

Glossary of Terminology and Abbreviations

Acre-foot: A unit used to measure large volumes of water. It equals the volume of water required to cover one acre to a depth of one foot. An acre-foot is 325,851 gallons and is considered enough water to meet the needs of two average-sized families with a house and yard for one year.

Advanced Treatment: Additional treatment provided to remove suspended and dissolved substances after conventional secondary treatment. Often this term is used to mean additional treatment after tertiary treatment for the purpose of further removing contaminants of public health or other water quality concern. This may include membrane filtration, reverse osmosis, and advanced oxidation and disinfection with ultraviolet light and hydrogen peroxide.

AF: Acre-foot. See Acre-foot.

AFY: Acre-feet per year. See Acre-foot.

American Assembly: A process that brings together stakeholders to examine public policy questions and recommends action.

Augmentation: The process of adding recycled water that has received advanced treatment to an existing raw water supply (such as a reservoir, lake, river, wetland and/or groundwater basin) that could eventually be used for drinking water after further treatment.

Avoided costs: The cost savings that may accrue to a water provider if a given water reuse project delays or eliminates the need for a water or wastewater system improvement project.

Beneficial reuse: The use of recycled water for purposes that contribute to the economy or environment of a community.

Beneficial Use (of Water): A use of water resulting in appreciable gain or benefit to the user, consistent with state law, which varies from one state to another. In California, beneficial uses of waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. (Water Code, Section 13050(f)).

Blending: Mixing or combining one water source with another.

Caltrans: California Department of Transportation

City: City of San Diego



Contaminant: A substance in the water that is of public health or welfare concern; also an undesirable substance not normally present or an unusually high concentration of a naturally occurring substance (e.g. viruses, bacteria, pathogens, antibiotics, hormones, dissolved minerals, including salts).

Costs: The capital and operating expenses of constructing and operating a water reuse project. Capital costs are the initial expenditures to design and construct project facilities. Operating costs are the ongoing annual expenses associated with operating the project, including labor, material and energy costs.

Costs of Inaction: The costs of not implementing a proposed project. For reuse projects, these costs may include the cost of obtaining other water supplies to meet a community's needs.

CWA: Clean Water Act (Federal)

Demineralization: A process that removes dissolved minerals from water. In some cases, a percentage of water is demineralized and blended back in with the original source water to dilute the level of dissolved solids in the source water.

DHS: California Department of Health Services

Direct Injection: Injecting recycled water through an injection well directly into a groundwater basin. If the water will later be used for drinking, the recycled water will receive advanced treatment prior to injection.

Direct potable reuse: The addition of advanced treated recycled water (purified water) directly to a potable water distribution system.

Disinfection: Removal or inactivation of any organism.

EPA: U.S. Environmental Protection Agency

Epidemiological: dealing with the scientific study of the incidence, control and spread of disease in a population.

Firm supply: A water supply is considered firm if it is a reliable source for a community, either by legal rights or by natural availability. Recycled water is usually considered to be a firm supply as its source remains available even during dry years.

Graywater: Wastewater from a household or small commercial establishment that does not include water from a toilet, kitchen sink, dishwasher, or water used for washing diapers. Graywater may undergo minimal on-site treatment and be used for underground irrigation when permitted by local health officials.



Groundwater Recharge: Naturally or artificially adding water back into a ground water basin by allowing the water to seep through the ground.

Groundwater: Water beneath the earth's surface that could supply wells or natural springs.

IAP: Independent Advisory Panel. The panel was formed by the National Water Research Institute to provide technical oversight of the Water Reuse Study.

IBWC: International Boundary and Water Commission (Federal)

IID: Imperial Irrigation District

Imported Water: Water that is transported from one area of a region to another.

Indirect Potable Reuse: The blending of advanced treated recycled water into a natural water source (groundwater basin or reservoir) that could be used for drinking (potable) water after further treatment.

IPR: See Indirect Potable Reuse.

MBR: Membrane Bioreactor (type of biological wastewater treatment process).

MCL: Maximum Contaminant Level

MG: Million gallons

MGD: million gallons per day

M&I: Municipal and Industrial

Microfiltration: The separation or removal from a liquid of particulates and microorganisms in the size range of 0.1 to 2 microns in diameter. A micron is a millionth of a meter.

Multiple Treatment Barriers: Each barrier is expected to provide substantial protection, and a requirement for multiple barriers will assure that the water treatment process remains effective even if one treatment barrier fails.

MWD: Metropolitan Water District of Southern California

MWWD: Metropolitan Wastewater Department (City of San Diego)

NCWRP: North City Water Reclamation Plant

Non-potable Reuse: Includes all recycled water reuse applications except those related to drinking water.



NRC: National Research Council

NSA: Northern Service Area

NWRI: National Water Research Institute

O&M: Operation and Maintenance

Ocean Outfall: A large pipeline used to dispose of treated (usually primary or secondary) wastewater several miles offshore.

OEHHA: Office of Environmental Health Hazard Assessment

Operational reliability: The reliability of the City's water treatment and distribution systems to avoid upsets and to continue to serve customers even with individual system elements out of service for maintenance or repair.

OPRA: Ocean Pollution Reduction Act (Federal)

Pathogens: Disease-causing organisms: generally, any viruses, bacteria, protozoa or fungi that cause disease.

Peak: an identified period of time when the maximum amount of water is used.

PPCPs: Pharmaceuticals and Personal Care Products

PUAC: Public Utilities Advisory Committee

Purified water: Recycled water that undergoes advanced treatment to a water quality level suitable for augmentation to a drinking water source.

Reclaimed Water: The end product of wastewater reclamation that meets water quality requirements for biodegradable materials, suspended matter, toxicants and pathogens. Reclaimed water is another name for recycled water.

Recycled Water: Reclaimed water that meets appropriate water quality requirements and is reused for a specific purpose.

Repurified Water: Recycled water treated to an advanced level suitable for augmentation to a drinking water source.

Reverse Osmosis: A water filtration process that uses a membrane that is semi-permeable, allowing purified water to pass through it, while rejecting contaminants.

RO: See reverse osmosis

RWQCB: Regional Water Quality Control Board (State of California)



Secondary Treatment: Removal of biodegradable organic matter and suspended solids from wastewater. Disinfection is also typically included in the definition of conventional secondary treatment.

SBWRP: South Bay Water Reclamation Plant

Soil-Aquifer Treatment: The process of water being purified by percolating through soil and into an underground aquifer.

Supply Reliability: The reliability of the City's combined sources of supply under a variety of hydrologic and other conditions.

Tertiary Treatment: Treatment beyond secondary treatment typically involving the removal of residual particulate matter by granular media, surface or membrane filtration.

Title 22 Treatment: A method of tertiary wastewater treatment approved by California DHS for many water reuse applications. Title 22 outlines the level of treatment required for allowable uses for recycled water, including irrigation, fire fighting, residential landscape watering, industrial uses, food crop production, construction activities, commercial laundries, road cleaning, recreational purposes, decorative fountains and ponds.

UF: See ultrafiltration.

Ultrafiltration: A membrane filtration process that falls between reverse osmosis and microfiltration in terms of the size of particles removed, with ultrafiltration removing particles in the 0.002 to 0.1 micron range, and typically removing organics over 1,000 daltons molecular weight while passing ions and smaller organics.

Ultraviolet Treatment: The use of Ultraviolet light for disinfection.

UV: See Ultraviolet treatment.

Water Authority: San Diego County Water Authority

Water Reuse: The planned use of recycled water for specific beneficial purposes.

Wetland: An area that is inundated or saturated by water and supports plant and animal life. Wetlands also filter pollutants in stream courses, provide flood control and erosion prevention, and may provide recreational opportunities.



EQUIVALENCIES

1 Hundred Cubic Feet (HCF) = .00230 Acre Feet (AF) = 748 gallons

1 AF = 435.6 HCF

1 AF = 43560 cubic feet (cf)

1 AF = 326,000 gallons

1 cf = 7.48 gallons

1 million gallons per day (mgd) = 1120 AF per year

1 AF is approximately the amount of water needed to serve two families of four for a year.

One family of four would typically use 18 HCF per month, or 450 gallons per day.

