

Nevada Division of Water Planning

Nevada State Water Plan
PART 2 — WATER USE AND FORECASTS

Section 6
Glossary of Terminology

[Source: Nevada Division of Water Planning's *Water Words Dictionary*. Words presented in italics and the referenced appendices may be found in the Dictionary. Words and definitions included in this glossary which explain or summarize elements of existing water law are not intended to change that law in any way.]

Acre-Feet (AF) — A unit commonly used for measuring the volume of water. See *Acre-Foot*.

Acre-Foot (AF) — A unit commonly used for measuring the volume of water; equal to the quantity of water required to cover one acre (43,560 square feet or 4,047 square meters) to a depth of 1 foot (0.30 meter) and equal to 43,560 cubic feet (1,234 cubic meters), or 325,851 gallons.

Agricultural Use — The use of any tract of land for the production of animal or vegetable life; uses include, but are not limited to, the pasturing, grazing, and watering of livestock and the cropping, cultivation, and harvesting of plants.

Agricultural Water Use (Withdrawals) — Includes water used for irrigation and non-irrigation purposes. Irrigation water use includes the artificial application of water on lands to promote the growth of crops and pasture, or to maintain vegetative growth in recreational lands, parks, and golf courses. Non-irrigation water use includes water used for livestock, which includes water for stock watering, feedlots, and dairy operations, and fish farming and other farm needs.

Average Water Year — A term denoting the average annual hydrologic conditions based upon an extended or existing period of record. Because precipitation, runoff, and other hydrologic variables vary from year to year, planners typically project future scenarios based on hydrologic conditions that generally include average, wet (high-water), and drought (low-water) years.

Basin — (1) (Hydrology) A geographic area drained by a single major stream; consists of a drainage system comprised of streams and often natural or man-made lakes. Also referred to as *Drainage Basin*, *Watershed*, or *Hydrographic Region*. (2) (Irrigation) A level plot or field, surrounded by dikes, which may be flood irrigated. (3) (Erosion Control) A catchment constructed to contain and slow runoff to permit the settling and collection of soil materials transported by overland and rill runoff flows. (4) A naturally or artificially enclosed harbor for small craft, such as a yacht basin.

Blackwater — Water that contains animal, human, or food wastes; wastewater from toilet, latrine, and aqua privy flushing and sinks used for food preparation or disposal of chemical or chemical-biological ingredients. Compare to *Greywater*.

CFS (Cubic Foot per Second) — A unit of discharge for measurement of flowing liquid equal to a flow of one cubic foot per second past a given section. A rate of flow equivalent to 448.83 gallons per minute. Also called *Second-Foot*.

CFS-Day — The volume of water represented by a flow of 1 cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons.

Cloud Seeding — A *Weather Modification* technique involving the injection of a substance into a cloud for the purpose of influencing the cloud's subsequent development. Ordinarily, this refers to the injection of a nucleating agent, which creates a nucleus around which precipitation will form. In common practice, cloud seeding involves the aerial release of silver iodide particles into convective clouds to create thunderstorms.

Commercial Water Use (Withdrawals) — Water for motels, hotels, restaurants, office buildings, and other commercial facilities and institutions, both civilian and military. The water may be obtained from a public supply

or may be self supplied. The terms “water use” and “water withdrawals” are equivalent, but not the same as *Consumptive Use* as they do not account for return flows. Also see *Industrial Water Use (Withdrawals)*, *Public Water Supply System* and *Self-Supplied Water*.

Community Water System — A public water system with 15 or more connections and serving 25 or more year-round residents and thus is subject to the *U.S. Environmental Protection Agency (EPA)* regulations enforcing the *Safe Drinking Water Act (SDWA)*.

Conjunctive Management — The integrated management and use of two or more water resources, such as a (groundwater) aquifer and a surface water body.

Conjunctive (Water) Use — (1) The combined use of surface and groundwater systems and sources to optimize resource use and prevent or minimize adverse effects of using a single source; the joining together of two sources of water, such as groundwater and surface water, to serve a particular use. (2) The integrated use and management of hydrologically connected groundwater and surface water.

Conservation — (1) Increasing the efficiency of energy use, water use, production, or distribution. (2) The careful and organized management and use of natural resource, for example, the controlled use and systematic protection of natural resources, such as forests, soil, and water systems in accordance with principles that assure their optimum long-term economic and social benefits. Also, preservation of such resources from loss, damage, or neglect.

Consumption, Domestic — The quantity or quantity per capita (person) of water consumed in a municipality or district for domestic uses during a given period, usually one day. Domestic consumption is generally considered to include all uses included in “municipal use of water,” in addition to the quantity of water wasted, lost, or otherwise unaccounted for. Also see *Consumption, Municipal; Municipal Use of Water*.

Consumption, Industrial — The quantity of water consumed in a municipality or district for mechanical, trade, and manufacturing uses during a given period, usually one day.

Consumption, Municipal — The quantity of water consumed through use in developed urban areas. Also see *Consumption, Domestic; Consumptive Use*.

Consumptive (Water) Use — (1) A use which lessens the amount of water available for another use (e.g., water that is used for development and growth of plant tissue or consumed by humans or animals). (2) A use of water that renders it no longer available because it has been evaporated, transpired by plants, incorporated into products or crops, consumed by people or livestock, or otherwise removed from water supplies. (3) The portion of water withdrawn from a surface or groundwater source that is consumed for a particular use (e.g., irrigation, domestic needs, and industry), and does not return to its original source or another body of water. No typical use is 100 percent efficient; there is always some return flow associated with a use either in the form of a return to surface flows or as a ground water recharge. Nor are typically nonconsumptive uses of water entirely nonconsumptive. There are evaporation losses, for instance, associated with maintaining a reservoir at a specified elevation to support fish, recreation, or hydropower, and there are conveyance losses associated with maintaining a minimum streamflow in a river, diversion canal, or irrigation ditch.

Consumptive Water Use, Irrigation — The quantity of water that is absorbed by the crop and transpired or used directly in the building of plant tissue, together with that evaporated from the cropped area. Does not include runoff or deep percolation in support of the *Crop Leaching Requirement*.

Crop Irrigation Requirement — The amount of irrigation water in acre-feet per acre required by the crop; it is the difference between *Crop Consumptive Use*, or *Crop Requirement*, and the effective precipitation for plant growth. To this amount the following items, as applicable, are added: (1) irrigation applied prior to crop growth; (2) water required for leaching; (3) miscellaneous requirements of germination, frost protection, plant cooling, etc.; and (4) the decrease in soil moisture should be subtracted.

Cropland — Land currently tilled, including cropland harvested, land on which crops have failed, summer fallowed land, idle cropland, cropland planted in cover crops or soil improvement crops not harvested or pastured, rotation pasture, and cropland being prepared for crops, or newly seeded cropland. Cropland also includes land planted in vegetables and fruits, including those grown on farms for home use. All cultivated (tame) hay is included as cropland. Wild hay is excluded from cropland and included in pasture and range.

Cross-Sectional Analysis — (Statistics) Observations or characteristics of a variable analyzed without respect to variations due to time. Cross-sectional econometric models provide information on the behavior of a variable due to external factors. Contrast with *Time-Series Analysis*.

Cubic Feet Per Second (CFS) — A unit expressing rate of discharge, typically used in measuring streamflow. One cubic foot per second is equal to the discharge of a stream having a cross section of 1 square foot and flowing at

an average velocity of 1 foot per second. It also equals a rate of approximately 7.48 gallons per second, 448.83 gallons per minute, 1.9835 acre-feet per day, or 723.97 acre-feet per year.

Cubic Feet Per Second Day (CFS-Day) — The volume of water represented by a flow of one cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons.

Demand Management Alternatives — Water management programs that reduce the demand for water, such as water conservation, drought rationing, rate incentive programs, public awareness and education, drought landscaping, etc.

Dependable Supply — That water which can be expected to be available at a time and place with the quality demanded; sometimes the amount of water available is at a stated percentage of time.

Dependable Yield — The maximum annual supply of a given water development that is expected to be available on demand, with the understanding that lower yields will occur in accordance with a predetermined schedule or probability. More frequently referred to as *Firm Yield*.

Desalination, or Desalinization — (1) To remove salts and other chemicals, as from sea water or soil, for example. Usually used with respect to the salt contained in water. (2) Specific treatment processes to demineralize sea water or brackish (saline) water for reuse. Also referred to as *Desalting*.

Designated Groundwater Basin — A basin where permitted ground water rights approach or exceed the estimated average annual recharge and the water resources are being depleted or require additional administration. Under such conditions, a state's water officials will so designate a groundwater basin and, in the interest of public welfare, declare *Preferred Uses* (e.g., municipal and industrial, domestic, agriculture, etc.). Also referred to as *Administered Groundwater Basin*.

Designated Groundwater Basin [Nevada] — In the interest of public welfare, the Nevada State Engineer, *Division of Water Resources, Department of Conservation and Natural Resources*, is authorized by statute (Nevada Revised Statute 534.120) and directed to designate a ground water basin and declare *Preferred Uses* within such designated basin. The State Engineer has additional authority in the administration of the water resources within a designated ground water basin.

Dewater, and Dewatering — (1) To remove water from a waste produce or streambed, for example. (2) The extraction of a portion of the water present in sludge or slurry, producing a dewatered product which is easier to handle. (3) (Mining) The removal of ground water in conjunction with mining operations, particularly open-pit mining when the excavation has penetrated below the ground-water table. Such operations may include extensive ground-water removal and, if extensive enough and if not re-injected into the groundwater, these discharges may alter surface water (stream) flows and lead to the creation of lakes and wetland areas. As such water removals only last so long as the mine is in operation, eventually surface water impacts, if present, will be eliminated, consequently jeopardizing surface water uses, such as irrigation, livestock, wildlife, or riparian habitat that may have become dependent upon the continuation of these temporary flows. Also, when the mine dewatering operations cease, the remaining open pit will eventually begin to fill up with ground water, resulting in significantly increased evaporation from ground water reservoirs.

Domestic Water — Water supplied to individual dwellings and other land uses which is suitable for drinking.

Domestic Water Use (Withdrawals) — Water used normally for residential purposes, including household use, personal hygiene, drinking, washing clothes and dishes, flushing toilets, watering of domestic animals, and outside uses such as car washing, swimming pools, and for lawns, gardens, trees and shrubs. The water may be obtained from a public supply or may be self supplied. The terms "water use" and "water withdrawals" are equivalent, but not the same as *Consumptive Use* as they do not account for return flows. Also referred to as *Residential Water Use*. Also see *Public Water Supply System* and *Self-Supplied Water*.

Evapotranspiration (ET) — (1) The quantity of water transpired (given off), retained in plant tissues, and evaporated from plant tissues and surrounding soil surfaces. (2) The sum of *Evaporation* and *Transpiration* from a unit land area. (3) The combined processes by which water is transferred from the earth surface to the atmosphere; evaporation of liquid or solid water plus transpiration from plants. Evapotranspiration occurs through evaporation of water from the surface, evaporation from the capillary fringe of the groundwater table, and the transpiration of groundwater by plants (*Phreatophytes*) whose roots tap the capillary fringe of the groundwater table. The sum of evaporation plus transpiration.

Forecast (Forecasting) — (Statistics) A forecast is a quantitative estimate (or set of estimates) about the likelihood of future events based on past and current information. This “past and current information” is specifically embodied in the structure of the econometric model used to generate the forecasts. By extrapolating the model out beyond the period over which it was estimated, we can use the information contained in it to make forecasts about future events. It is useful to distinguish between two types of forecasting, *ex post* and *ex ante*. In an *ex post* forecasts all values of dependent and independent variables are known with certainty and therefore provides a means of evaluating a forecasting model. Specifically, in an *ex post* forecast, a model will be estimated using observations excluding those in the *ex post* period, and then comparisons of the forecasts will be made to these actual values. An *ex ante* forecast predicts values of the dependent variable beyond the estimation period using values for the explanatory variables which may or may not be known with certainty.

Forecast Horizon — (Statistics) The number of time periods to be forecasted; also, the time period in the future to which forecasts are to be made.

Gallon [U.S.] — A unit of capacity, containing four quarts, used in the United States primarily for liquid measure. One U.S. gallon contains 231 cubic inches, 0.133 cubic feet, or 3.7853 liters. It takes approximately 325,851 gallons to make up 1 acre-foot (AF). [*Historical Note:* The U.S. gallon is the same as the old English *wine gallon* which was originally intended in England to be equivalent to a cylinder of seven inches in diameter and six inches in height.]

Gallons per Capita (GPC) — A term used relative to water use per person per specified time, usually a day.

Gallons per Capita (Person) per Day (GPCD) — An expression of the average rate of domestic and commercial water demand, usually computed for public water supply systems. Depending on the size of the system, the climate, whether the system is metered, the cost of water, and other factors, *Public Water Supply Systems (PWSS)* in the United States experience a demand rate of approximately 60 to 150 gallons per capita per day. Also see *Gallons per Employee per Day (GED)* for information on the application of this concept to commercial water use by *Standard Industrial Classification (SIC) Code*. [See Appendix C–4, Gallons Per Capita Per Day (GPCD), Water Used for Public Water Supplies by State.]

Gallons per Employee (Worker) per Day (GED, or GPED) — A measure or coefficient expressing an area’s commercial water use per worker (employee), typically for distinct industry sectors. It is based on an analytical technique for measuring and forecasting commercial water use in a service area based upon the unique, seasonal, business-related water use by specific industrial sectors. GED commercial water-use coefficients are typically developed based upon Standard Industrial Classifications (SIC) codes for which comparable commercial water use and employment data are available. For forecasting more frequently than annually, GED coefficients will incorporate seasonal patterns (monthly or quarterly) as well. By deriving forecasts of trends in industry sector employment and combining them with appropriate, industry-specific GED coefficients, relatively accurate forecasts of the corresponding commercial water use may be obtained.

Gallons per Minute — A unit expressing rate of discharge, used in measuring well capacity. Typically used for rates of flow less than a few cubic feet per second (cfs).

GPCD — Gallons per capita (per person) per day — a measure of water use in municipalities. [See Appendix C–4, Gallons Per Capita Per Day (GPCD), Water Used for Public Water Supplies by State.]

GPD — Gallons per day, a measure of the rate of flow or the rate of water withdrawal from a well. Typically used when the rate of flow in cubic feet per second (cfs) is too low to be useful.

Greywater (Graywater) — Wastewater from clothes washing machines, showers, bathtubs, hand washing, lavatories and sinks that are not used for disposal of chemicals or chemical-biological ingredients.

Hydrographic Area [Nevada] — The 232 subdivisions (*256 Hydrographic Areas* and *Hydrographic Sub-Areas*) of the 14 Nevada *Hydrographic Regions* as defined by the State Engineer’s Office, Department of Conservation and Natural Resources, Division of Water Resources. Primarily these are sub-drainage systems within the 14 major drainage basins. Hydrographic Areas (valleys) may be further subdivided into Hydrographic Sub-Areas based on unique hydrologic characteristics (e.g., differences in surface flows) within a given valley or area. [A listing of Nevada’s Hydrographic Regions, Areas and Sub-Areas is presented in Appendix A–1 (hydrographic regions, areas and sub-areas), Appendix A–2 (listed sequentially by area number) Appendix A–3 (listed alphabetically by area name), and Appendix A–4 (listed alphabetically by principal Nevada county(ies) in which located).]

Hydrographic Region [Nevada] — Nevada has been divided into 14 hydrographic regions or basins, which are now

used by the Nevada Division of Water Resources, Department of Conservation and Natural Resources, and the U.S. Geological Survey (USGS) to compile information pertaining to water resources and water use. These regions are also further subdivided into 232 *Hydrographic Areas* (256 Hydrographic Areas and Sub-Areas, combined) for more detailed study. See *Basins [Nevada]*, for a complete listing and description of Nevada's 14 Hydrographic Regions.

Impound — To accumulate and store water as in a reservoir.

Indirect Water Uses — Uses of water that are not immediately apparent to the consumer. For example, a person indirectly uses water when driving a car because water was used in the production process of steel and other automotive components.

Industrial, Self-supplied Water — Water withdrawn from privately developed sources and delivered through water systems established entirely or primarily for commercial and industrial use. Includes water used by mining, manufacturing, military establishments, educational and penal institutions, golf courses, hotels, motels, restaurants, casinos and other small businesses.

Industrial Water Use (Withdrawals) — Industrial water use includes water used for processing activities, washing, and cooling. Major water-using manufacturing industries include food processing, textile and apparel products, lumber, furniture and wood products, paper production, printing and publishing, chemicals, petroleum, rubber products, stone, clay, glass and concrete products, primary and fabricated metal industries, industrial and commercial equipment and electrical, electronic and measuring equipment and transportation equipment. The terms “water use” and “water withdrawals” are equivalent, but not the same as *Consumptive Use* as they do not account for return flows. Also see *Commercial Water Use (Withdrawals)*.

Injection Well — Refers to a well constructed for the purpose of injection treated wastewater directly into the ground. Wastewater is generally forced (pumped) into the well for dispersal or storage into a designated aquifer. Injection wells are generally drilled into nonpotable aquifers, unused aquifers, or below freshwater levels.

Irrigate — (1) To supply (dry land) with water by means of ditches, pipes, or streams; to water artificially. (2) To wash out (a body cavity or wound) with water or a medicated fluid. (3) To make fertile or vital as if by watering.

Irrigation — (1) The controlled application of water for agricultural purposes through man-made systems to supply water requirements not satisfied by rainfall. (2) The application of water to soil for crop production or for turf, shrubbery, or wildlife food and habitat.

Irrigation Water Use (Withdrawals) — Artificial application of water on lands to assist in the growing of crops and pastures or to maintain vegetative growth on recreational lands, such as parks and golf courses. The terms “water use” and “water withdrawals” are equivalent, but not the same as *Consumptive Use* as they do not account for return flows. Also see *Irrigation Return Flow*.

Livestock Water Use — Water use for stock watering, feed lots, dairy operations, fish farming, and other on-farm needs. Livestock as used here includes cattle, sheep, goats, hogs, and poultry. Also included are such animal specialties as horses, rabbits, bees, pets, fur-bearing animals in captivity, and fish in captivity. Also see *Rural Water Use*.

M&I (Municipal and Industrial) Water Withdrawals (Use) — Water supplied for municipal and industrial uses provided through a municipal distribution system.

Mining Water Use — Water use for the extraction of minerals occurring naturally including solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas. Also includes uses associated with quarrying, well operations (*Dewatering*), milling (crushing, screening, washing, flotation, and so forth), and other preparations customarily done at the mine site or as part of a mining activity, such as dust control, maintenance, and wetland restoration. Generally, most of the water used at a mining operation is self-supplied. Also see *Self-Supplied Water*.

Model — (Statistics) A simulation, by descriptive, conceptual, statistical, or other means, of a process or thing that is difficult or impossible to observe directly, as in an *Economic Consumption Model* or a *River Flow Model*.

Modeling (Forecasting and Simulation Analysis) — The application of a mathematical process or simulation framework, for example a mathematical or *Econometric Model*, to describe various phenomenon and analyze the effects of changes in independent (i.e., explanatory) variables on dependent variables.

Municipal and Industrial (M & I) Water Withdrawals (Use) — Water supplied for municipal and industrial uses provided through a municipal distribution system for rural domestic use, stock water, steam electric powerplants, and water used in industry and commerce.

Municipal Water System — A water system which has at least five service connections or which regularly serves 25 individuals for 60 days. See *Public Water System (PWS)*.

Non-Community Water System (NCWS) — A public water system that is not a community water system, e.g., the water supply at a camp site or national park.

Non-Consumptive Water Use — Non-consumptive water use includes a water use that is not consumed, for example, water withdrawn for purposes such as hydropower generation. This also includes uses such as boating or fishing where the water is still available for other uses at the same site. No typical consumptive use is 100 percent efficient; there is always some return flow associated with such use either in the form of a return to surface flows or as a ground water recharge. Nor are typically non-consumptive uses of water entirely non-consumptive. There are evaporation losses, for instance, associated with maintaining a reservoir at a specified elevation to support fish, recreation, or hydro-power, and there are conveyance losses associated with maintaining a minimum streamflow in a river, canal, or ditch.

Non-Transient Non-Community Water System — (1) A public water system that regularly serves at least 25 of the same non-resident persons per day for more than six months per year. (2) A public water system that is not a community water system and that regularly serves at least 25 of the same people over six months per year. Common types of such water systems are those serving schools, daycare centers, factories, restaurants, nursing homes, and hospitals.

Open-Pit Mining — The process of removing mineral deposits that are found close enough to the surface so that the construction of tunnels (underground mining) is not necessary. The soil and strata that cover the deposit are removed to gain access to the mineral deposit.

Population — (Statistics) The total number of potential observations in a specific category, for example, the human population of a particular city, or the number of animals of a particular species within a defined area. Typically, measurements of the behavior and characteristics of the population are not possible and therefore a *Sample* is selected which, if an *Unbiased Sample*, will, even in its limited numbers, be representative of the characteristics of the total population.

Population Density — (1) The number per unit area of individuals of any given species at a given time. (2) (Water Planning) The number of people in a given area. The number may be obtained by multiplying the number of dwelling units per unit area (e.g., square mile, square kilometer, acre, etc.) by the number of residents per dwelling unit.

Potable Water — Water that is drinkable. Specifically, freshwater that generally meets the standards in quality as established in the U.S. Environmental Protection Agency (EPA) *Drinking Water Standards* for drinking water throughout the United States. Potable water is considered safe for human consumption and is often referred to as *Drinking Water*. Freshwater that exceeds established chloride and dissolved solids limits is often referred to as slightly saline, brackish, or nonpotable water and is either diluted with fresher water or treated through a desalination process to meet potable-water standards for public supply.

Price Elasticity (of Water) — Defined as the ratio of the percent change in the quantity demanded of water (or any other economic good) and the percent change in price, or

$$n_{\text{water}} = \text{Percent Change in } Q_{\text{water}} / \text{Percent Change in } P_{\text{water}}$$

An elastic demand results when the ratio of n_{water} is greater than unity (>1), implying that a given change in price will result in a greater (percentage) change in the quantity demanded. Under such conditions of “elastic demand” for water, consumers tend to be responsive to changes in the price for water. Conversely, an inelastic demand results when the ratio of n_{water} is less than unity (<1), implying that a given change in price will result in a smaller (percentage) change in the quantity demanded. Under such conditions of “inelastic demand,” consumers are relatively unresponsive to changes in the price for water. Along any given (downward sloping) demand curve, the elasticity will vary from inelastic, to unity, to elastic as the price rises further.

Public Supply Water — (1) Water withdrawn for all users by public and private water suppliers and delivered to users that do not supply their own water. (2) Water withdrawn by and delivered to a public water system regardless of the use made of the water. Includes water supplied both by large municipal systems and by smaller quasi-municipal

or privately-owned water companies. Water suppliers provide water for a variety of uses, such as *Domestic Water Use* (also referred to as *Residential Water Use*), *Commercial Water Use*, *Industrial Water Use*, *Thermoelectric Power Water Use* (domestic and cooling purposes), and *Public Water Use*.

Public Utility — A private business organization, subject to government regulation, that provides an essential commodity or service, such as water, electricity, transportation, or communications, to the public.

Public Water Use — Water supplied from a *Public Water Supply System (PWSS)* and used for such purposes as fire fighting, street washing, and municipal parks, golf courses, and swimming pools. Public water use also includes system water losses (water lost to leakage) and brine water discharged from desalination facilities. Also referred to as *Utility Water Use*.

Reclaimed Water — Waste water that becomes suitable for a specific beneficial use as a result of treatment or brackish water demineralized for use. General types of reclaimed waste water include:

- [1] **Primary Effluent** — reclaimed water that only has had sewage solids removed and is typically used only for surface irrigation of tree, fodder, and fiber crops;
- [2] **Secondary Effluent** — reclaimed water that has had sewage solids removed and has been oxidized and disinfected and is used to irrigate golf courses and cemeteries and provide water for pasture and food crops; and
- [3] **Tertiary Recycled Water** — water produced by conventional sewage treatment followed by more advanced procedures including filtration and disinfection, providing it with the broadest range of uses.

Residential Water Use — Water used normally for residential purposes, including household use, personal hygiene, and drinking, watering of domestic animals, and outside uses such as car washing, swimming pools, and for lawns, gardens, trees and shrubs. The water may be obtained from a public supply or may be self supplied. Also referred to as *Domestic Water Use*. Also see *Public Water Supply System* and *Self-Supplied Water*.

Resident Population — The number of persons who live within a state or other political subdivision (county, city, etc.) who consider it their permanent place of residence. College students, military personnel, and inmates of penal institutions are counted as permanent residents. According to this definition, tourist and seasonal or part-time residents are considered nonresident population.

Return Flow — (1) The amount of water that reaches a ground or surface water source after release from the point of use and thus becomes available for further use. (2) That part of a diverted flow which is not consumptively used and returns to its original source or another body of water. (3) (Irrigation) Drainage water from irrigated farmlands that re-enters the water system to be used further downstream. Such waters may contain dissolved salts or other materials that have been leached out of the upper layers of the soil.

Reuse (of Water) — (1) Water that is discharged by one user and is used by other users. (2) Repeated use of the same water by subsequent users in sequential systems. Sometimes, it also means water discharged by one unit and used by other units in the same plant. Also referred to as *Recycled Water*.

Reuse Systems — Refers to the deliberate application of reclaimed water for a beneficial purpose. Reuse may encompass landscape irrigation (such as golf courses, cemeteries, highway medians, parks, playgrounds, school yards, nurseries, and residential properties), agricultural irrigation (such as food and fruit crops, wholesale nurseries, sod farms and pasture grass), aesthetic uses, ground-water recharge, environmental enhancement of surface water and wetland restoration, fire protection, and other useful purposes.

Reverse Osmosis — (1) (Desalination) Refers to the process of removing salts from water using a membrane. With reverse osmosis, the product water passes through a fine membrane that the salts are unable to pass through, while the salt waste (brine) is removed and disposed. This process differs from electro dialysis, where the salts are extracted from the feedwater by using a membrane with an electrical current to separate the ions. The positive ions go through one membrane, while the negative ions flow through a different membrane, leaving the end product of freshwater. (2) (Water Quality) An advanced method of water or wastewater treatment that relies on a *Semi-permeable Membrane* to separate waters from pollutants. An external force is used to reverse the normal osmotic process resulting in the solvent moving from a solution of higher concentration to one of lower concentration.

Self-Supplied Water — Water withdrawn from a surface or ground-water source directly by a user rather than being obtained from a *Public Water Supply System (PWSS)*.

Self-Supplied Water (Industrial) — Water for industrial use, supplied from sources other than municipal distribution systems.

Sigmoid Growth — (Data Analysis) A growth rate trend characterized by an elongated S-shaped, or sigmoid curve. Typical of population growth rate trends which begin rapidly at an exponential rate but slow as limiting factors are encountered until a limit is approached asymptotically.

Significant (Statistical) — A term applied to differences, correlations, cause-and-effect relationships, etc., to indicate that they are probably not due to chance alone. Significant ordinarily indicates a probability of not less than 95 percent, while highly significant indicates a probability of not less than 99 percent.

Thermoelectric Power — Electrical power generated using fossil-fuel (coal, oil, or natural gas), geothermal, or nuclear energy.

Thermoelectric (Power) Water Use — Water used in the process of the generation of *Thermoelectric Power*. The water may be obtained from a *Public Water Supply System* or may be self supplied. Also see *Self-Supplied Water*.

Time-Series Analysis — (Statistics) Techniques that attempt to predict the future by using historical data rather than by building cause-and-effect models. Typically, such techniques are most appropriate when the historical data is relatively well behaved and when forecasts, primarily, are sought and not precise cause-and-effect relationships. Contrast with *Cross-Sectional Analysis*.

Variable — (Statistics) A series of comparable observations or characteristics of a phenomenon taken as a single set of data; a listing of specific characteristics of a population or a number of observations taken over a specific period of time which may reasonably be expected to vary from observation to observation.

Water Conservation — The physical control, protection, management, and use of water resources in such a way as to obtain maximum sustained benefits while reducing water use. Water conservation results in a reduction in applied water due to more efficient water use such as through the implementation of *Best Management Practices (BMP) — Urban Water Use*, or *Efficient Water Management Practices (EWMP) — Agricultural Water Use*.

Water Demand — The water requirements for a particular purpose, such as irrigation, power production, municipal supply, plant transpiration, or storage.

Water Supply System — Includes the works and auxiliaries for collection, treatment, storage, and distribution of the water from the sources of supply to the free-flowing outlet of the ultimate consumer. Also see *Public Water System (PWS)*.

Water Use — The amount of water used for a variety of purposes including drinking, irrigation, processing of goods, power generation, and other uses. The amount of water used is typically less than the amount of water withdrawn for a particular use due to water transfers, the recirculation or recycling of the same water, return flows, etc. For example, a power plant may use the same water multiple times, but withdraw a significantly different amount. Also see *Water Use, Types*, below.

Water Use, Types — The use of water may be classified by specific types according to distinctive uses, such as the following:

- [1] Commercial Water Use
- [2] Domestic Water Use
- [3] Hydroelectric Power Water Use
- [4] Irrigation Water Use
- [5] Livestock Water Use
- [6] Mining Water Use
- [7] Navigational Water Use
- [8] Other Water Use
- [9] Public Water Use (same as *Utility Water Use*)
- [10] Residential Water Use (same as *Domestic Water Use*)
- [11] Rural Water Use
- [12] Thermoelectric Power Water Use