

# ACRONYM LIST AND GLOSSARY

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<b>Term</b>	<b>Definition</b>
40-mgd Scenario	A discharge conveyance flow scenario which would use the Geysers Recharge Conveyance System to continue discharging to the Laguna from Delta Pond, but in addition, the system would convey as much as 29 mgd through the GRCS to a new discharge site on the Russian River.
80-mgd Scenario	A discharge conveyance flow scenario which would have no Laguna discharge and would convey as much as 69 mgd through the Geysers Recharge Conveyance System to a new discharge site or sites (reserving 11 to 20 mgd capacity for Geysers recharge).
µg/l	Micrograms per liter
ABAG	Association of Bay Area Governments
ACOE	Army Corps of Engineers
ACWA	Association of California Water Agencies
ADWF	Average dry weather flow - The average amount of water flowing through a system (often a wastewater treatment system) during dry weather.
AMEL	Average monthly effluent limitation
Ammonia (NH <sub>3</sub> -N)	Constituent in wastewater which can result in toxicity to fish and reduce dissolved oxygen.
AMT	Advanced membrane treatment - For the purpose of the Draft Engineering Report, AMT is defined as a process utilizing reverse osmosis (RO) membranes with microfiltration (MF) and/or ultrafiltration (UF) for pretreatment (to be determined by piloting).
APCD	Air Pollution Control District
APE	Area of potential effects
AQCM	Air Quality Management District
ARB	Air Resources Board
ARM	Aggregate Resources Management
BAAQMD	Bay Area Air Quality Management District
BG	Billion gallons
BLM	U.S. Bureau of Land Management
BLM	Biotic Ligand Model
BMPs	Best Management Practices
BPA	Basin Plan Amendment
BPS	Booster pump station - A pump station located in the Geysers Pipeline, in a location where some pressure already exists, and designed to raise (boost) the pressure in the pipe.

<b>Term</b>	<b>Definition</b>
BPU	Santa Rosa Board of Public Utilities - A group of seven members, appointed by the Santa Rosa City Council that has general policy authority and direction over the management and operation of the City's water and sewer utilities. The Board also directs other utility operations managed by the City and utilities owned or operated by the City.
CalOHSAs	California Occupational Safety and Health Administration
CAP	Clean Air Plan
CARB	California Air Resources Board
CCP	Cities for Climate Protection
CCR	California Code of Regulations
CEQA	California Environmental Quality Act - A California law that sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process requires agencies to identify significant environmental impacts associated with a proposed project, and to substantially lessen or avoid those impacts by means of feasible alternatives or mitigation measures.
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
COPECs	Chemicals of potential concern
CTR	California Toxics Rule - Regulatory criteria established by the California State Water Resources Control Board for pollutants that may have a toxic effect on aquatic organisms in the receiving water. CTR criteria are also established for the protection of human health.
CTS	California Tiger Salamander
CWA	Clean Water Act
CY	Cubic yards
dB	Decibel
dBA	A-weighted decibel
DCP	Discharge Compliance Project
Delta Pond	Named for its shape after the Greek symbol, this is a 2,000 acre-foot recycled water storage facility that can seasonally discharge under certain flow conditions and is part of the Subregional Water Reuse System.
Demand Scenarios	Developed for the water balance model, several model simulations were developed to evaluate recycled water management alternatives, which consist of various levels of reuse or reduction in discharge to identify storage and discharge management options. Baseline conditions are simulated by demand scenario 1 and several additional demand conditions based on various reuse elements and discharge locations are simulated by demand scenarios 2A through 2E. The Geysers Expansion Project includes a delivery schedule that is very similar to reuse/demand condition associated with demand scenario 2D.

<b>Term</b>	<b>Definition</b>
DFG	California Department of Fish and Game
Direct discharge	A means of discharge in which recycled water is introduced into a water body either by direct flow or through a very short indirect path, such as a thin layer of riverbed material.
DNL	Day/night average sound level
DO	Dissolved oxygen - The amount of free (not chemically combined) oxygen dissolved in water, wastewater, or other liquid, usually expressed in milligrams per liter, parts per million, or percent of saturation. Adequate concentrations of dissolved oxygen are necessary for the life of fish and other aquatic organisms and the prevention of offensive odors.
DPH	California Department of Public Health
Driest year	The single year of record with the lowest total level of precipitation, and thus the lowest volume of recycled water, in the Subregional Water Reuse System.
DTSC	Department of Toxic Substance Control
EIR	Environmental Impact Report - A report required by the California Environmental Quality Act to identify the significant environmental impacts of a proposed project together with feasible alternative and mitigation measures that avoid or substantially lessen those impacts.
EIR Certification	Verification by a lead agency that the Final EIR has been completed in compliance with CEQA; that the decision-making body has reviewed and considered the information contained in the Final EIR; and that the Final EIR reflects the lead agency's independent judgment.
ELAP	Environmental Laboratory Accreditation Program
ENR	Enhanced nutrient removal – one of several operational and technology options to increase the removal of nitrogen and phosphorus from recycled water.
ESU	Evolutionarily significant unit
Exclusionary criteria	Criteria used in the site selection process that eliminated a specific location from further consideration. Used during the first step in the site selection process.
Existing permit temperature and DO limits	Receiving water limitations for temperature and dissolved oxygen that are based on water quality objectives contained in the Basin Plan and are a required part of the City of Santa Rosa's existing NPDES permit (Order No. R1-2006-0045).
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
Fish-based objectives (for temperature and DO)	Temperature and dissolved oxygen objectives, developed by the City of Santa Rosa's fisheries biologists in collaboration with the Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS), that would be protective of salmonid fish at each life stage in the Laguna and the Russian River while providing a basis to evaluate scenarios for the Discharge Compliance Project.

<b>Term</b>	<b>Definition</b>
Floodplain	A low, flat area on either side of a river that can accommodate large amounts of water during a flood, lessening flood damage further downstream.
fps	Feet per second
FSC	Federal species of concern
General Plan	A plan that must be adopted by local land-use jurisdictions (cities and counties) under the State Planning and Zoning Law. The General Plan is commonly referred to as a “constitution” for growth. Among other things, the plan includes a “land-use element,” which designates different areas within the agency as suitable for particular development. General plans typically have a planning horizon of ten or more years.
Geysers deliveries	Delivery to the Geysers for steamfield injection is represented in the water balance model as two components, one with a higher priority (Tier I) and one with a lower priority (Tier II).
GEP	Geysers Expansion Project
Geysers Pipeline turnout	A location along the Geysers Pipeline where a lateral pipe connects to the main pipe to convey recycled water to a location different than the Geysers Steamfield.
GIS	Geographic Information System
GPC	Geysers Power Company, LLC, a Delaware limited liability company owned by Calpine Corporation, that owns and operates facilities at the Geysers Steamfield and contracts with the City of Santa Rosa for recycled water deliveries.
GPL	Geysers Pipeline
GRCS	Geysers Recharge Conveyance System - The pipeline and four pump stations conveying recycled water from the Laguna Plant to the Geysers Steamfield for subsequent power generation.
Geysers Recharge Project	A cooperative effort among the City of Santa Rosa, the State Lands Commission, and Geysers Power Company, to help meet the recycled water discharge demands of the communities served by the Santa Rosa Subregional Water Reuse System. The Geysers Recharge Project provides storage and conveyance of recycled water for injection in the Geysers Steamfield and subsequent use in electricity generation.
Headworks	First step in the treatment process which includes screening of large debris, flow measurement, and grit and sand removal
I & I	Infiltration and inflow – Storm- and/or groundwater entering a sanitary sewer system through cracked pipes, leaky manholes, or improper connections.
In-bank diffuser	In-bank diffusers are defined here as any method of discharge through which recycled water enters the ambient flow stream through perforated pipes constructed in a riverbank.
In-bed diffuser	In-bed diffusers are similar to in-bank diffusers, but discharge is accomplished through either well screens or perforated pipes, and an in-bed diffuser is constructed in bottom sediments.

<b>Term</b>	<b>Definition</b>
Indirect discharge	A means of discharge by which recycled water is introduced to the subsurface an appreciable distance from a water body. Discharge is achieved indirectly through mixing with naturally occurring groundwater flow entering a surface water body as subsurface flow.
Infiltration basin	A method of indirect discharge. Discharging directly to the saturated zone, infiltration basins are deep ponds that remain filled with water throughout the year. Water discharged into an infiltration basin escapes the basin through the side or bottom by infiltrating groundwater. A typical example of an infiltration basin is a gravel-mining pit.
Injection well	A method of indirect discharge. Injection wells add water to the saturated zone, but they do so through a screened well where recycled water is pumped down the well and mixes with the groundwater flow system.
In-river diffuser	As defined here, an in-river diffuser configuration consists of a pipe fitted with well-defined ports through which recycled water flows to discharge. A diffuser is a type of outfall. Diffusers can be configured in many ways to achieve the best possible mixing.
IRWP	Incremental Recycled Water Program - Adopted by the City of Santa Rosa, managing partner of the Subregional Water Reuse System, to address additional wastewater flow rates resulting from updates to partnering cities' general plans and increasingly stringent water quality regulations.
Laguna Agriculture (Tier I and Tier II)	Deliveries for agriculture within the Laguna de Santa Rosa are represented in the water balance model as two components: a higher priority, firm delivery component (Tier I), and a lower priority (Tier II) component that can be employed when excess water is available.
Laguna Plant	Laguna Subregional Water Reuse Facility
Lateral pump station	A pump station located on a pipe lateral from the Geysers Pipeline, designed to increase the pressure in the pipe for conveyance to a specific discharge facility.
Laguna Scenario	A discharge conveyance flow scenario which would continue to use the existing conveyance system to convey recycled water to the existing discharge site in the Laguna at Delta Pond.
Laguna Storage	Total available storage in the various ponds where City water is stored within the Laguna de Santa Rosa.
LEL	Laguna Environmental Laboratory
Master Plan	Identifies a combination of alternatives (a "Program") that best meets IRWP's objectives and provides the basis for selecting a preferred Program by addressing engineering, environmental, and economic issues.
MCL	Maximum contaminant level
MDEL	Maximum daily effluent limitation
Median year	The statistical median volume of recycled water flow, from a data set including all years of record.

<b>Term</b>	<b>Definition</b>
Metals translators	A method for regulators to adjust CTR criteria for local conditions. The metals translator is a tool for environmental scientists and permit writers to use in calculating the amount of a metal that may be discharged from a facility to a surface water body based on how the metal is distributed (partitioned) between water and sediments in the receiving stream.
MF	Microfiltration - A process for filtering water by forcing it through a screen with very small pores (0.1 to 2 microns in diameter).
MG	Million gallons
mgd	Million gallons per day (a measurement of flow)
mg/l	Milligrams per liter (a measurement of concentration of a substance in liquid)
mg-N/l	Milligrams nitrogen per liter
mg-P/l	Milligrams phosphorous per liter
mgd	Million gallons per day - A common unit of measure for water flow rates.
Mixing zone	Area where a recycled water discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where water-quality criteria can be exceeded as long as acutely toxic conditions are prevented (EPA, 2000).
MRZ	Mineral Resource Zone
MSC	Merritt Smith Consulting
NCRWQCB	North Coast Regional Water Quality Control Board
ND	Value was below detection
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System - Part of the Clean Water Act requiring municipal and industrial wastewater treatment facilities to obtain permits that specify the types and amounts of pollutants that may be discharged into natural water bodies.
NTR	National Toxics Rule
NTU	Nephelometric turbidity unit. A measurement of turbidity in water.
Nutrient Removal	Treatment process which removes nitrogen and/or phosphorus from wastewater
O&M	Operation and maintenance
Percolation ponds	A method of indirect discharge. Utilizing both the unsaturated, or vadose, zone and the saturated zone, percolation ponds are large, shallow ponds that are filled intermittently and from which water is allowed to drain, or percolate, to underlying groundwater.

<b>Term</b>	<b>Definition</b>
Planning-level estimate of probable costs	These costs were developed based on specific design criteria defined through the EIR and IRWP Master Planning documents, cost data from previous projects, and professional experience. Unit costs for power, chemicals, and labor are representative of costs in the San Francisco Bay Area, in 2007 dollars. Cost estimates are representative of "Class 4," which is generally prepared based on a conceptual or budget level. The Class 4 estimate, as defined by the Association for the Advancement of Cost Engineering (AACE, 1997), is prepared for a low level of project definition where process technologies are being compared and the design criteria are not defined. The cost estimate is based on the 1 to 15 percent Engineering Design Level. This design level is used for comparison of design concepts or in feasibility studies. The expected accuracy is within +120 percent to -60 percent.
POTW	Publicly owned treatment works
Preferential criteria	Criteria used in the second step of the site selection process as a means of ranking the acceptability of a specific location for situating discharge facilities.
Pressurized leach system	A method of indirect discharge. Pressurized leach systems discharge recycled water into the unsaturated zone via subsurface distribution systems, just below the surface and above the saturated zone.
Priority pollutants	Any substance listed on EPA's list of 126 pollutants or group of pollutants that are or may be toxic; these include both organic compounds and metals.
Proposed BPA objectives (for temperature and DO)	Temperature and dissolved oxygen receiving-water objectives for the Laguna and the Russian River proposed by the NCRWQCB as an amendment to the Basin Plan.
PS	Pump station - A location in a pipe network where water is pumped to increase the pressure in the pipe system.
Riverbank outfall	For the purposes of this report, an outfall is defined as a structure or facility located on the banks of, and/or in, a river, through which recycled water is discharged directly into the river.
RO	Reverse osmosis - A process of desalination where pressure is applied continuously to the feed-water, forcing water molecules through a semipermeable membrane. Water that passes through the membrane leaves the unit as cleaner water; most of the dissolved impurities remain behind.
RW	Recycled Water – Water treated to a level suitable for reuse by groundwater recharge, agricultural irrigation or industrial use. Should meet Title 22 requirements.
RWQCB	Regional Water Quality Control Board – the agency responsible for protecting waters of the State and issuing NPDES permits.
SCWA	Sonoma County Water Agency
SFF	site foraging factor. This term most often describes the ratio of the site area to the average home or foraging range for the species of concern.
Stakeholders	Any party that has an interest ("stake") in the outcome of the Discharge Compliance Project, including the public, agencies, environmental groups, commercial entities, etc.

<b>Term</b>	<b>Definition</b>
SWRS	Santa Rosa Subregional Water Reuse System
SIP	State Implementation Plan
SRURP	Santa Rosa Urban Reuse Project
SWRCB	State Water Resources Control Board
T&O	Temperature and oxygenation
TDS	Total Dissolved Solids - A water-quality parameter defining the concentration of dissolved organic and inorganic chemicals in water. After suspended solids are filtered from water and water is evaporated, dissolved solids are the remaining residue.
Title 22	California Administrative Code criterion which defines recycled water treatment requirements.
TKN	Total Kjeldahl nitrogen. Lab analysis to determine the total of ammonia and organic nitrogen.
TM	Technical Memorandum
TMDL	Total Maximum Daily Load - The maximum amount of a particular pollutant that can be discharged into a water body from all sources (point and non-point) without violating water-quality standards. TMDLs are established under the Federal Clean Water Act and require states to distribute this allowable pollution load -- the total maximum daily load of pollution -- among dischargers to the water body subject to the TMDL.
Turbidity	Measure of the clarity of water in Nephelometric Units (NTU).
UF	Ultrafiltration - A process for filtering water by forcing it through a screen with very small pores. Ultrafiltration falls between reverse osmosis and microfiltration in terms of the size of particles removed, with ultrafiltration removing particles in the range of 0.002 to 0.1 microns.
USGS	United States Geological Survey
VFD	Variable-frequency drive
WBM	Water Balance Model - A simulation model that keeps track of the balance of water moving into and out of the Subregional System. It uses hydrologic data to determine the volume of water available for discharge and for the other uses for which Subregional System recycled water is employed.
WDR	Waste Discharge Requirements
WER	Water effects ratio - An appropriate measure of the toxicity of a material obtained in site water divided by the same measure of the toxicity of the same material obtained simultaneously in laboratory dilution water. A correction factor used to adjust a state or regional water-quality standard to account for differences between laboratory water and site water in the toxicity of a specific pollutant.
Wettest year	The single year of record with the highest total level of precipitation, and thus the highest volume of recycled water, in the Subregional Water Reuse System.
WQBEL	Water-quality-based effluent limitations