

DRAFT - Volumes 1-3

LOS VAQUEROS RESERVOIR EXPANSION PROJECT

Environmental Impact Statement
Environmental Impact Report
State Clearinghouse No. 2006012037

Prepared for
United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Contra Costa Water District
Western Area Power Administration

February 2009



**DRAFT ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT
for the Los Vaqueros Reservoir Expansion Project**

This Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) has been prepared by the Bureau of Reclamation and the Contra Costa Water District (CCWD) in accordance with the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The Western Area Power Administration (Western) is a cooperating agency under NEPA. The reservoir expansion involves enlarging an existing reservoir, building a new intake and pump station and conveyance facilities, provides modified and new power supply facilities, and includes replacement and enhanced recreation facilities. The project purpose is to develop water supplies for environmental water management that supports fish protection, habitat management, and other environmental water needs in the Delta and tributary river systems, and to improve water supply reliability and water quality for urban users in the San Francisco Bay Area.

The Draft EIS/EIR considers four action alternatives and the No Project/No Action Alternative. Alternative 1 includes reservoir expansion to 275 thousand acre-feet (TAF), a new Delta Intake and Pump Station, up to 19 miles of conveyance pipelines, an enlarged Transfer Facility; additional power supply facilities including a new substation; and recreation facilities. The other three alternatives include the same or fewer facility improvements than proposed under Alternative 1.

- Alternative 1 – Expanded 275-TAF Reservoir, South Bay Connection, Environmental Water Management and Water Supply Reliability Dual Emphasis
- Alternative 2 – Expanded 275-TAF Reservoir, South Bay Connection, Environmental Water Management Emphasis
- Alternative 3 – Expanded 275-TAF Reservoir, No South Bay Connection, Environmental Water Management Emphasis
- Alternative 4 – Expanded 160-TAF Reservoir, No South Bay Connection, Water Supply Reliability Emphasis

This Draft EIS/EIR describes and evaluates the potential environmental, social and economic effects of the Los Vaqueros Reservoir Expansion Project (reservoir expansion project). It analyzes the direct, indirect, and cumulative environmental effects of the following resources: Delta hydrology and water quality, Delta fisheries and aquatic resources, earth resources, local hydrology, biological resources, land use, agriculture, transportation and circulation, air quality, noise, utilities and public service systems, hazardous materials and public health, visual/aesthetic resources, recreation, cultural and paleontological resources, socioeconomic effects, environmental justice, Indian Trust Assets, growth-inducing effects, and climate change. The project alternatives would result in significant adverse environmental impacts, after mitigation, to Important Farmland (up to 22 acres) and a potential movement corridor for the San Joaquin kit fox on the west side of the existing reservoir. The project would result in beneficial effects on Delta fisheries and aquatic resources under Alternatives 1, 2, and 4. Alternative 3, however, could result in significant adverse effects on Delta fisheries and aquatic resources.

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“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.”

“The Mission of the Contra Costa Water District is to strategically provide a reliable supply of high quality water at the lowest cost possible, in an environmentally responsible manner.”

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Acronyms and Abbreviations

ABAG	Association of Bay Area Governments
ACHP	Advisory Council on Historic Preservation
ACI	American Concrete Institute
ACTM	Airborne Toxics Control Measure
ACWD	Alameda County Water District
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AF	acre-foot (feet)
AIA	Airport Influence Area
AIP	Alternative Intake Project
AIRFA	American Indian Religious Freedom Act
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effect
ARB	Air Resources Board
ASIP	Action Specific Implementation Plan
ASPIS	Abandoned Sites Program Information System
A.T. & S.F.	Atchison Topeka & Santa Fe
AWWA	American Water Works Association
B	Beneficial Impact
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
BAWAC	Bay Area Water Agencies Coalition
BAWSCA	Bay Area Water Supply and Conservation Agency
BBID	Byron-Bethany Irrigation District
BCDC	Bay Conservation and Development Commission
BDCP	Bay Delta Conservation Plan
BMP	Best Management Practice
BO	Biological Opinion
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
Cal-EPA	California Environmental Protection Agency
CALFED	CALFED Bay-Delta Program
Cal-OSHA	California Occupational Safety and Health Administration
CalSim II	California Simulation Model II; also, California Water Allocation and Reservoir Operations Model
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCC	Contra Costa County

CCCTA	Central Contra Costa Transit Authority
CCIC	Central California Information Centers
CCWD	Contra Costa Water District
CDF	California Department of Forestry
CDFG	California Department of Fish and Game, see DFG
CDP	Census-Designated Place
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
cfs	cubic foot (feet) per second
CHABA	Committee of Hearing, Bio-Acoustics, and Bio-Mechanics
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
Cl	chloride
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO₂	carbon dioxide
CO₂E	Carbon Dioxide Equivalents
COA	Coordinated Operations Agreement
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CSD	Community Services District
CSLC	California State Lands Commission
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
D/DBPR	Disinfectants and Disinfection Byproducts Rule
D-1641	Decision 1641
dB	decibel
dBA	A-weighted decibel
DBP	disinfection byproduct
dB_L	low frequency decibel
DCC	Delta Cross Channel
DD	doubling of distance
DDT	dichlorodiphenyltrichloroethane
Delta	Sacramento-San Joaquin Delta
DFG	California Department of Fish and Game, see CDFG
DHS	California Department of Health Services
DMC-CA	Delta-Mendota Canal - California Aqueduct

DOC	dissolved organic carbon
DOI	Department of the Interior
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DPS	District Population Segment
DSM2	Delta Simulation Model, Version 2
DSOD	California Department of Water Resources, Division of Safety of Dams
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
DWSP	Delta Water Supply Project
E/I	Export-to-Inflow ratio
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EC	electrical conductivity
ECAP	East County Area Plan
ECCCFPD	East Contra Costa County Fire Protection District
ECCCHC	East Contra Costa County Habitat Conservancy
ECCID	East Contra Costa Irrigation District
EDD	Employment Development Department
EDR	Environmental Data Resources
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Fields
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EQ	Environmental Quality
ESA	Endangered Species Act
EWA	Environmental Water Account
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCIR	Farmland Conversion Impact Rating
FCWCD	Flood Control and Water Conservation District
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FMWT	Fall Midwater Trawl (Survey)
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
fps	foot (feet) per second
FRWA	Freeport Regional Water Authority
FRWP	Freeport Regional Water Project

FTA	Federal Transit Administration
FTE	full-time equivalent
FWSI	Future Water Supply Implementation
FWSS	Future Water Supply Study
GHG	Greenhouse Gases
GIS	Geographic Information System
GLO	General Land Office
GPS	Global Positioning System
HAA	haloacetic acids
HAP	hazardous air pollutants
HCP	Habitat Conservation Plan
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HCPA	Habitat Conservation Plan Association
HEP	Habitat Evaluation Procedure
HI	Hazard Index
HPTP	Historic Property Treatment Plan
HUD	Federal Department of Housing and Urban Development
Hz	hertz
I	interstate
I-5	Interstate 5
I-580	Interstate 580
IAIR	Initial Alternatives Information Report
IBC	International Building Code
ICBO	International Conference of Building Officials
IEEPF	Initial Economic Evaluation for Plan Formulation Report
IEP	Interagency Ecological Program
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
IS/MND	Initial Study/Mitigated Negative Declaration
ITAs	Indian Trust Assets
JPOD	Joint Point of Diversion
km	kilometer
kV	kilovolt
kV/m	kilovolt per meter
LAVTA	Livermore Amador Valley Transit Authority
Ldn	day/night noise level
LEDPA	Least Environmentally Damaging Practicable Alternative
LESA	Land Evaluation and Site Assessment
Leq	equivalent noise level
Lmax	maximum noise level
Lmin	minimum noise level

LOS	Level of Service
LOX	Liquid Oxygen
LS	Less-than-Significant Impact
LSM	Less-than-Significant Impact with Mitigation
LSZ	Low Salinity Zone
LUST	Leaking Underground Storage Tank
LV	Los Vaqueros
LVP	Los Vaqueros Project
LX	statistical descriptor
M	moment magnitude
M&I	municipal and industrial
MACT	maximum achievable control technology
MAF	million acre feet
MBTA	Migratory Bird Treaty Act
MCE	Maximum Credible Earthquake
MCL	Maximum Contaminant Level
MDBP Rules	Microbial and Disinfection Byproducts Rules
MEI	Maximally Exposed Individual
mG	miligauss
MG	million gallons
mg/L	milligram per liter
MID	Modesto Irrigation District
MLD	Most Likely Descendant
mm	millimeter
MMHOS/CM	millimhos per centimeter
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
MPP	Multi-Purpose Pipeline
MSCS	Multi-Species Conservation Strategy
MSL	mean sea level
MTC	Metropolitan Transportation Commission
MUN	municipal and domestic supply
MW	megawatts
N₂O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGRPA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCCPA	Natural Communities Conservation Planning Act
NDOI	Net Delta Outflow Index
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for HAPs

NHPA	National Historic Preservation Act
NI	No Impact
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO₂	Nitrogen dioxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NOTAM	Notice to Airmen
NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRDC	Natural Resources Defense Council
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Units
NWIC	Northwest Information Center
NWS	Naval Weapons Station
OCAP	Operations Criteria and Plan
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OHWM	ordinary high water mark
OMB	Office of Management and Budget
OPR	Office of Planning and Research
OSHA	U.S. Department of Labor Occupational Safety & Health Administration
P.L.	Public Law
PA	Programmatic Agreement
PCE	Primary Constituent Elements
PFMC	Pacific Fishery Management Council
PG&E	Pacific Gas and Electric
PM	Particulate matter
POD	Pelagic Organism Decline
ppm	Parts per million
ppt	Parts per thousand
PPV	Peak particle velocity
PRC	Public Resources Code
PRPA	Paleontological Resources Preservation Act
PTM	Particle tracking model
QWEST	Parameter that represents the estimated net westward flow of the San Joaquin River at Jersey Point
RBDD	Red Bluff Diversion Dam
RCRA	Resource Conservation and Recovery Act

RD	Reclamation District
REC	Recognized Environmental Condition
RECLAMATION	U. S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region
RFTA	Reserve Forces Training Area
RMS	root mean square
ROD	Record of Decision
ROG	reactive organic gases
ROW	right-of-way
RTS	reservoir triggered seismicity
RWQCB	Regional Water Quality Control Board
SBA	South Bay Aqueduct
SCVWD	Santa Clara Valley Water District
SDIP	South Delta Improvement Program
SDWA	Safe Drinking Water Act
SEL	Single Event (Impulsive) Noise Level
SFBAB	San Francisco Bay Air Basin
SFPUC	San Francisco Public Utilities Commission
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJMSCP	San Joaquin Multi-Species Habitat Conservation and Open Space Plan
SJRHR	San Joaquin River Hydrologic Region
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SKT	Spring Kodiak Trawl (Survey)
SMCL	Secondary Maximum Containment Level
SO₂	Sulfur dioxide
SOD	South of Delta
SR	State Route
SR-4	State Route 4
SRA	State Recreation Area
SRHR	Sacramento River Hydrological Region
SSUAF	Sonoma State University Academic Foundation
SU	Significant Unavoidable Impact
SWC	State Water Contractors
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	California State Water Resources Control Board
SWTR	Surface Water Treatment Rule
TAC	toxic air contaminants
TAF	thousand acre-foot (feet)
TBACT	Toxic Best Available Control Technology
TDS	Total Dissolved Solids
TERPS	Terminal Instrument Procedures
Tg	Teragrams
THM	trihalomethanes

TMDL	Total Maximum Daily Load
TNS	Summer Tow Net (Survey)
TOC	total organic carbon
TPY	tons per year
U.P.	Union Pacific
UCMP	University of California Museum of Paleontology
ULL	Urban Limit Line
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNWS	United States National Weather Service
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
V	Volt
VAMP	Vernalis Adaptive Management Plan
Vdb	decibel notation
VDE	Visible Dust Emissions
VMT	vehicle miles traveled
WDR	Waste Discharge Requirements
Western	Western Area Power Administration
WMO	World Meteorological Organization
WQCP	Water Quality Control Plan
X2	2 parts per thousand salinity isohaline
Zone 7	Alameda County Flood Control and Water Conservation District, Zone 7
µS/cm	MicroSiemens per centimeter