



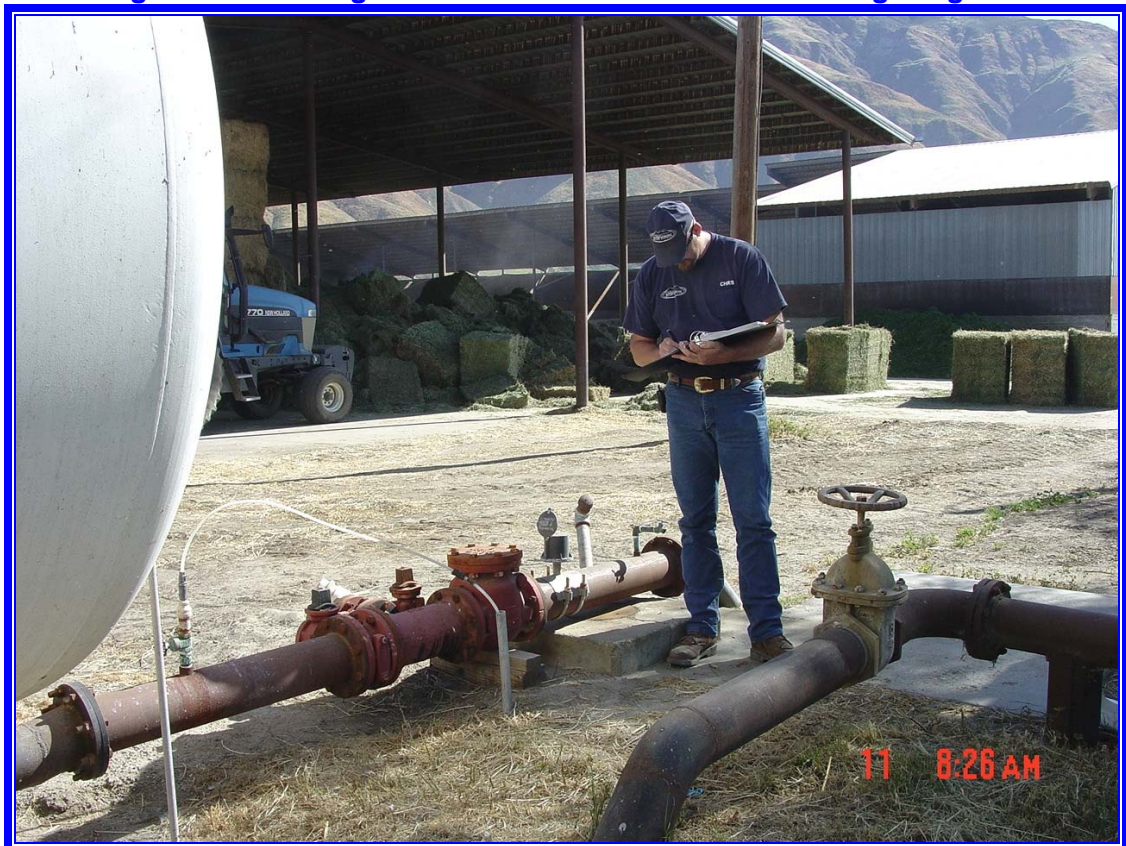
Chapter 6 ~ Proposed 2008 Financial Considerations

Annual costs and the amounts each participating agency contributes for the Watershed Monitoring Program and the Recharge Program are discussed below. For 2008, the Monitoring Program is budgeted at \$112,000. The Recharge Program is not active due to lack of availability of replenishment water and, consequently, has no budget for 2008.

6.1. Watershed Monitoring Program Costs

The MOU for the 2006-2008 Watershed Monitoring Program for the Hemet/San Jacinto Management Area was executed on May 23, 2006. This agreement covers monitoring activities for the three-year period with the costs estimated at \$112,000 per year including the surface water monitoring performed by the U.S. Geological Survey (USGS). The program is funded by contributions from EMWD, LHMWD, and the Cities of Hemet and San Jacinto. It includes water level and water quality monitoring as well as monitoring of groundwater extraction (Figure 23).

Figure 23: Reading a Meter for the Extraction Monitoring Program



The total cost of the Watershed Monitoring Program for 2008 is budgeted at \$112,000. This amount covers continuation of the Groundwater Level, Water Quality, and Extraction

Monitoring Programs, and the Inactive Well Capping/Sealing Program, as previously implemented. Once again the cost of participation in the cooperative surface water monitoring program with the USGS is also included in the cost. The \$6,175 contract with USGS runs from November 1, 2007 through October 31, 2008. EMWD functions as the Monitoring Program Administrator and contracts with the USGS on behalf of the water agencies and cities for stream flow monitoring. Administrative costs, including production of this annual report, are included in the above figure.

The water agencies and cities share the Monitoring Program costs based on their base groundwater extraction percentages which are subject to assessments determined by the Groundwater Policy Committee as shown in Table 24.

Table 24: Monitoring Program Cost-Sharing for 2008

Agency	Base Production (AF)	Production Subject to Assessment	Percentage	Cost Contribution
City of Hemet	6,320	5,420	17.8%	\$ 19,900.
City of San Jacinto	4,031	3,131	10.3%	\$ 11,500.
LHMWD	11,063	11,063	36.3%	\$ 40,700.
EMWD	10,869	10,869	35.7%	\$ 39,900.
Totals	32,283	30,483	100.0%	\$112,000.

6.2. Recharge Program Costs

The cooperative agreement between EMWD, LHMWD, and the Cities of Hemet and San Jacinto for the 2006 Interim Water Supply Plan for the Upper San Jacinto Sub-basins terminates on December 31, 2008 or upon adoption of the Water Management Plan by all parties. Due to the unavailability of State Project Water from MWD, recharge under the agreement during 2008 will not occur. Consequently, no Recharge Program costs for 2008 are anticipated.

6.3. Integrated Regional Water Management Plan

The San Jacinto Watershed Council (Council) embarked on the development of an Integrated Regional Water Management Plan (IRWMP). In addition to meeting the planning needs of the watershed and all stakeholders, the IRWMP will also satisfy the State Department of Water Resources (DWR) requirements for part of Proposition 84 financial assistance and other future potential grant funding opportunities.

The Council retained a consultant to develop the IRWMP. While the IRWMP needs to be a comprehensive plan to meet the requirements of the DWR guidelines, the consultant's scope-of-work did not include development of certain aspects of the Plan including the water supply, water storage, water recycling, and groundwater quantity and quality conditions. Therefore, another consultant was asked by the Council to develop a scope-of-work to cover the elements not included in the original work.

The participants in the Hemet/San Jacinto Water Management Plan executed Letters of Participation indicating their willingness to financially participate in the completion of the elements of the San Jacinto IRWMP not covered by the work done under the auspices of the San Jacinto Watershed Council.

Of the three tasks in the second scope-of work, one of the tasks (Task 1) covers and is exclusive to the west San Jacinto Watershed. EMWD has assumed the cost of Task 1. The

costs for Tasks 2 and 3 will be paid by the Hemet/San Jacinto Water Management Plan participants.

The IRWMP cost breakdown for the participants in the Hemet/San Jacinto Water Management Plan and the shares to be paid by each participating entity are shown in Table 25.

Table 25: Cost Sharing for IRWMP

Agency	Task 1		Tasks 2 and 3		Total Contributions
	Percentage	Cost Contribution	Percentage	Cost Contribution	
City of Hemet	0%	---	19.60%	\$ 14,347.	\$ 14,347.
City of San Jacinto	0%	---	12.50%	\$ 9,150.	\$ 9,150.
LHMWD	0%	---	34.20%	\$ 25,034.	\$ 25,034.
EMWD	100%	\$ 20,976.	33.70%	\$ 24,669.	\$ 45,645.
Totals	100%	\$ 20,976.	100.00%	\$ 73,200.	\$ 94,176.

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Glossary

Abandonment - refers to the condition of a well, the use of which has been permanently discontinued or which is in such a state of disrepair that no water can be produced; such wells should be properly destroyed.

Acre Foot (AF) - the amount of water needed to cover an acre one foot deep (325,900 gallons.) An acre foot can support the annual indoor and outdoor needs of between one and two households and, on average, three acre feet are needed to irrigate one acre of farmland. **AFY** or **AF/Y** refers to one acre foot per year.

Adjudication - an evaluation of groundwater reserves, uses, and availability that is translated by a court into a distribution of the resource.

Alluvium - loose gravel, sand, silt, or clay deposited by streams.

Alquist-Priolo Earthquake Fault Zoning Act - a 1972 State law to mitigate the hazard of surface faulting to structures for human occupancy. See Earthquake Fault Zones.

Aquifer - a water-bearing layer of rock or geologic formation that stores, transmits, and yields significant quantities of water to wells and springs.

Aquitard or **aquiclude** - a zone of soil that acts as a barrier to the movement of water, also called a **Confining Bed**; a less permeable geologic unit that stores but does not readily transmit water.

Artesian - waters that rise to the surface, but do not necessarily flow.

Barometer Well - a specific well established and monitored for specific purposes such as water level and quality.

Basement - harder and usually older igneous and metamorphic rocks that underlie the main, softer and usually younger, sedimentary rock sequences of a region and extend downward to the base of the earth's crust.

Basin - a naturally occurring sediment filled zone usually bounded by significantly different geologic settings or formations.

Basin Plan - a State of California mandated evaluation and policy document dealing with the waters of the State. Activities in the regional basins are regulated by the appropriate Regional Water Quality Control Board.

Bedrock - relatively hard, solid rock that commonly underlies softer rock, sediment, or soil.

Brackish - refers to groundwater with Total Dissolved Solids (TDS) content between seawater and that which is suitable for man's purposes.

Cone of Depression - the depression head around a pumping well caused by the withdrawal of water.

Confined Aquifer - a permeable geologic unit (aquifer) that is located beneath a saturated, less permeable unit (that is, beneath an aquitard) and contains water under pressure.

Conjunctive Use - the planned use of groundwater in conjunction with surface water in overall management to optimize total water resources.

Confining Zones - soils or aquifers bounded so as to result in artesian or rising water in a well placed into the zone.

CRW - Colorado River Water as delivered by Metropolitan Water District (MWD) of Southern California through an aqueduct to the Southern California area.

Crust - the outermost major layer of the earth, ranging from about 6 to 40 miles in thickness worldwide.

Drawdown - the reduction in head at a point caused by the withdrawal of water from an aquifer.

Driller's Log - an account, prepared by a well drilling company, of the soils and their types, identification, description, and depths encountered while drilling a well. Coarse-grained soils (gravels and sands) are generally good water-bearing soils, while silts and clays are poor water-bearing soils.

Earthquake Fault Zones - Under the Alquist-Priolo Earthquake Fault Zoning Act, these are regulatory zones around active faults.

Effluent - water leaving a wastewater treatment plant.

Evaporites – A class of sedimentary minerals and sedimentary rocks that form by precipitation from evaporating aqueous fluid.

Fault Zone - the surface or zone of rock fracture along which there has been displacement.

Geology - the study of the planet earth including the materials it is made of, the processes that act on those materials, the products formed, and the history of the planet and its life forms since its origin.

Geomorphology - the study of the character and origin of landforms, such as mountains, valleys, etc.

Geophysics - techniques available and used to help define geologic, hydrologic, or groundwater regimes.

Geotechnical - refers to the use of scientific methods and engineering principles to acquire, interpret, and apply knowledge of earth materials for solving engineering problems.

GPS - Global Positioning System, developed by the U.S. Department of Defense, it is the only system that shows an exact position on the Earth anytime, anywhere, in any weather. Twenty-four GPS satellites orbit 11,000 nautical miles above the Earth. Ground stations located worldwide continuously monitor the satellites. The satellites transmit signals that can be

detected by anyone with a GPS receiver. Using the receiver, a position can be located with great precision.

Graben - a bordered depression or trough-like structure filled or partially filled with sediments; usually formed by faulting and downward (relative) movement of block- like geologic structures.

Groundwater - water stored underground in the pore spaces within rocks and other alluvial materials and in fractured hard rock occurring in the saturated zone.

Head - the pressure exerted by water generally expressed as feet, as in 100 feet of water is about a pressure of 43 pounds per square inch; see Total Head.

Homogeneous - term used to describe groundwaters that have common or nearly common characteristics, such as concentrations of water quality constituents.

Hydraulic Conductivity - the capacity of rock or soil to transmit water.

Hydraulic Gradient - change in head per unit of distance measured in the direction of the head change.

Hydrologic - refers to any facet of water in its various forms, travels, and uses including precipitation, runoff, evaporation, percolation, and groundwater, either natural or man-made.

Impermeable - having a texture that does not permit water to move through quickly.

Liquefaction - a process by which water-saturated sediment temporarily loses strength and acts as a fluid or liquid; this effect can be caused by earthquake shaking.

Lithologic - having to do with soils and their types, identification, description, and composition. Coarse-grained soils (gravels and sands) are generally good water- bearing soils, while silts and clays are poor water-bearing soils.

Metropolitan Water District of Southern California (MWD) - MWD is made up of twenty-six member agencies, one of which is the Eastern Municipal Water District, MWD's easternmost member agency. MWD was formed in 1928 for the purpose of supplying the southern coastal plain with supplemental water. MWD's area has expanded to include six southern California counties encompassing 5,200 square miles and seventeen million people.

Modeling - analysis to predict future activities, such as of a groundwater basin.

Monitoring wells - wells primarily used to gather various types of data for specific purposes.

Mitigation - acts that lessen, eliminate, dilute, or remove impacts; they usually cause a betterment or positive effect.

Objectives (Basin Plan Objectives) - water quality criteria as established by the Regional Water Quality Control Board.

Overdraft - condition that occurs in a groundwater basin when pumping exceeds recharge over an extended period of time; extractions in excess of the safe yield are termed overdrafts.

Parameters - scientific terms for groundwater evaluation such as infiltration rate, permeability, specific yield, transmissivity, storage coefficient, etc.

Peak - generally considered to be maximum water use occurring during the greatest demand period of a year, month or day.

Perched Zone - a zone of limited area, located above the main water table, that occurs when infiltrating water is impeded by a low permeability layer (such as clay), creating saturated conditions above the impeding layer.

Percolation - the act of water moving through soil or rock from the surface to the saturated zone.

Perforations - openings in a well casing to allow the entrance of groundwater into the well; may be made either before or after installation of the casing.

Permeability - the capacity of rock or soil to transmit a fluid, usually water.

Pilot Project - an experiment conducted to determine the probable outcome of a full-scale project.

Porosity - the voids or openings in a rock; porosity may be expressed quantitatively as the ratio of the volume of openings in a rock to the total volume of rock.

Province - a water drainage area; the Santa Ana River Province is all that drainage area tributary to the Pacific Ocean at the Santa Ana River confluence.

Pumping Water Level - normal operating water level in a well such that a sustained yield is obtained without harm to pumping equipment.

Recharge - the process by man or nature of putting water into the soil or groundwater zone.

Reclaimed or Recycled Water - sewage wastewater treated to such a degree to be used beneficially, for example on landscape or certain crops; Recycled Water is now the preferred term.

Refraction (Seismic) - a method to determine various geologic regimes by sound waves.

Rock - any naturally formed, consolidated or unconsolidated material (excluding soil) consisting of two or more minerals.

Safe Yield - refers to the magnitude of the annual extractions from an aquifer that can continue indefinitely without bringing some undesirable result, such as deteriorating water quality, excessive pumping lifts, or infringement on others' water rights. Regardless of how it is defined, it applies only to a specific set of conditions based largely on judgment as to what is desirable.

Saturated - refers to soils or rocks where all the voids are filled with water.

Saturated Zone - that part of a water-bearing layer of rock or soil in which all spaces, large or small, are filled with water.

Sedimentary - refers to soils or rocks formed by deposition.

Soil - the layer of material at the land surface that will support plant growth.

Specific Capacity - the yield of a well per unit of drawdown.

Specific Yield - the volume of water released from an area of aquifer for a unit decline in the water table. The specific yield is a significant fraction of the effective porosity.

Spurious - small or superficial.

State Limit - mandatory maximum or recommended levels of water quality constituents.

State Project Water (SPW) - water developed from the Sacramento - San Joaquin River Delta by the State of California.

Static Water Level - the water level in a well with no residual effects from pumping of that well.

Storage - in groundwaters, the water volume that can generally be recovered, used, or exhausted; this volume is about 10% to 14% of the total soil and water volume.

Subareas - areas identified by a common set of features such as geologic area, common water source, common sewage treatment plant, common financing or taxing base, etc.

Subsidence - a lowering of the surface of the earth generally due to excess groundwater withdrawal or soil consolidation during a seismic event.

Surface Rupture - occurs when movement on a fault deep within the earth breaks through to the surface. Not all earthquakes result in surface rupture. Fault rupture may occur suddenly during an earthquake or slowly in the form of fault creep; it almost always follows pre-existing faults that are zones of weakness. Fault creep is the slow rupture of the earth's surface. It may be observed as offset and deformed curbs, streets, buildings, and structures that lie on top of the fault.

Surficial - refers to the surface or near surface component of soil or groundwater.

Tectonic - activities associated with the movement or placement of geologic features; rock forming processes and the resulting structures.

Total Dissolved Solids (TDS) - also known as **Total Filterable Residue (TFR)**. It is a secondary drinking water standard because it poses little direct threat to human health; the principle concern is that higher TDS concentrations (greater than 1,000 mg/L) lead to lower consumer acceptance (due to poor taste characteristics) and shorter appliance lifetimes.

Total Head - The height above a datum plane of a column of water. In a groundwater system, it is composed of elevation head and pressure head.

Unconfined Aquifer - an aquifer that discharges and recharges with an upper surface that is the water table; a permeable geologic unit with the water table forming its upper boundary.

Unsaturated Zone - the subsurface zone, usually starting at the land surface and ending at the water table, which includes both water and air in spaces between rocks.

Vadose Zone - the partially saturated zone between the ground surface and the water table.

Veneer - a three-dimensional configuration of soil that has a large horizontal extent compared to depth.

Water Table - the upper surface of the saturated zone that determines the water level in a well in an unconfined aquifer; the level in the saturated zone at which the pressure is equal to the atmospheric pressure.