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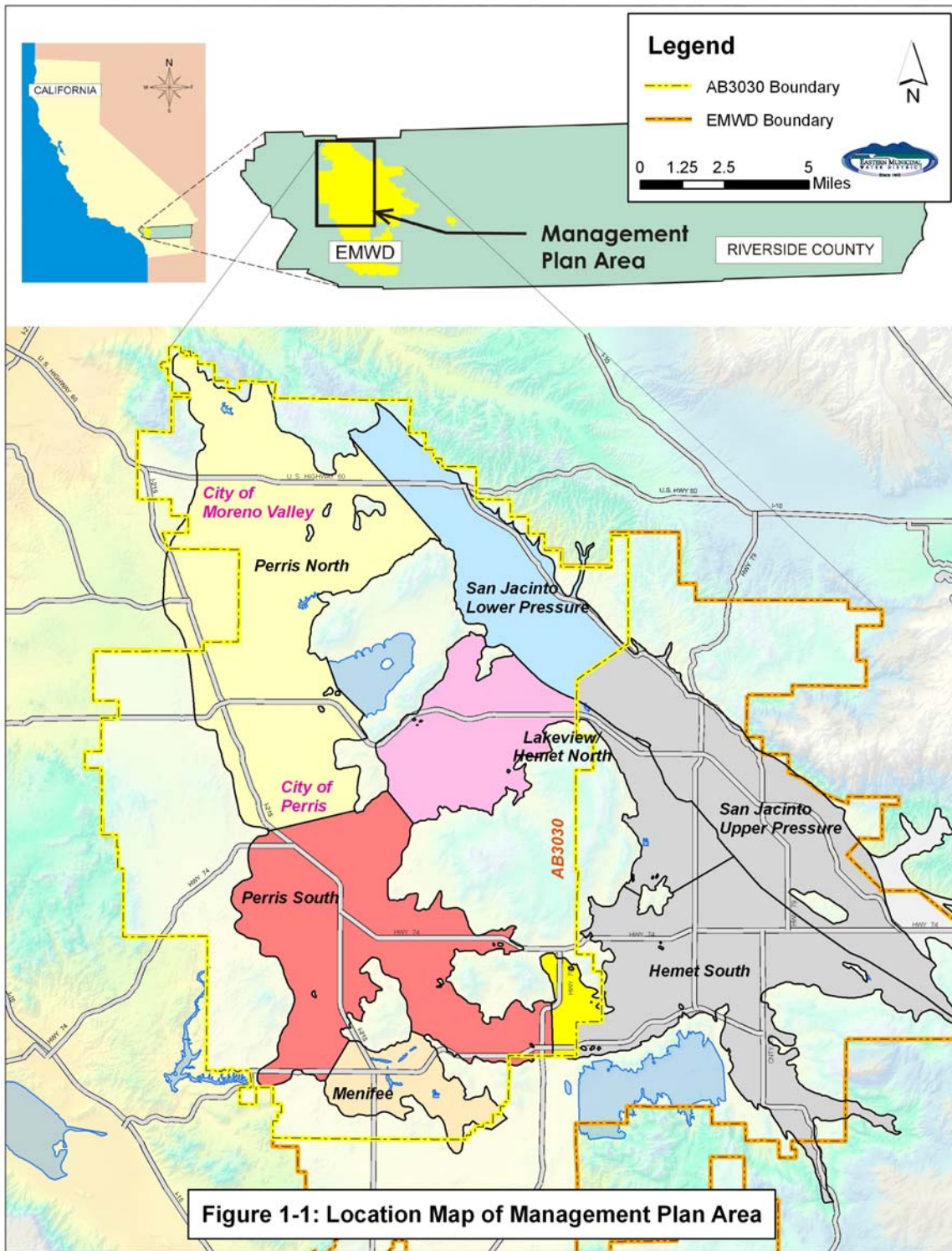
1 EXECUTIVE SUMMARY

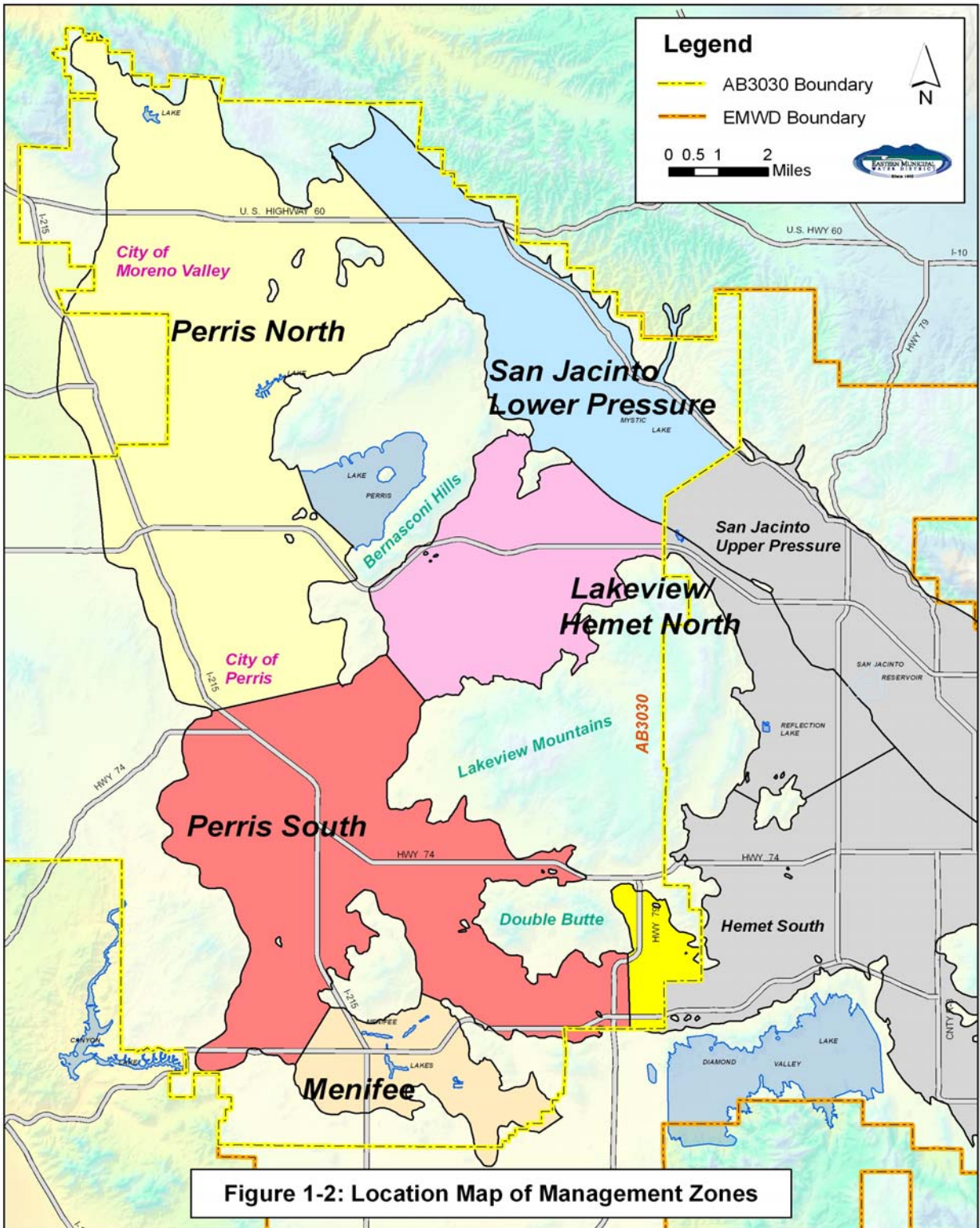
The *West San Jacinto Groundwater Basin Management Plan 2008 Annual Report* (Annual Report) was prepared by Eastern Municipal Water District (EMWD) in accordance with the *West San Jacinto Groundwater Basin Management Plan* (EMWD, 1995 [Management Plan]). The reporting period extends from January 1, 2008 through December 31, 2008.

The Management Plan area is located in the western portion of Riverside County within the San Jacinto River Watershed and includes the cities of Moreno Valley and Perris, as well as the unincorporated areas of Lakeview, Nuevo, Sun City, Menifee, and Winchester, as presented on Figure 1-1. The Management Plan area covers approximately 256-square miles (over 164,200 acres). The Management Plan area has been divided into six (6) management zones as shown on Figure 1-2, encompassing water bearing sediments (aquifer materials) as well as essentially non-water bearing areas such as the Lakeview Mountains, the Bernasconi Hills around Lake Perris, the Double Butte area near Winchester, and areas in the extreme northern and western portions of the EMWD.

The Annual Report is presented in the following chapters:

- Chapter 1 EXECUTIVE SUMMARY – provides a summary of the report along with analysis and presentation of long term trends.
- Chapter 2 INTRODUCTION – provides an overview of the basis and purpose of the report; a discussion on the Advisory Committee; and the progress of tasks identified in *West San Jacinto Groundwater Basin Management Plan 2007 Annual Report* (2007 Annual Report). The 2007 Annual Report contained eleven recommendations and activities for calendar year 2008. Those recommendations and activities, and the status of efforts with regard to each, are discussed in detail.
- Chapter 3 ACTIVITIES RELATED TO THE MANAGEMENT ZONES – presents information on Groundwater Quality, Water Level, and Extraction Monitoring Programs; recycled water use; precipitation; the Inactive Well Capping/Sealing Program; County well permits; and additional activities, special issues, or programs affecting the entire Management Plan area and/or specific management zones.





Chapter 4 RECOMMENDATIONS AND FUTURE ACTIVITIES – presents recommendations and annual budget for the next year based upon the current year's activities and annual budget.

1.1 Program Summary

During the 2008 groundwater quality monitoring program, water quality samples were collected from 102 wells in the Management Plan area. The highest Total Dissolved Solids (TDS) concentration registered in the Plan area was 12,800 mg/L in the Perris South Management Zone; and the lowest was 220 mg/L in the Perris North Management Zone. The highest Nitrate as Nitrogen (NO₃-N) concentration measured in the Plan area was 100.0 mg/L in the Perris South Management Zone; and the lowest measured were “non-detects” in the Lakeview portion of the Lakeview/Hemet North, Perris North, Perris South, Menifee, and San Jacinto Lower Pressure Management Zones. TDS and NO₃-N concentrations for wells in the Management Plan area are presented in Chapter 3. A map showing graphic representations of the 2008 water quality characteristics for individual wells may also be found in Chapter 3.

Statistical volume weighted averages for TDS and NO₃-N in mg/L were calculated for each management zone in 2007 and 2008 following the general methodology set forth in the Santa Ana Watershed Project Authority (SAWPA) TIN/TDS study (Wildermuth, 2000 [TIN/TDS Study]). The Perris North, Perris South, and San Jacinto Lower Pressure Management Zones showed significant (>10%) increases of volume weighted average NO₃-N concentrations. The Menifee Management Zone showed a significant decrease of volume weighted average NO₃-N concentrations. A detailed discussion of the significant changes and likely causes may be found in Chapter 3.

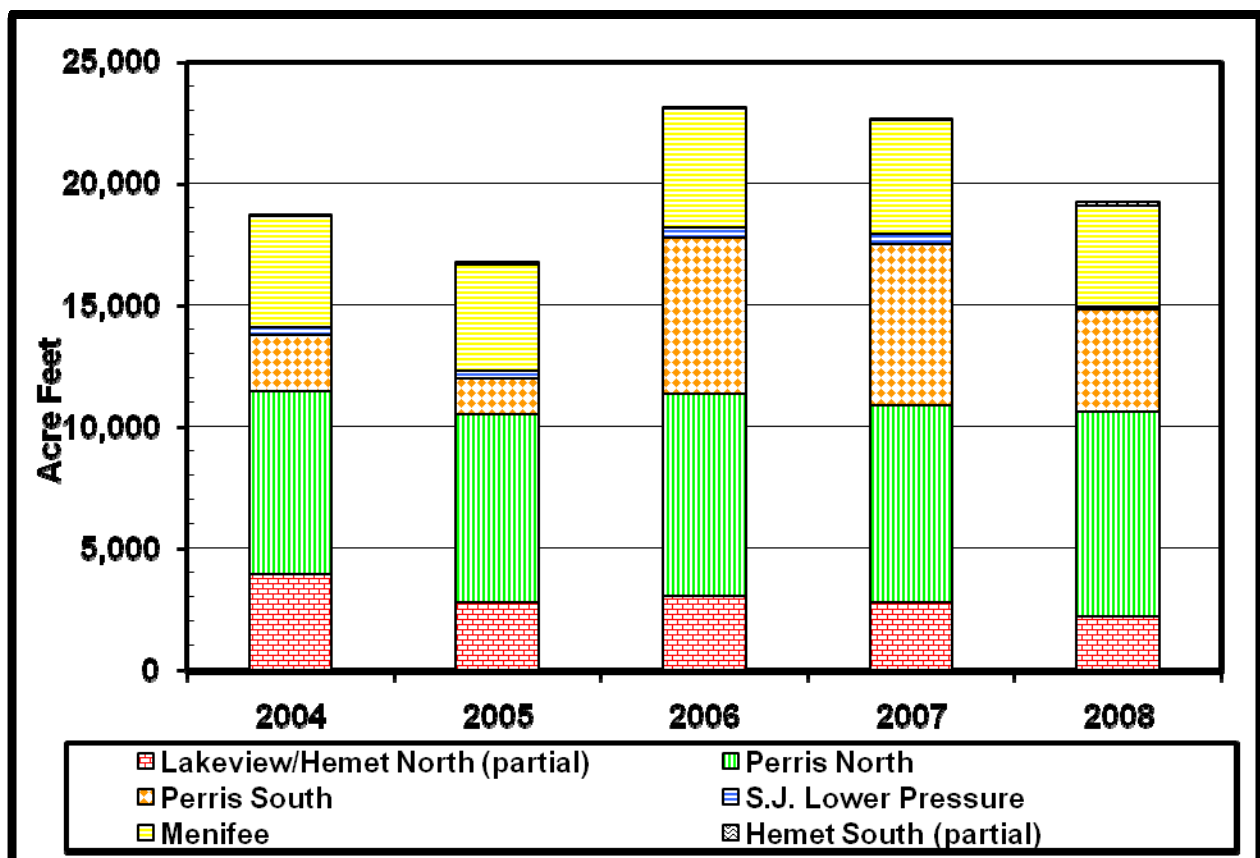
During spring 2008, EMWD gauged depth to water in 165 wells in the Management Plan area. In that same time period, an additional 470 depth to water readings were reported to EMWD providing a total of 635 wells for analysis in the Management Plan area. A groundwater elevation map was generated from the spring 2008 data then compared, via a geographic information system (GIS), to the spring 2007 groundwater elevation map. In addition to year-to-year elevation comparisons, water level data were also utilized to determine groundwater flow direction and gradient. The directions of groundwater flow in the Management Plan area are presented on the groundwater elevation contour map in Chapter 3. Generally, directions of groundwater flow are similar to previous years.

Groundwater level measurements for both spring 2007 and 2008 were used to calculate average changes in groundwater storage for each management zone using best engineering estimates consistent with the SAWPA method used in the TIN/TDS Study (Wildermuth, 2000). The Lakeview portion of the Lakeview/Hemet North, Perris South, and Menifee Management Zones showed slight (0 to 1%) increases in groundwater storage. The San Jacinto Lower Pressure Management Zone showed a slight (0 to 1%) decrease in

groundwater storage. The Perris North Management Zone showed a minor (1 to 3%) increase in groundwater storage.

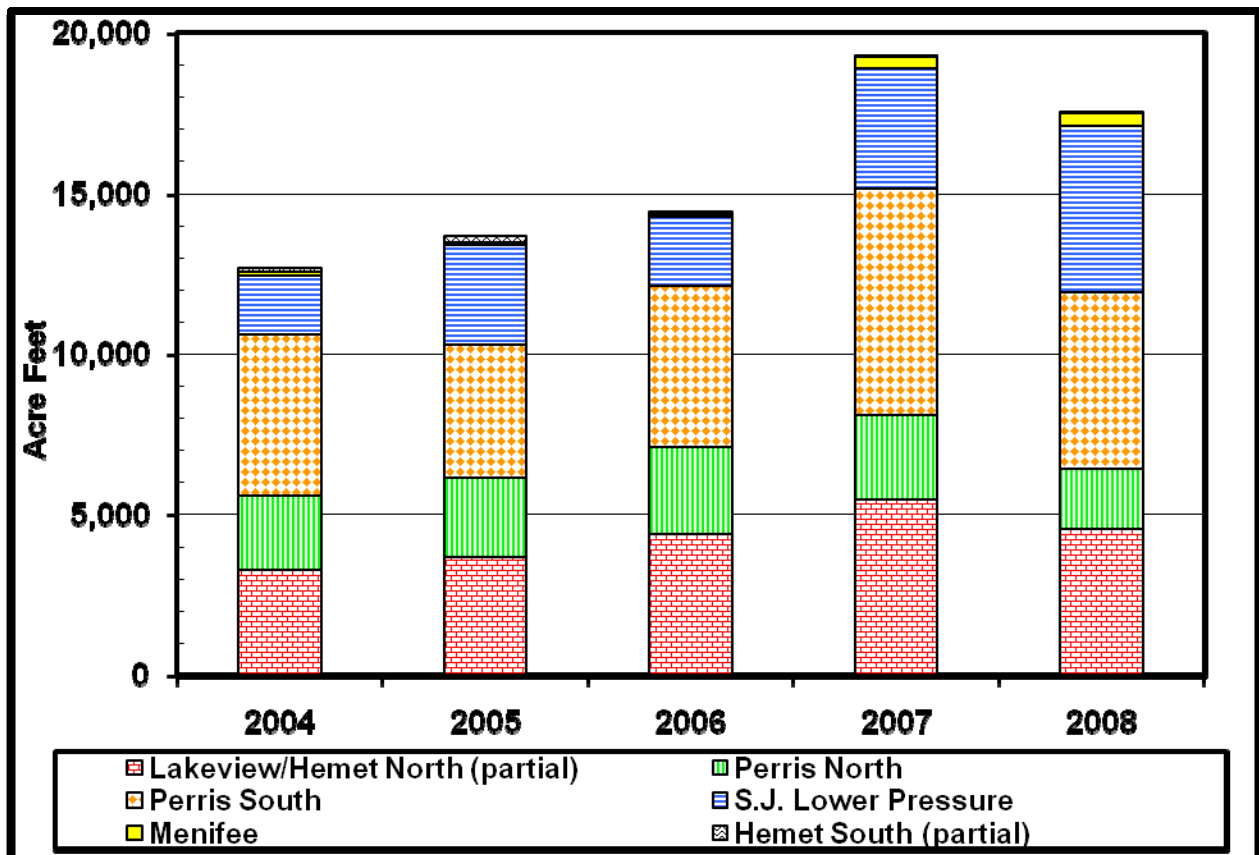
Groundwater extraction for 2008 in the Plan area totaled 19,258 AF (Acre Feet). This total groundwater extraction represents a decrease of 3,377 AF when compared to 2007 extractions. There were 70 wells monitored as part of the Groundwater Extraction Monitoring Program in 2008. Of the 70 wells, 52 (74%) were metered and 18 (26%) were estimated by EMWD. Of the 19,258 AF of groundwater extraction, 14,416 AF (75%) is metered and 4,842 AF (25%) is estimated by EMWD. Figure 1-3 presents groundwater extraction by management zone for the period 2004 through 2008.

Figure 1-3: Groundwater Extraction by Management Zone



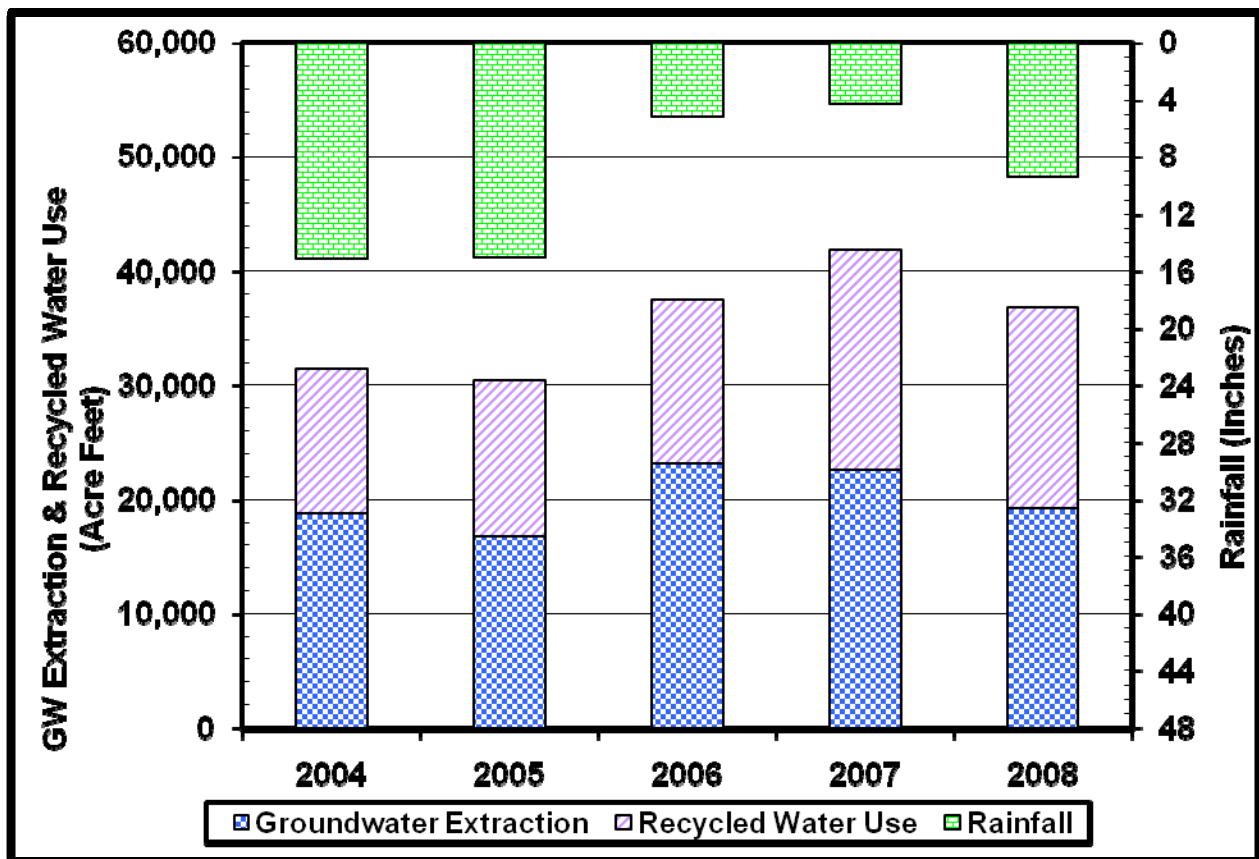
Recycled water use in the Management Plan area totaled 17,529 AF in 2008. This water usage represents an decrease of 1,762 AF from 2007. Sixty-two (62%) percent of EMWD's recycled water sold was used for agricultural irrigation, and the remaining thirty-eight percent was used for irrigated landscaping, golf courses, construction, and habitat creation. Figure 1-4 presents recycled water use by management zone for the period 2004 through 2008.

Figure 1-4: Recycled Water Use by Management Zone



The Riverside County Flood Control and Water Conservation District maintains rainfall data for stations in the Management Plan area. Precipitation in 2008 was approximately nine inches, which is below the long-term average (1910-2008) of eleven inches per year for the area. The area also experienced well below average rainfall in 2007 only totaling four inches. Groundwater extraction, recycled water use, and rainfall for 2004 through 2008 can be found in Figure 1-5. The available precipitation data for 2004 through 2008 for five representative stations, identified by name, and township, range, and section, are shown in Table A-7 of Appendix A.

Figure 1-5: Groundwater Extraction, Recycled Water Use, and Rainfall



Inactive wells and open casings create the potential for groundwater contamination and may present a hazard for small children and animals. EMWD initiated the Inactive Well Capping/Sealing Program in 2000. In this program, inactive, unused wells are capped and/or sealed at no charge to the well owner. These wells are, when possible, added to the Groundwater Quality and Water Level Monitoring Programs, thereby increasing the data points available for analysis. There was one inactive well capped in the Management Plan area during 2008 as part of the Inactive Well Capping/Sealing Program. Sixty wells have been capped in the Management Plan area since this program has been in existence.

The County of Riverside is the governing agency regarding well permits in the Management Plan area, and during 2008, one hundred and twenty-six well permits were issued in the Management Plan area. Permits for six domestic wells were issued. Five permits were issued for agricultural wells, sixty permits for monitoring wells, and four permits for cathodic protection wells. Fifty-five well abandonment permits were issued. EMWD has initiated contact with the owners of the five agricultural wells for possible inclusion in the groundwater monitoring programs. EMWD also verifies proper abandonment/destruction of wells in the Management Plan area.

1.2 Recommendations and Budget Summary

Presented in Chapter 4 are the recommendations and budget for the next year. The 2009/2010 fiscal year estimated budget totals \$112,000. Recommendations for 2009 include:

- Continue the Groundwater Quality and Water Level Monitoring Programs
- Continue the Groundwater Extraction Monitoring Program
- Continue the Inactive Well Capping/Sealing Program
- Continue to provide annual reports to well owners participating in the Groundwater Monitoring Programs
- Continue Monthly Reports to the Advisory Committee
- Continue to pursue potential state or federal funding sources for the benefit of the Management Plan area
- Continue the re-organization of the Annual Report
- Continue EMWD's Groundwater Salinity Management Activities, including
 - Perris Basin Desalination Program
 - Perris II Desalter
 - Iron and Manganese Removal Facilities
 - Brine Concentrate and Management Study
 - Quantification of Nitrogen Removal under Recycled Water Recharge Ponds and
 - Regional Brine Lines
- Continue the Operation of the North San Jacinto Water Supply Initiative
- Support EMWD's participation in regional activities
 - Groundwater Monitoring Task Force
 - Total Maximum Daily Loading
 - Western Riverside County Agricultural Coalition
 - San Jacinto Watershed Council and
 - March Air Reserve Base Superfund Clean-Up and Groundwater Modeling Effort
- Support the design and implementation of EMWD's Key Well Program
- Hold elections for Two Positions on the Advisory Committee