	Resource Conservation and Recovery Act
RCRC	Regional Council of Rural Counties
RD	Reclamation District
RDD	Redding Municipal Airport
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
Reporting Rule	Final Rule on Mandatory Reporting of Greenhouse Gases
RHJV	Riparian Habitat Joint Venture
RHNA	regional housing needs assessment
<i>Rio Vista</i>	<i>Rio Vista Farm Bureau Center v. County of Solano</i> (1992) 5 Cal.App.4th 351
RM	River Mile
RMP	resource management plan
RMS	root-mean-square
ROD	record of decision
ROG	reactive organic gases
RTP	regional transportation plan
RV	recreational vehicle

RWQCB	regional water quality control board
RWRIS	Integrated Water Resources Information System
SACOG	Sacramento Area Council of Governments
SAFCA	Sacramento Area Flood Control Agency
SB	Senate Bill
SBFCA	Sutter Butte Flood Control Agency
SC	federal species of concern
SCAB	South Coast Air Basin
SCB	soil-cement-bentonite
SCE	Southern California Edison
SCK	Stockton Metropolitan Airport
Scoping Plan	<i>Climate Change Scoping Plan</i>
SCS	sustainable communities strategy
SCWA	Solano County Water Agency
SDWA	Safe Drinking Water Act
SE	State endangered species
SEL	sound exposure level
SERGoM	Spatially Explicit Regional Growth Model
SERP	Small Erosion Repair Program
SEWD	Stockton East Water District
SEWD	Sutter Extension Water District
SF ₆	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFMP	Statewide Flood Management Planning Program
Shasta-Trinity LRMP	<i>Shasta-Trinity National Forest Land and Resource Management Plan</i>
SHPO	State Historic Preservation Officer (or Office)
SIP	State implementation plan
SJAFCA	San Joaquin Area Flood Control Agency
SJDVP	San Joaquin Valley Drainage Program
SJRG	San Joaquin River Group Authority
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin

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SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	California Surface Mining and Reclamation Act
SMF	Sacramento International Airport
SMP	shoreline management plan
SMPA	Suisun Marsh Preservation Agreement
SMUD	Sacramento Municipal Utility District
SO ₂	sulfur dioxide
SoCal	Southern California
SOI	sphere of influence
SO _x	oxides of sulfur
SP	State Park
SPA	Systemwide Planning Area
SPFC	State Plan of Flood Control
SR	State Route
SRA	shaded riverine aquatic
SRA	State Recreation Area (California Department of Parks and Recreation)
SRFCP	Sacramento River Flood Control Project
SRMA	Special Recreation Management Area
SRWP	Sacramento River Watershed Program
SSC	State species of special concern
SSIA	State Systemwide Investment Approach
SSJID	South San Joaquin Irrigation District
SSJVF	Sacramento and San Joaquin Valley and foothills
SSVMS	Sierra Sacramento Valley Medical Society
ST	State-listed threatened species
State	State of California
State Parks	California Department of Parks and Recreation
STNRA	Shasta-Trinity National Recreation Area
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWP	State Water Project

SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
SWTR	Surface Water Treatment Rule
TAC	toxic air contaminant
TAF	thousand acre-feet
Tahoe National Forest LRMP	<i>Tahoe National Forest Land and Resource Management Plan</i>
TCP	traditional cultural property
TDS	total dissolved solids
TID	Turlock Irrigation District
TMDL	total maximum daily load
TMP	transportation management plan
tpy	tons per year
TPZ	Timber Production Zone
TRLIA	Three Rivers Levee Improvement Authority
UC Davis	University of California, Davis
ULE	urban levee evaluation
UPRR	Union Pacific Railroad
U.S. 50	U.S. Highway 50
USA	underground service alert
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
ULDC	Urban Levee Design Criteria
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VERA	Voluntary Emission Reduction Agreement
VdB	vibration decibels
VMS	vegetation management strategy
VMT	vehicle miles traveled
Western	Western Area Power Administration
WHR	California Wildlife Habitat Relationships
Williamson Act	California Land Conservation Act

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WPRR	Western Pacific Railroad
WQCP	<i>Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary</i>
WRDA	Water Resources Development Act
WSRA	Wild and Scenic Rivers Act
YCFB	Yolo County Farm Bureau
YCFCWCD	Yolo County Flood Control and Water Conservation District
YCWA	Yuba County Water Agency
Yuba Accord	Lower Yuba River Accord