



Glossary of Terms

Active recharge: Regarding aquifer storage, active recharge implies artificially moving water from the surface into ground water systems.

Adaptation framework: General approach to enable the City and Water Department to adjust plans (i.e., to adapt) in the face of key future uncertainties, by taking account of future information as it becomes available.

Adaptive flexibility: The ability of a plan to adjust to changing circumstances and emerging information over time.

Adaptive pathway: The path forward through time, representing where and why plans may need adjustment (adaptation) as new information becomes available.

Adjustment framework: Similar to the adaptation framework, but pertaining to modest-sized adjustments to a path rather than a possible movement from one future path to another.

AFY: acre feet per year: A unit of measurement that demonstrates both water supply and demand on a municipal-wide scale. One acre foot is the volume of one acre of surface area to a depth of one foot. One acre foot is 43,560 cubic feet or 325,851 gallons per year.

Alternatives: Proposed solutions or alleviations to the system's supply shortfall that intend to use new or underutilized sources of water, expanding storage, and/or creating or adapting production methods.

AMI: Advanced metering infrastructure: AMI is an integrated system of smart meters, communications networks, and data management systems that is capable of collecting detailed water consumption records and enables two-way communication between utilities and customers.

CII: Commercial, institutional and industrial entities; non-residential customers of the Water Department.

CII MF: CII and multi-family residential customers.

Confluence®: An analytical water resources planning tool that simulates current and future water supply and demand scenarios, evaluates the results, and presents them in an understandable fashion. (Confluence was developed by Gary Fiske and Associates.)

Confluence model: The presentation of the Confluence results which provides a vast array of information in a flexible manner.

Conjunctive use: Using groundwater and surface waters together to improved water availability and reliability.

Continuity Agreement: an ongoing or "rolling" service application used by many property management companies to assume responsibility of the account after a tenant discontinues service. Continuity agreements allow utility services to remain active while the dwelling unit is vacant so that property management companies can "clean & show" the apartment while it's for rent.

Coefficient of Variability (CV): a relative metric that expresses how much a variable fluctuates around its means. Higher coefficient of variation means that the variable fluctuates more

Debt Service Coverage Ratio*: It is a financial ratio that measures the ability of an organization to pay current debt obligations by comparing its net operating income with its total debt service obligations. The Debt Service Coverage Ratio is defined as net operating income divided by total debt service. The ratio states net operating income as a multiple of debt obligations due within one year, including interest, principal and sinking fund obligations.

* The Water Department financial model calculates the debt coverage ratio without reserves. The calculation with reserves is: Net Revenues/Debt Service

Decision nodes: Points along an adaptive pathway at which information is anticipated that may support a decision to either proceed as initially planned, or adjust the plan (e.g., switch to a different pathway forward).

Decision space: The factors, information, and time in which a decision is to be made.

Demand management: The guidance of reduced water consumption through conservation and other curtailment methods (e.g., departmental rebate for low-flow toilet installation).

Direct potable reuse: An approach to recycled water where advanced purified wastewater is introduced directly into a potable water supply distribution system.

Drought-resistant: Alternative water supply that is not highly dependent on rainfall for its source.

Econometric: A form of statistical analysis applied in the social sciences (e.g., to explain or forecast water demand).

GL (General Ledger) edit & post: a process by which utility payments are reconciled and posted to the City's main accounting record or "ledger." The general ledger is the City's accounting record of revenue and expense transactions; general ledger financial reports show how utility payments pay for operations & maintenance, capital improvement, emergency reserves, etcetera, as well as your benefits and wages.

Fiscal Year (FY): is a one-year period that a company or government uses for accounting purposes and preparation of its financial statements. The City's Fiscal Year period runs from July 1st – Jun 30th.

Fish flows: Designation of specific stream flows at a particular location for a defined time, and typically follows seasonal variations with the intent of protecting and preserving resources for the surrounding environment and fish. [Ref. http://www.dfg.ca.gov/water/instream_flow.html]

Flow regime: The amount of water that is (or is required to be) found instream, across seasons and hydrologic years.

Forward osmosis (FO): A system of filtering water by using a "draw solution." Water molecules cross a semi-permeable membrane from a less salty liquid to a more salty liquid because of the osmotic pressure differential of the two solutions. Compared to reverse osmosis, forward osmosis is a low pressure-driven system.

Gantt chart: A bar chart that demonstrates components of a project's schedule.

GPCD: Gallons per capita per day, or the average daily water usage per person.

HCP: A Habitat Conservation Plan (HCP) is a required part of an application for permits to continue to take water from the San Lorenzo River and North Coast Streams. The HCP evaluates the impacts the City's water withdrawals have on endangered fish and spells out how they will be avoided or minimized. The HCP establishes an agreed upon amount of water that is needed for fish protection, and therefore how much remains for City consumption.

Indirect potable reuse: An approach to recycled water where advanced purified water is combined with water from a natural water source (often in an aquifer or reservoir) where it can later receive more treatment before being introduced to a potable water supply distribution system.

Interest-based bargaining: A method intended to increase the effectiveness of negotiations to develop consensus. The goal is for every member of the negotiation to win something, and to do so by addressing all interests, maintain a cooperative approach, and focus on the importance of relationships among members. There is usually more than one satisfactory solution in Interest-based bargaining.

Intertie: A connecting pipeline between water systems that allows the transfer of potable water.

Karst: A terrain with distinctive landforms and hydrology created from the dissolution of soluble rocks, principally limestone and dolomite. Karst terrain is characterized by springs, caves, sinkholes, and a unique hydrogeology that results in aquifers that are highly productive but extremely vulnerable to contamination. In the United States, about 40% of the groundwater used for drinking comes from karst aquifers. [<http://water.usgs.gov/ogw/karst/pages/whatiskarst>]

LRAA: Locational Running Annual Average: The locational average of the most recent 12 months of data.

MCDS: Multi-criteria decision system: A framework for organizing, analyzing, and communicating considerations of proposed approaches to water supply and demand. MCDS produces a model that contains criterion and alternatives. Each criterion and alternative have a description, ratings scales, and weights.

MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Meter Inventory: a multi-layered record of each meter and its associated parts and attributes. In the utility billing database, each meter is linked to several other unique ID numbers, including the radio ID, register ID, usage point, and route. All ID numbers need to be exact and exactly aligned for meter reads to make it into billing.

MGY: Million gallons per year: A unit of measurement that demonstrates both water supply and demand on a municipal-wide scale.

Modeling and forecasting: Water supply planning and analytical tools used in designing the water system and estimating its performance and demands under various future scenarios.

Mount Herman June Beetle Endowment (Fund 718): Mount Herman June Beetle (MHJB) Endowment was established in 2015 to mitigate the impacts due to normal operations at the Graham Hill Water Treatment Plant. The endowment was required buy a United States Fish and Wildlife permit and, in addition to preserving high quality MHJB habitat at Laguna Creek, we established a 30-year, non-wasting endowment to demonstrate our commitment to fund costs associated with protecting the MHJB.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NTUs: Nephelometric Turbidity Units: A measure of the level of turbidity, or suspended particles, in a liquid. Drinking water standards require turbidity to be in the range of ~ 0-1NTU.

Passive recharge: Regarding aquifer storage, passive recharge implies moving water naturally from the surface into ground water systems (such as by substituting surface water to supply water users, and thereby resting extraction wells).

PDWS: Primary Drinking Water Standard: MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Peak season: The months between May and October where demand for water is higher than the remaining months due to dry weather conditions and a significant increase in tourist activity.

PHG: Public Health Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Portfolio: Collections of potential solutions and alleviations to the system's supply and demand shortfall distributed to the Committee to review, consider, and assess.

Price elasticity: Regarding demand, price elasticity is an economic term that represents the responsiveness of demand when the price of goods and/or services are subjected to changes.

RAL: Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Ranney collectors: A patented type of radial collector well used to extract water from a direct connection to a surface water source (e.g., a river) by extending radially under the surface floor (e.g., river bed). These radial or horizontal wells flow to a conventional well before being pumped to the surface.

Rating Agency Credit Scale – Credit ratings express risk in relative rank order and are considered a point in time opinion of the rating agencies. Rating agencies (S&P, Fitch) use the same scale with “AAA” at the top and “BBB-” at the bottom of investment grade ratings. Non-investment or speculative grade ratings begin with BB+ to D. Factors used in assigning a water agency credit rating include: system characteristics, financial strength, management and legal provisions.

Rate Sheet: a handout that lists the monthly price (or rate) of each utility service. Rate sheets are not comprehensive—there are too many miscellaneous services to include on one sheet of paper—but instead include the most common utility services.

Remittance: utility payments sent via the mail. Customer Service now processes an average of 300 mail payments each morning. This process includes picking up the mail from the post office, opening it, batching payment stubs with checks, scanning stubs and checks, reconciling discrepancies between stubs, checks, and accounts, balancing batch payment files, and uploading the receipts into the utility billing system.

Reverse osmosis: A system of filtering dissolved solids from water by driving the water through a semi-permeable membrane. Compared to forward osmosis, reverse osmosis is a high pressure driven system.

Rule curve: As applied to dam operations, for example, indicating the guidelines for how releases from the dam are managed (i.e., when to use the water, and when to store it).

Runoff: The flow of surface water from excess rain or other sources. This occurs when the source of water is distributed faster than the surface is able to absorb it, resulting in the flow of water.

Santa Cruz Water Supply Model: A water resources modeling tool developed by Hydrosystems Group at the University of Massachusetts, Amherst. Used on conjunction with plausible weather forecasts to test the water system and identify vulnerabilities.

Scalability: The capability to alter a project's plans to meet differing demand scenarios (ex.: adapting the plans regarding the size of a recycled water plant to produce less water for a smaller customer base than what was originally imagined).

Scenario planning: Exercises intended to demonstrate potential future water supply and demand situations (ex.: long periods of drought, lowered demand due to conservation, etc.).

SDWS: Secondary Drinking Water Standards: MCLs for contaminants that may adversely affect the taste, odor or appearance of drinking water. These are aesthetic considerations that are not considered as health concerns.

State Revolving Fund: The California State Revolving Fund (SRF) is a source of low-interest financing for investments in infrastructure. The California State Water Resources Control Board (SWRCB), under the federal Safe Drinking Water ACT, combines federal and State funds in the form of Drinking Water State Revolving Fund (DWSRF) program.

Supply augmentation: Adding to the water supply.

Supply-demand gap: The difference between a water system's ability to sustainably store and provide water to its customers and the demand on the system. The amount by which demand may exceed supply, such as in the peak demand season.

TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: The cloudiness or haziness of a fluid caused by the presence of particulates in the water.

Urban Water Management Plan: A report that fulfills the requirements described in the Urban Water Management Planning Act. The report describes the utility's water resource supplies and projects needs over a twenty-year planning horizon with relation to conservation, water service reliability, water recycling, opportunities for water transfers, and contingency plans for drought events. The latest report was published in 2015.

Water 90 Day Operating Fund (Fund 716) – The Water 90 Day Operating Fund provides financial stability, including supporting the Water Department in addressing cash flow issues which are an inherent result of the seasonability of water revenues. Maintaining a strong cash reserve also helps maintain the utility's bond rating and ensure the lowest possible borrowing costs. Together with the Water Operations Fund (Fund 711), the two funds are designed to meet the Water Department's 180 day operating reserve financial goal.

Water Emergency Reserve (Fund 717) – The Water Emergency Reserve provides resources necessary for any emergency repairs required to ensure continued water service to customers and service areas as the result of events which are impossible to anticipate. The fund shall be used in situations such as natural disasters or other unforeseeable cause of damage to or disruption of the system that require financial resources above those that would normally be available to respond to such a situation.

Water Operations Fund (Fund 711) – The Water Operations Fund includes all expenditures and revenues related to the daily operations of the Water Department including the majority of funding for the Department's CIP. Together with the Water 90 Day Operating Fund (Fund 716), the two funds are designed to meet the Water Department's 180 day operating reserve financial goal.

Water Public Art Fund (Fund 714) – The Water Public Art Fund is a set aside for public art projects throughout the City. The Water Department participates in the creation of art which promotes and/or educates the public on the water system. Calculated by fund, 1% is levied on an average of the most recent three-year total eligible capital spending. More information about the City's Public Art program can be found in the Municipal Code Chapter 12.80.

Water Shortage Contingency Plan - Required as part of the Urban Water Management Plan, the WCSP outlines how an agency will manage water supplies during long-term shortages.

Water Rate Stabilization Fund (Fund 713) – The Water Rate Stabilization Fund is intended to provide a financial buffer for the risks which may result from uncontrollable factors such as cool or rainy weather, and economic downturns. It will also help mitigate the inherent risk of basing so much revenue on the volume of water sold.

Water System Development Charges (Fund 715) – The Water System Development Charges (SDC) are one-time fees, collected as a condition of establishing a new connection to the City’s water system or the expansion of an existing connection. The purpose of these fees is to pay for the development’s share of the costs of new and existing water facilities and infrastructure. These funds support the Department’s conservation rebate programs as well as funds a portion of specific CIP projects which improve the system’s capacity. Also referred to as “connection fees.”

Water-neutral: As applied to development paths (i.e., levels of population or economic growth), signifying an approach that does not change overall demand for water.

Water year: The USGS water year begins October 1 and extends through September 30 each year.