



FINAL DRAFT • DECEMBER 2015

PUBLIC WORKS INTEGRATED MASTER PLAN  
Project Memorandums  
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General Overview  
VOLUME 1 of 7



# General Overview

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PUBLIC WORKS  
Integrated Master Plan  
Project Memorandums





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Water System  
VOLUME 2 of 7



# Water System

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# Recycled Water System

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Stormwater System  
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# Stormwater System Streets

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CITY OF

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**CITY OF OXNARD**  
**PUBLIC WORKS INTEGRATED MASTER PLAN**

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**LIST OF ACRONYMS**

3WHP	high pressure 3 water pumps
A	agriculture
AA	Average Annual
AACE	Advancement of Cost Engineering International
AAD	average annual demand
AB	Assembly Bill
ACA	Asset Change Administration
ACI	American Concrete Institute
ACIA	Arctic Climate Impact Assessment
ACP	asbestos cement pipe
ADC	Alternate Daily Cover
ADD	average day demand
ADMMF	average day maximum month day flow
ADMM	average day maximum month
ADW	average dry weather
ADWF	average dry weather flow
AFY	acre feet per year
AG	agricultural
AOP	Advanced Oxidation Process
API	application program interface
AR	arc-rated
AR4	Fourth Assessment Report
ARB	Air Resources Board
ASCE	American Society of Civil Engineers
ASR	Aquifer Storage and Recovery
AST	activated sludge tank
AWPF	Advanced Water Purification Facility
BFP	belt filter presses
BI	Business Intelligence
BMP	best management practices
BOD <sub>5</sub>	biochemical oxygen demand
BPJ	Best Professional Judgment
BS	Blending Station

C	commercial
C1	Commerical Water High Use
CAA	Clean Air Act
CAAP	Climate Action and Adaptation Plan
CalRecycle	California Department of Resources Recycling and Recovery
CAL EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CASA	California Association of Sanitation Agencies
CASQA	California Stormwater Quality Association
cBOD	carbonaceous BOD
CC	commercial restaurant
CCFRPM	centrifugally cast, glass-fiber-reinforced, polymer mortar
CCR	California Code of Regulations, Consumer Confidence Report
CCT	chlorine contact tank
CDFA	California Department of Food and Agriculture
CDPH	California Department of Public Health
CEC	Constituents (compounds) of Emerging Concern
CEPT	Chemically Enhanced Primary Treatment
CEQA	California Environmental Quality Act
CH <sub>4</sub>	methane
CI	Commercial Irrigation
CIP	Capital Improvement Program, cast iron pipes, Clean In Place
CIS	Customer Information System
City	The City of Oxnard, CA
CIWEM	Chartered Institution of Water and Environmental Management
CM	commercial meters
CMMS	Computerized Maintenance Management System
CMWD	Calleguas Municipal Water District
CNG	compressed natural gas
CO <sub>2</sub>	carbon dioxide
COM	commercial
COS	Cost of Service
CP	Cathodic Protection
CS	Cesar Chavez School
CTR	California Toxics Rule
CURB	City Urban Restriction Boundary
cVOCs	Combined Volatile Organic Compounds

CWA	Clean Water Act
CWT	Centralized Waste Treatment
D/DBPR	Disinfectants and Disinfection Byproducts Rule
DAFT	dissolved air floatation thickeners
d/D	depth to diameter
DDF	depth-duration-frequency
DDW	Division of Drinking Water
DEM	Digital Elevation Model
DFIRM	digitized flood insurance rate map
DHS	Department of Homeland Security
DIP	ductile iron pipe
DOF	Department of Finance
DPR	Direct Potable Reuse
DU	dwelling units
DWF	dry weather flow
DWR	Department of Water Resources
E&IC	Electrical and Instrumentation/Controls
EAM	Enterprise Asset Management
EAP	Energy Action Plan
ECRPC	Environment California Research and Policy Center
EcRUL	Economic Remaining Useful Life
EDC	endocrine disrupting compounds
EDMS	Electronic Document Management System
EDSP	Endocrine Disruptor Screening program
EDSTAC	Endocrine Disruptor Screening and Testing Advisory Committee
EDU	Equivalent Dwelling Units
EI&C	Electrical, instrumentation, and control
ELA	enterprise license agreement
ELAC	engineering, legal, administration, and construction management
ELP	energy leader partnership
EMI	Electro-magnetic Interference
ENR	Engineering and News Records
EPA	Environmental Protection Agency
EPS	Extended period simulation
EQ	equalization, equalization basins
ERP	Enterprise Resource Planning
ETo	evapotranspiration

EvRUL	Evaluated Remaining Useful Life
FAT	full advanced treatment
FBI	fluidized bed incineration
FCGMA	Fox Canyon Groundwater Management Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Financial Information System
FOG	fats, oil, and grease
fps	feet per second
FRP	fiberglass reinforced pipe (or plastic)
ft <sup>3</sup> /d	cubic feet per day
GB	Government Buildings
GCM	general circulation models
GHG	greenhouse gas
GI	Government Irrigation
GIS	Geographic Information Systems
GL	General Ledger
GMA	Groundwater Management Agency
GP	General Plan
gpcd	gallons per capita per day
gpd	gallons per day
gpd/ac	gallons per day per acre
gpd/sf	gallons per day per square foot
gpm	gallons per minute
gpm/sf	gallons per minute per square foot
GREAT	Groundwater Recovery Enhancement and Treatment
GRP	Groundwater Recharge Projects
GW	groundwater
HAA5	haloacetic acids
HDPE	high density poly ethylene
HGL	hydraulic grade line
HMI	Human Machine Interface
hp	horsepower
hrs	hours
HRT	hydraulic detention time
HRT	hydraulic solids load rate
I	Industrial

I/I	infiltration/inflow
I/O	input/output
I1	Industrial Proctor and Gamble
I2	Industrial SCE
I3	Industrial High Use
ICS	Industrial Control Systems
ID's	Identifiers
IDSE	Initial Distribution System Evaluation
II	Industrial Irrigation
IIMM	International Infrastructure Management Manual
IND	industrial
IPCC	Intergovernmental Panel on Climate Change
IPR	Indirect Potable Reuse
ISB	Independent Science Board
ISI	Institute for Sustainable Infrastructure
IT	Information Technology
JDH	JDH Corrosion Consultants, Inc.
kVA	kilovolt-ampere
LARWQCB	Los Angeles Regional Water Quality Control Board
lb/hr	pounds per hour
lb/sf/day	pounds per square foot per day
lb/sf/hr	pounds per square foot per hour
lbs VS/CF/day	pounds volatile solids per cubic foot per day
LCP	local control panel
LCR	Lead and Copper Rule
LID	Low Impact Development
LGS	Local Government Schema
LOR	local-off-remote
LOS	level of service
LRAA	Locational Running Annual Averages
LS	Single-Family Larger Lot
M	Multiple Unit
MACT	maximum achievable control technology
MAMS	Mobile Asset Management Systems
MBR	membrane bioreactors
MC	measurable criteria
MCC	Motor Control Center

MCL	maximum contaminant levels
MCLG	maximum contaminant level goals
MD	Maximum day
MDD	Maximum day demand
MDD + FF	Maximum day demand plus fire flow
MF	membrane filtration, microfiltration
MFR	Multi Family Residential
MG	million gallon
mg/L	milligrams per liter
mgd	million gallons per day
MH	HSG Multiple Unit
MHF	multiple hearth furnaces
MHHW	mean higher-high water
min	minutes
MinHD	minimum hour demand
MinMD	Minimum month demand
MIX	mixed use
ML	mixed liquor
ml/L	milliliters per liter
MLSS	mixed liquor suspended solids
MMD	Maximum month demand
MSL	mean sea level
MT	Million Tons
MTBE	Methyl Tertiary Butyl Ether
MW	Maximum week
MWDSC	Metropolitan Water District of Southern California
N <sub>2</sub> O	nitrous oxide
NAS	National Academy of Sciences
NAVD	North American Vertical Datum
NBVC	Naval Base Ventura County
NCDC	National Climatic Data Center
NEC	National Electric Code
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NPB	North Power Building

NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Regulations
NRCS	National Resources Conservation Service
NTU	Nephelometric Turbidity Units
O&M	Operations and Maintenance
°C	degrees Celcius
OEHHA	Office of Environmental Health Hazard Assessment
°F	degrees Fahrenheit
O-H	Oxnard-Hueneme
OID	Oxnard Industrial Drain
OP	overarching principles
OPC	Open Productivity and Connectivity
OS	open space
OSHA	Occupational Safety and Health Administration
OUL	Original Useful Life
OVMWD	Ocean View Municipal Water District
OWTP	Oxnard Wastewater Treatment Plant
PCB	Polychlorinated biphenyls
PCIS	Process Control Interface System
PDWF	peak dry weather flow
PHD	peak hour demand
PHG	Public Health Goals
PHWA	Port Hueneme Water Agency
PHWWF	peak hour wet weather flow
PID	process identification document
PLC	programmable logic controllers
PM	particulate matter, project memorandums, preventive maintenance
POTW	publicly owned treatment works
POU	point of use
ppb	parts per billion
ppd	pounds per day
ppd/sf	pounds per day per square foot
PPE	personal protective equipment
pph	pounds per hour
PPP	public-private partnerships
PRS	pressure reducing station
PRV	pressure reducing valves

PS	primary sludge, pump station
psi	per square inch
PVC	polyvinyl chloride
PVCWD	Pleasant Valley County Water District
PW	Public Works
PWGDB	Public Works Geodatabase
PWIMP	Public Works Integrated Master Plan
PWWF	peak wet weather flow
QA/QC	quality assurance and quality control
R&R	rehabilitation and replacement
RAS	return activated sludge
RCP	reinforced concrete pipe
RDI	rain dependent infiltration
RDII	Rain Derived Infiltration and Inflow
RFP	requests for proposals
rms	root mean square
RO	reverse osmosis
ROI	return on investment
ROWD	report of waste discharge
RPA	Reasonable Potential Analysis
RSTP	Rapid Spanning Tree Protocol
RW	recycled water
RWBS	Recycled Water Backbone System
RWQCB	Regional Water Quality Control Board
S	Single Family
SBCWA	Santa Barbara County Water Agency
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCS	Soil Conservation Service
SDWA	Safe Drinking Water Act
SE	site edition
SFR	Single Family Residential
SH	HSG Single Unit
SIU	significant industrial users
SMP	Salinity Management Pipeline
SNMP	Salt Nutrient Management Plans

SOAR	Save Open Space and Agricultural Resources
SP	Special Publication
SRT	solids residence (retention) time
SS	School Commercial
SSMP	sewer system management plan
SST	secondary sedimentation basins, secondary sedimentation tanks
SVI	sludge volume index
SWBD	service entrance switchboard
SWMM	Storm Water Management Water
SWP	State water project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAG	Technical Advisory Group
TAZ	Traffic Analysis Zone
TCC	time-current curves
TCDD	Tetrachlorodibenzo-p-dioxin
TCE	trichloroethylene
TDS	total dissolved solids
TEA	Temporary Extraction Allocation
TMDL	Total Maximum Daily Load
TS	total solids, thickened sludge
TSS	total suspended solids
TTHM	total trihalomethanes
TWAS	thickened waste activated sludge
UF	ultrafiltration
UIC	underground injection control
US EPA	United States Environmental Protection Agency
UV	ultraviolet light
UV/AOP	ultraviolet/advanced oxidation process
UV/AOX	ultraviolet/advanced oxidation
UWCD	United Water Conservation District
UWMP	Urban Water Management Plan
V&A	V&A Incorporated
VCFCD	Ventura County Flood Control District
VCP	vitrified clay pipe
VCWPD	Ventura County Watershed Protection District
VFD	Variable Frequency Drive

VSLR	volatile solids load rate
VSR	volatile solids reduction
VSS/d/cuft	volatile suspended solids per day per cubic foot
WAN	Wide Area Network
WaPUG	Wastewater Planning Users Group
WAS	waste activated sludge
WDF	water demand factors
WDR	Waste Discharge Requirements
WEF	Water Environment Federation
WEF/ASCE	Water Environment Federation/America Society of Civil Engineers
WIMS	Work Information Management System
WMP	water master plan
WO	Work Orders
WQBEL	Water Quality Based Effluent Limit
WQO	water quality objectives
WRR	Water recycling requirement
WWF	wet weather flow
XFMR	transformer
ZSI	Zone Selective Interlocking