

Water Words for the Layperson

A comprehensive glossary of water terminology



Dear Friends,

WESTMARC, a coalition of public, private, education and non-profit leaders is committed to the West Valley's economic vitality and high quality of life. It is a place for stakeholders to connect, collaborate, advocate and take action on key initiatives to support the region's economic growth.

The West Valley of Greater Phoenix continues to be one of the fastest growing regions in the nation. The region is comprised of 15 communities encompassing over 3,000 square miles west of Interstate 17. Our population has grown to 1.8 million residents with a median age of 34.6 years old. This region has evolved rapidly over the past 2 decades and continues to attract new businesses in advanced industries. However, continued success is dependent on ensuring we have adequate resources needed to prosper.

We believe that you might agree with us that water is our most important natural resource not only to survive, but to thrive. That is why we selected this important topic for the 2023 Economic Development Summit. This Summit is intended to give you the foundation of water planning in Arizona, our current situation, future planning needs and most importantly – accurate messages about this topic so you can evangelize the accurate story.

We know that water is a complicated topic so this handout listing key terms that you will hear today may serve as a resource guide as you continue to share information on the future of Arizona's water supply.

WESTMARC values an informed community and appreciates your continued support of the West Valley by seeking opportunities to learn and advocate.

Sincerely,

Jon Howard, WESTMARC Board of Directors Chair
Sintra Hoffman, WESTMARC CEO

Note: Credit to Central Arizona Project, Arizona Department of Water Resources, and Arizona Municipal Water Users Association for contributing to this glossary.



ACRE-FOOT (AF): A water quantity measurement equal to 325,851 gallons (enough to cover one acre of land in water one foot deep).

ACTIVE MANAGEMENT AREA (AMA): A geographical area encompassing aquifers that is designated by the Arizona Department of Water Resources for the purpose of actively managing groundwater. Five AMAs currently exist in Prescott, Phoenix, Pinal, Tucson, and Santa Cruz regions. In general, groundwater use is subject to greater regulation and management in the AMAs.

ADEQUATE WATER SUPPLY PROGRAM: A set of “buyer beware” regulations that apply statewide, outside of the five AMAs. Developers must disclose to the buyer of a lot within a new subdivision whether sufficient water supplies exist for 100 years. The disclosure is only required with the original sale of the lot. Homes can still be sold if there are inadequate water supplies, unless the city or county has chosen to adopt mandatory requirements that there be an Adequate water supply prior to sale of the lot.

AGRICULTURAL WATER USE: Water applied to two or more acres of land to produce plants or parts of plants for sale for human consumption or for use as feed for livestock, range livestock or poultry.

ALLUVIUM: A deposit of earth, sand, and other transported matter left by water flowing over land not permanently submerged; chiefly applied to the deposits formed in river valleys and deltas.

ANNUAL GROUNDWATER ALLOTMENT: In an AMA, the total amount of groundwater a Grandfathered Right (GFR) holder is authorized to withdraw annually.

AQUIFER: An underground geological formation of sand, soil, gravel, and rock able to store and yield water.

ARIZONA CORPORATION COMMISSION (ACC): An elected branch of State government responsible for the oversight of privately-owned utilities.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ): The state agency responsible for oversight, regulation, and enforcement of Arizona’s water quality regulations. ADEQ regulates groundwater, surface water, and recycled water.

ARIZONA DEPT OF WATER RESOURCES(ADWR): The state agency, created in 1980 by the Groundwater Management Act, designated to implement the State's water laws. ADWR oversees Arizona's water supplies and supports statewide and local water planning efforts.

ARIZONA WATER BANKING AUTHORITY(AWBA): A governmental entity created in 1996 to ensure Arizona utilized its full allocation of Colorado River water. The AWBA recharges CAP water underground primarily to provide backup supplies for municipal water providers in times of shortage.

ASSURED WATER SUPPLY (AWS): A set of consumer protection regulations that apply within the five AMAs. Before a developer can sell subdivision lots, they must meet the Assured Water Supply criteria, including having access to enough water to last 100 years. The AWS Program is the basis for Arizona's long-term, sustainable growth. See Certificate and Designation.

AZ WATER ASSOCIATION: AZ Water is a non-profit educational organization founded in 1928 with a membership of 2,700 water/wastewater professionals.

BASEFLOW: The part of a stream discharge that is not attributable to direct runoff from precipitation or melting snow. It is sustained by groundwater discharge and may be considered as normal day-to-day flow during most of the year.

BENEFICIAL USE: A water law concept that requires water to be used in a manner approved by the State. A water user can lose their water right under certain circumstances if water is not put to beneficial use.

CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT(CAGRDR): Created by the State Legislature in 1993 to replenish groundwater in Phoenix, Pinal, and Tucson AMAs. CAGRDR's purpose is to provide a mechanism for water providers and landowners who don't have access to renewable water supplies to meet the Assured Water Supply requirements. Operation of the CAGRDR is the legal responsibility of the Central Arizona Water Conservation District.

CENTRAL ARIZONA PROJECT (CAP): The 336-mile system of pump stations and concrete-lined canal that brings 1.5 million acre-feet of Arizona's Colorado River water from Lake Havasu to Maricopa, Pinal, and Pima counties. The CAP was built by the Federal Government in the 1970s and is operated and maintained by the Central Arizona Water Conservation District.

CAP PRIORITY SYSTEM: A legal system that determines the relative priority of CAP water users and who receives reduced deliveries if there is not enough Colorado River water to fulfill all CAP user demands.

CENTRAL ARIZONA WATER CONSERVATION DISTRICT (CAWCD): A special governmental district of the State, established to manage the CAP system and levy a property tax to repay the federal government for construction of the CAP. The CAWCD is governed by a 15-member elected Board of Directors representing its service area of Maricopa, Pinal, and Pima counties.

CERTIFICATE OF ASSURED WATER SUPPLY: A permit issued by ADWR for a subdivision within an AMA after the developer has met the criteria of a 100-year Assured Water Supply.

CERTIFICATE OF CONVENIENCE & NECESSITY (CC&N): The area that a private water utility has been granted and authorized by the ACC to serve.

COLORADO RIVER SHORTAGE: A declaration by the Secretary of the Interior, based on the 2007 Interim Guidelines, that there is insufficient water in Lake Mead to meet the demands of all Lower Basin users. A Tier 1 Shortage is triggered at Lake Mead water elevation 1075', Tier 2 at 1050', and Tier 3 at 1025'. Each shortage tier requires greater cutbacks.

COLORADO RIVER WATER: Water from the mainstem of the Colorado River. Arizona shares the Colorado River with California, Nevada, New Mexico, Utah, Wyoming, Colorado, and Mexico.

DESIGNATION OF ASSURED WATER SUPPLY: A legal decision by ADWR that identifies a water provider has met the 100-year Assured Water Supply criteria and can supply water to current and future developments within its service area.

DIRECT USE EFFLUENT: Effluent that is transported directly from a facility regulated pursuant to water quality control statutes, to an end user. Effluent that is delivered directly from a wastewater treatment facility is included in this definition, while effluent that is recharged is excluded.

DOMESTIC USE: Uses related to the supply, service, and activities of households and private residences and includes the application of water to less than two acres of land to produce plants or part of plants for sale or human consumption, or for use as feed for livestock, range livestock or poultry.

DROUGHT CONTINGENCY PLAN (DCP): An agreement between the seven Colorado River Basin States that adds additional water reductions on top of the 2007 Interim Guidelines in times of shortage.

EFFLUENT: Water that has been collected in a sanitary sewer for subsequent treatment in a facility that is regulated as a sewage system, disposal plant or wastewater treatment facility. Such water remains effluent until it acquires the characteristics of groundwater or surface water.

EXCESS CAP WATER: CAP water that remains after long-term contract holders have had their water orders fulfilled in any year.

EXEMPT WELL: A non-regulated well in an AMA with a maximum pumping capacity of not more than 35 gallons per minute, used to withdraw groundwater for non-irrigation purposes.

GALLONS PER CAPITA PER DAY (GPCD): The average quantity of water each person uses in one day. ADWR sets GPCD targets for water providers in the five AMAs.

GRANDFATHERED RIGHT (GFR): A right to withdraw and use groundwater within an AMA. GFRs were "grandfathered" in upon passage of the 1980 GMA for entities that were already using groundwater at that time. A GFR is a permanent right to pump an allotted amount of groundwater on an annual basis.

GROUNDWATER: Water under the earth's surface that fills the pore spaces between soil particles and fractured rock.

GROUNDWATER MANAGEMENT ACT (GMA): Enacted by the legislature in 1980 to address the State's problem of groundwater depletion.

GROUNDWATER SAVINGS FACILITY (GSF): Irrigation districts that use renewable water from a storing partner (often a municipal water provider) instead of pumping groundwater. The amount of renewable water substituted for groundwater is credited to the storing partner for future use.

INCIDENTAL RECHARGE: The amount of water that percolates down to the water table after it is applied to the land surface, excluding water that is added to an aquifer pursuant to the underground storage, savings, and replenishment program.

INFLUENT: Raw, untreated wastewater flowing into a wastewater treatment plant.

INTENTIONALLY CREATED SURPLUS (ICS): The 2007 Guidelines allow certain entities to temporarily store water in Lake Mead to help avoid shortage elevations. DCP greatly expands this concept.

IRRIGATION DISTRICT: A political subdivision established as a special taxing district for either agricultural improvement or irrigation and conservation purposes. Irrigation districts often manage water deliveries on behalf of numerous farmers.

IRRIGATION NON-EXPANSION AREA (INA): A geographical area that has been designated by ADWR as having insufficient groundwater at current usage rates. Within INAs, new agricultural irrigation beyond current use is prohibited.

LONG-TERM STORAGE CREDITS (LTSC): Credits earned by storing CAP water or recycled water underground. These credits can be recovered at a later date.

LOST WATER: Water from any source, including effluent, which enters a distribution system and is lost from the system during transportation or distribution due to seepage, evaporation, leaks, breaks, phreatophyte use, or other causes.



MANAGED UNDERGROUND STORAGE FACILITY: A facility designed and managed to utilize the natural channel of a stream to intentionally store water underground. Surface water flowing in its natural channel is not a managed underground storage facility.

MANAGEMENT PLAN: A regulatory document produced by ADWR that is designed to assist the AMAs in achieving their water management goals. The GMA requires ADWR to produce five Management Plans with each subsequent Plan containing more stringent water conservation requirements.

MAXIMUM CONTAMINANT LEVEL: A primary maximum contaminant level (MCL) represents a drinking water standard set by the Safe Drinking Water Act and enforced by the EPA. An MCL reflects a national primary drinking water regulation in the form of an enforceable numeric drinking water standard representing the maximum permissible level of a constituent in a public water system. A secondary maximum contaminant level (SMCL) represents a non-enforceable numeric standard for the aesthetic quality of drinking water, such as taste, odor, or color. Waters with contaminants above a SMCL are not typically expected to cause health problems.

MEMBER LAND: An individual subdivision that has enrolled as a member of the CAGR in order for the land to receive a Certificate of AWS.

MEMBER SERVICE AREA: A designated water provider that has enrolled its entire service area as a member of the CAGR in order to receive a Designation of AWS.

MUNICIPAL & INDUSTRIAL (M&I) PRIORITY: A class of water use within the CAP Priority System. M&I users have the highest priority, which is co- equal with the priority of Tribes that receive Indian priority.

MUNICIPAL PROVIDER: A city, town, private water company, domestic water improvement district, or irrigation district that supplies water for municipal use.

NON-INDIAN AGRICULTURAL WATER (NIA): A class of water use within the CAP Priority System that has relatively lower priority. NIA water was originally contracted to farmers but later transferred for tribal, municipal, and industrial use.



OVERDRAFT: An unsustainable condition where more groundwater is being pumped than the amount of water recharged to the aquifer.
Potable: Water that is considered safe for human consumption.

PRIMARY TREATMENT: The first stage in wastewater treatment where some solids and organic material are removed by screening and sedimentation. It removes about 35% of the biochemical oxygen demand (BOD) and less than half of the metals or toxic organic substances.

PRIVATE WATER COMPANY: A private, investor- owned municipal water provider regulated by the ACC.

RECHARGE: Storing renewable water supplies underground for a later date. Arizona worked for years to have underground storage recognized as a beneficial use, preventing California from taking Arizona's allocation of Colorado River water.

RECLAIMED WATER: Effluent that has been treated for applications such as turf irrigation, dust control, firefighting, industrial uses, and creating/supporting wildlife habitat.

RECOVERY: The act of pumping or "recovering" water that was previously stored underground. Individual water users can Recover LTSC, and stakeholders are developing a plan to Recover the millions of acre-feet of water stored underground by the AWBA.

RECYCLED WATER: Water sent down the drain that is treated to a very high quality to extend and expand its reuse. The term is used to convey the value of this water as an important water supply. Also called reclaimed water.

RENEWABLE WATER SUPPLY: A water source that is continually renewed by normal hydrologic cycles. Renewable water supplies include CAP water, surface water, and effluent.

REPLENISHMENT: To restore water to the aquifer to replace withdrawn groundwater.

RIPARIAN AREA: Lands adjacent to a natural perennial or intermittent stream channel. They are distinct from surrounding lands because of the unique soil and vegetation characteristics strongly influenced by their proximity to water.



SAFE-YIELD: A water management concept in which the amount of water pumped out of the ground is the same as what goes back into underground aquifers. Safe-Yield is the management goal for the Phoenix, Prescott, and Tucson AMAs.

SECONDARY TREATMENT: The second stage in wastewater treatment that involves both chemical and biological processes. The screened wastewater is passed through a series of holding and aeration tanks and ponds further removing organic and inorganic substances. Disinfecting with chlorine may be included.

SERVICE AREA - MUNICIPAL: A geographical boundary that encompasses lands a water provider can offer water and wastewater service. Service Areas do not always line up with city limits and are not the same as a Certificate of Convenience & Necessity (CC&N).

STORED WATER: Water that is stored underground for the purpose of recovery at a later time.

SUBSIDENCE: The settling or lowering of the land surface which results from aquifer compaction after the withdrawal of groundwater. Surface Water: Waters generally found in springs, streams, rivers, lakes, and ponds, canyons, ravines, or other natural channels above ground.

TERTIARY TREATMENT: Wastewater treatment beyond the secondary or biological stage that includes the removal of nitrogen and phosphorus and a high percentage of suspended solids through chemical and mechanical means such as additional filtration, carbon adsorption, distillation and reverse osmosis.

UNDERGROUND STORAGE FACILITY (USF): A site where water is stored underground, typically through large basins or settling ponds where water percolates into the aquifer below.

WATER INFRASTRUCTURE FINANCE AUTHORITY OF ARIZONA (WIFA): WIFA is a State Agency that provides financing assistance for the construction, rehabilitation, and/or improvement of drinking water, wastewater, wastewater reclamation, and other water infrastructure projects.

WATER RESOURCES RESEARCH CENTER (WRRC): The University of Arizona's Water Resources Research Center promotes understanding of critical state and regional water management and policy issues through research, community outreach, and public education.

WATER YEAR: A 12-month period beginning on October 1 and ending on September 30. The water year is designated by the calendar year in which it ends, e.g. the 2006 water year ends September 30, 2006.

WATERSHED: A drainage divide or a drainage-basin area contributing water to a network of stream channels, a lake, or other topographic lows where water can collect.

WELL: A well is a man-made opening in the earth through which water may be withdrawn or obtained from beneath the surface of the earth, with certain exceptions.



WESTMARC

15 Communities... One Voice

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WESTMARC, a public/private partnership of 15 communities, the business and education sectors, provides opportunities for members to interact and communicate on issues vital to moving the West Valley forward. WESTMARC is committed to our members' success and our mission of enhancing economic development and quality of life in the West Valley.

Avondale
Buckeye
El Mirage
Gila Bend
Glendale
Goodyear
Litchfield Park
Peoria
Phoenix
Sun City
Sun City West
Surprise
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