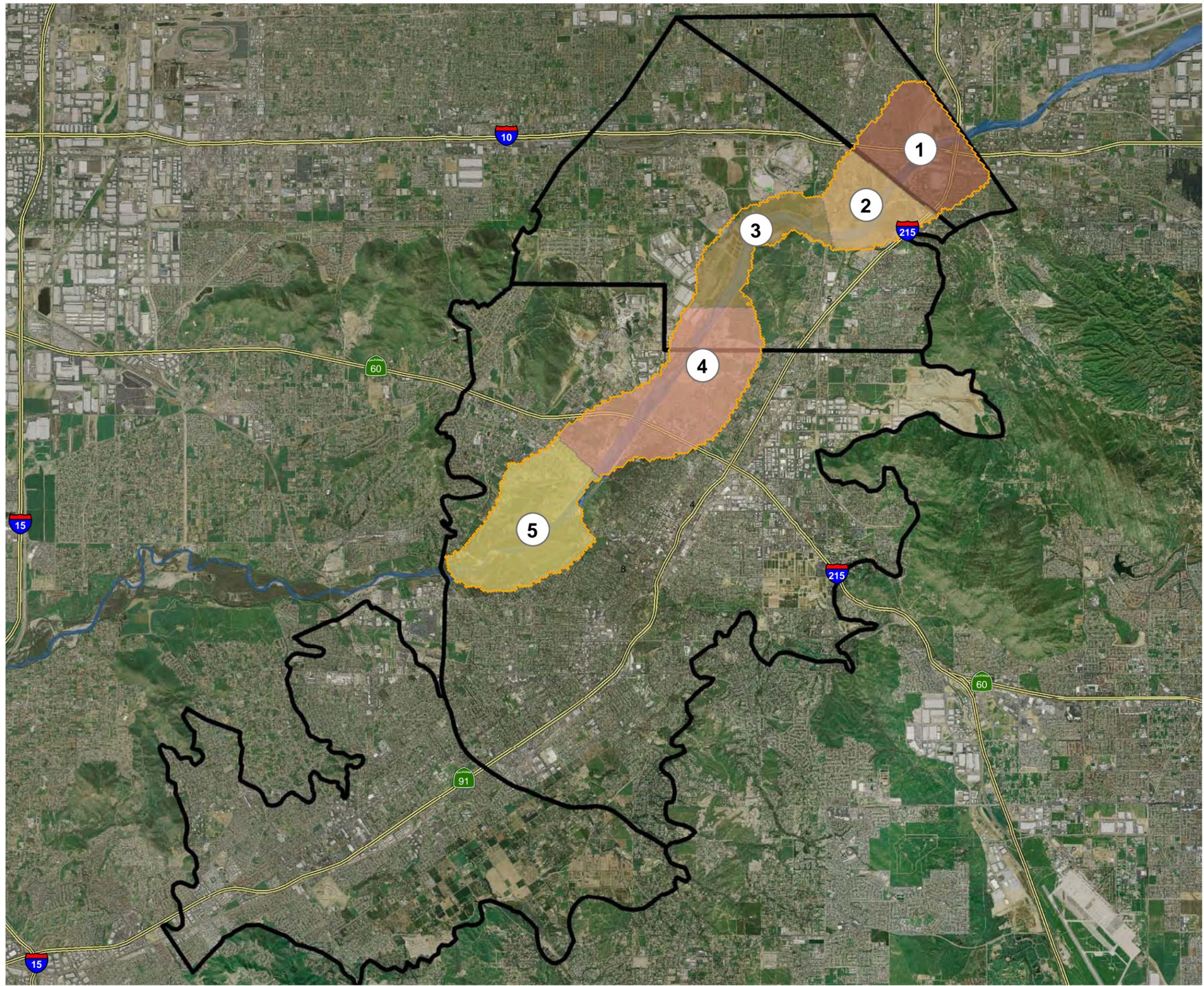
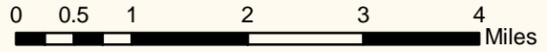
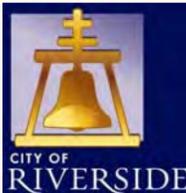


# Figure 25 Aquifer Property Zones Layer 1

### Legend

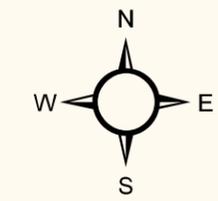
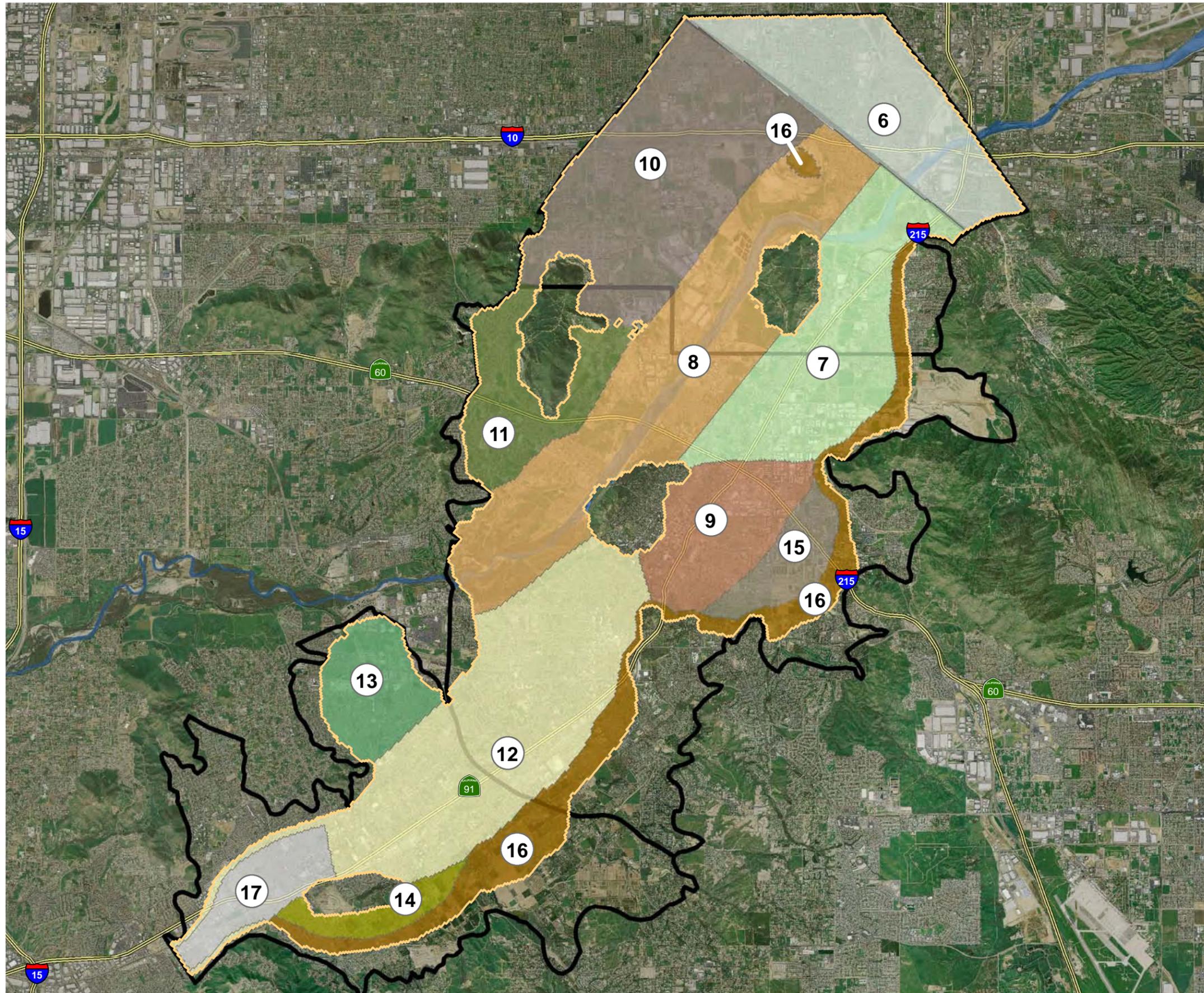
- Highway
- Santa Ana River
- Model Boundary
- Active Model Area in Layer 1
- Parameter Zones



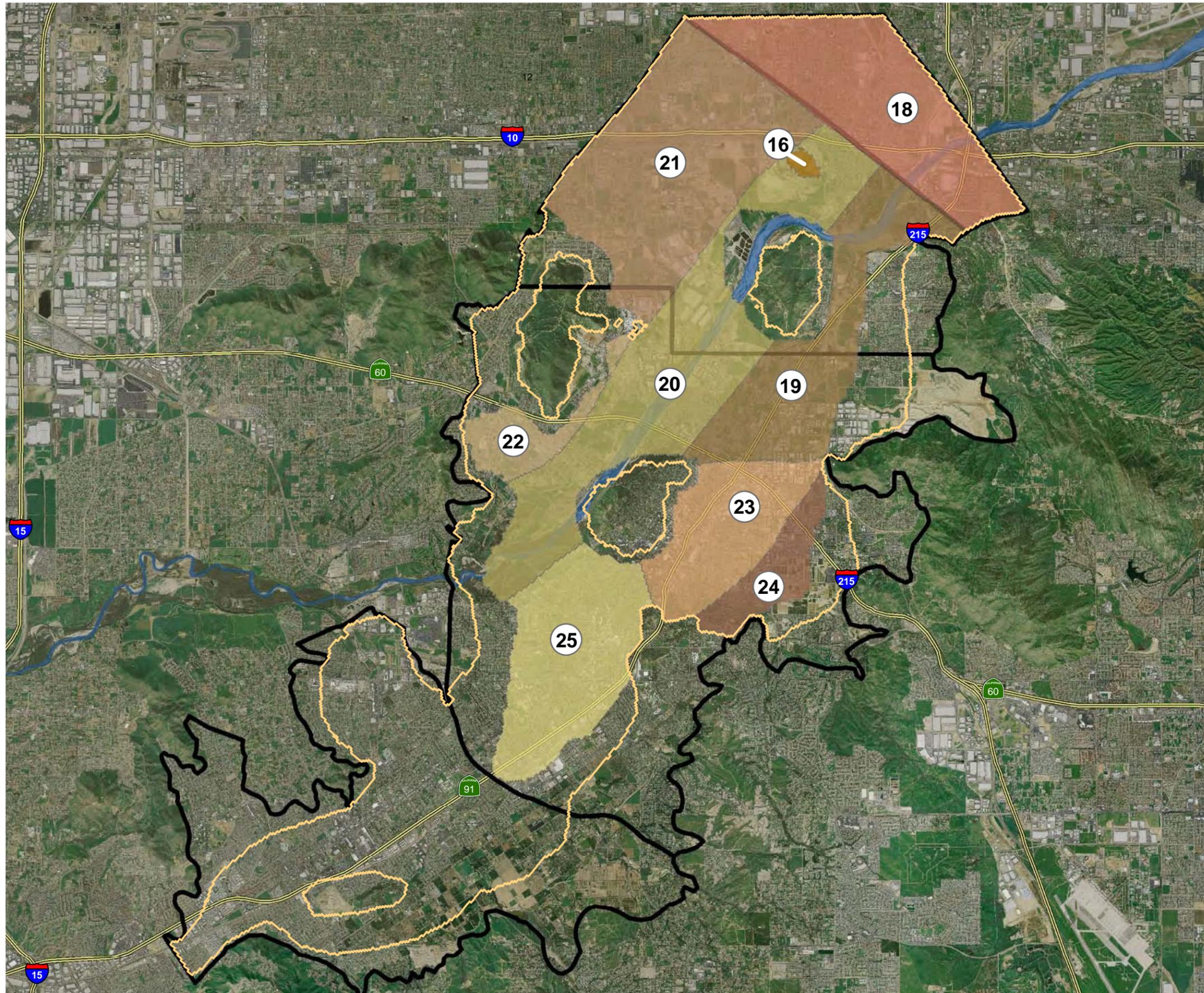
# Figure 26 Aquifer Property Zones Layer 2

**Legend**

-  Highway
-  Santa Ana River
-  Model Boundary
-  Active Model Area in Layer 2
-  Property Zones

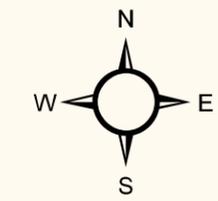


# Figure 27 Aquifer Property Zones Layer 3

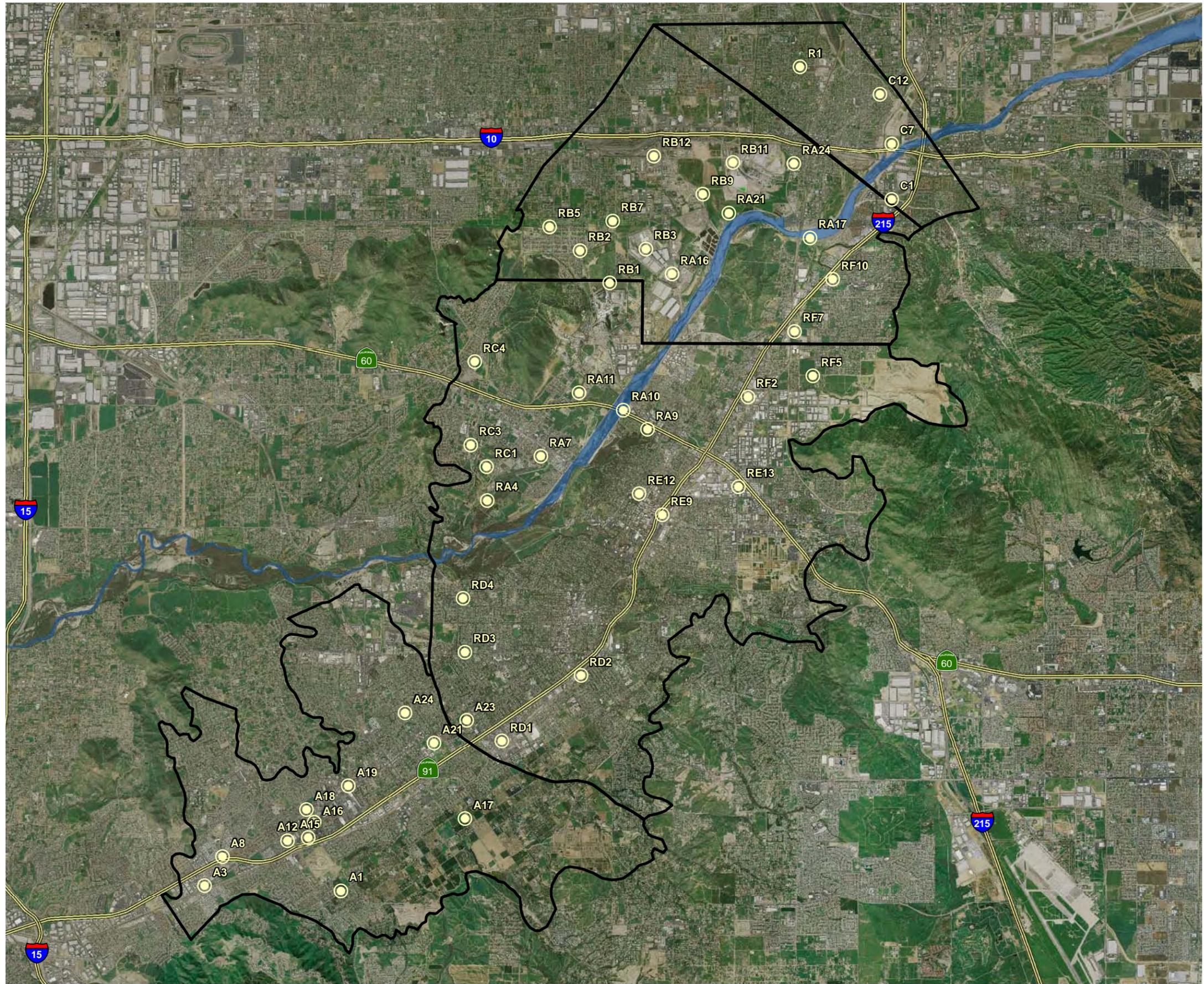


**Legend**

- Highway
- Santa Ana River
- Model Boundary
- Active Model Area in Layer 3
- Property Zones



# Figure 28 Calibration Wells

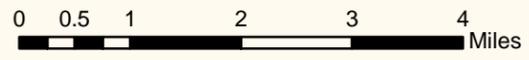
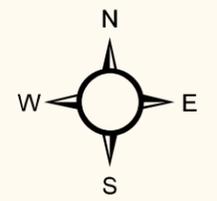


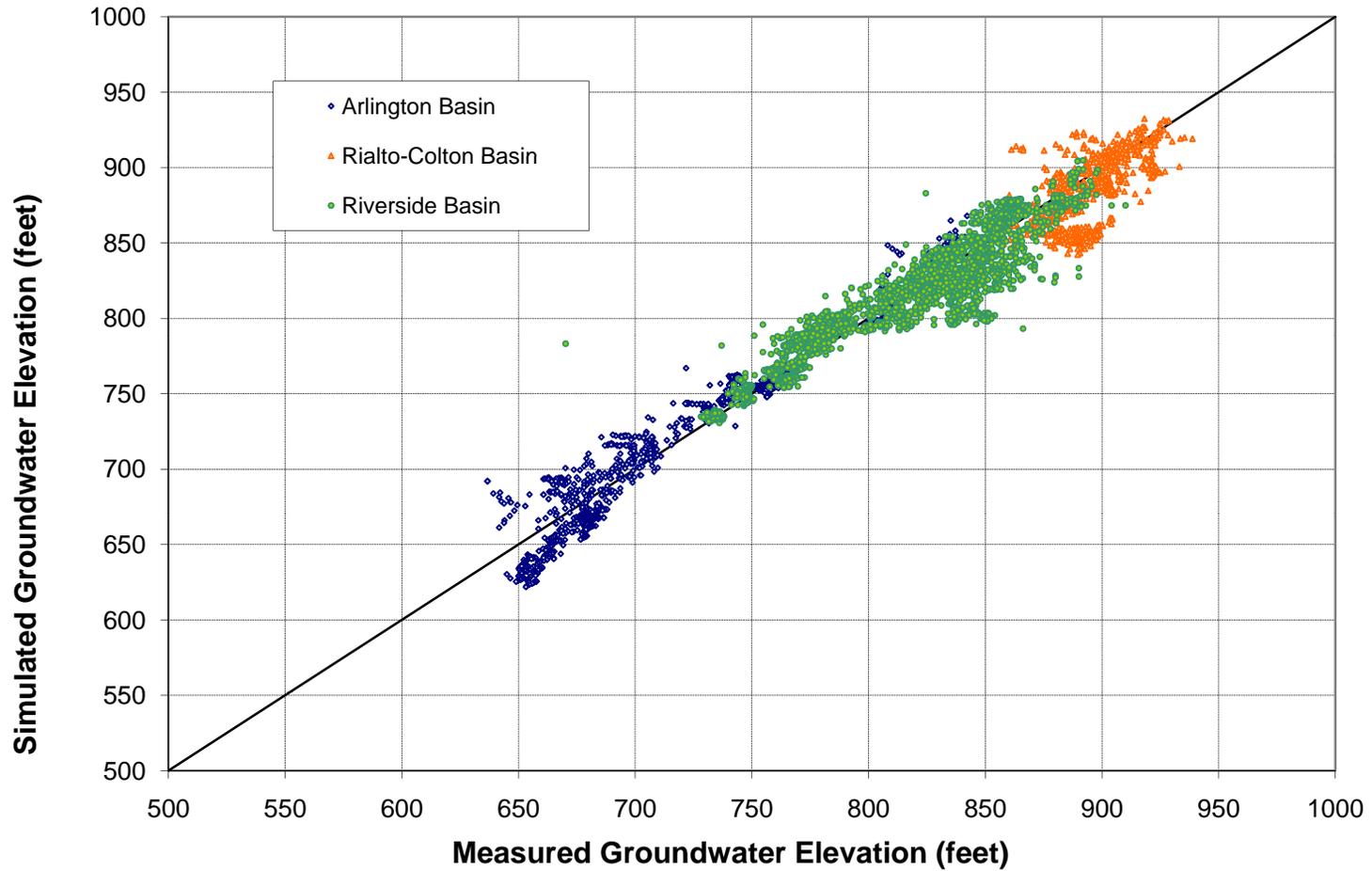
**Legend**

- Highway
- Santa Ana River
- Model Boundary
- Calibration Wells

**CITY OF RIVERSIDE**  
**WESTERN MUNICIPAL WATER DISTRICT**

**RIME** Water Resources & Information Management Engineering, Inc.

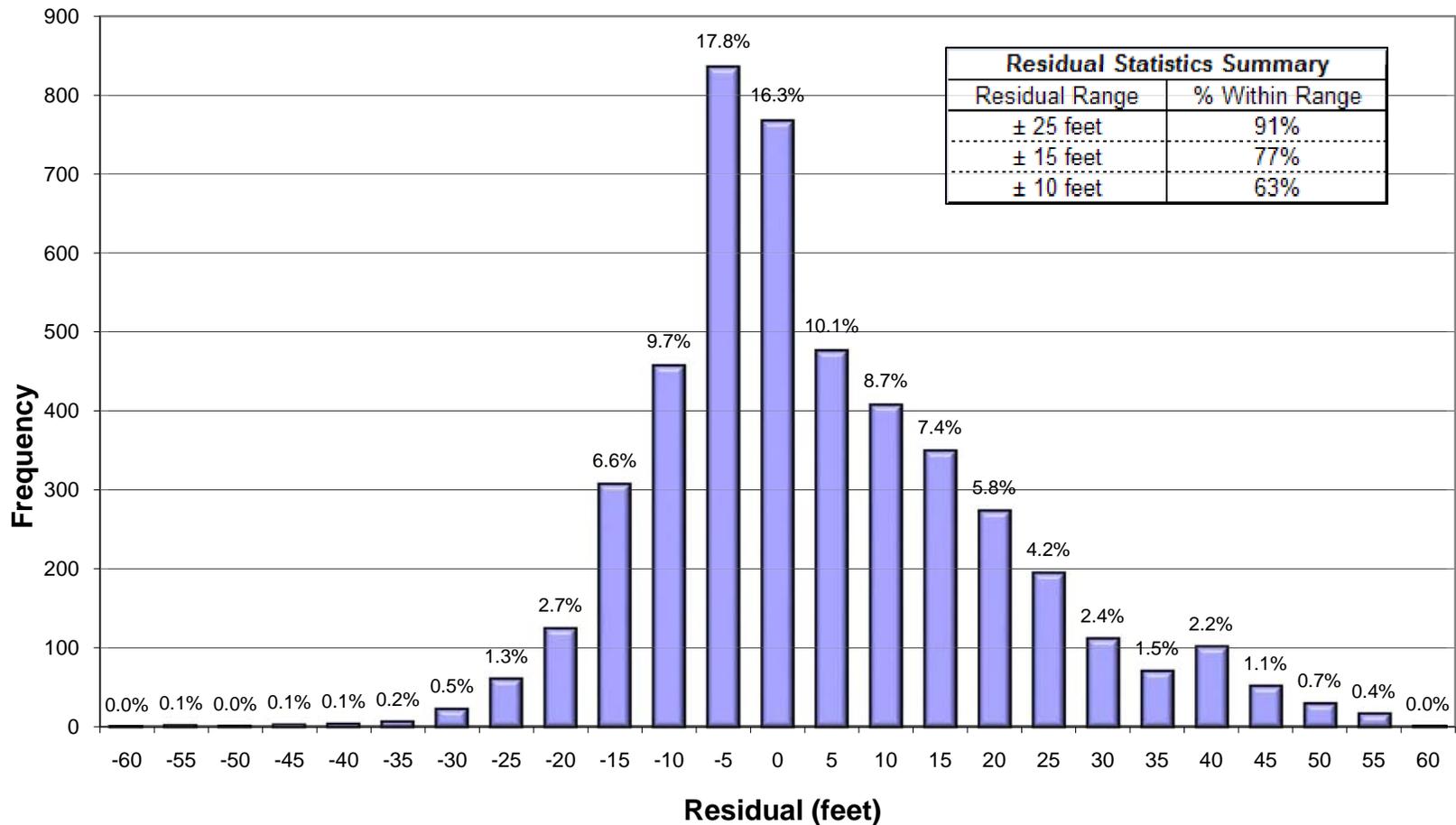




**Comparison of Simulated and Measured Heads for All Calibration Wells**

Figure 29  
April 2010



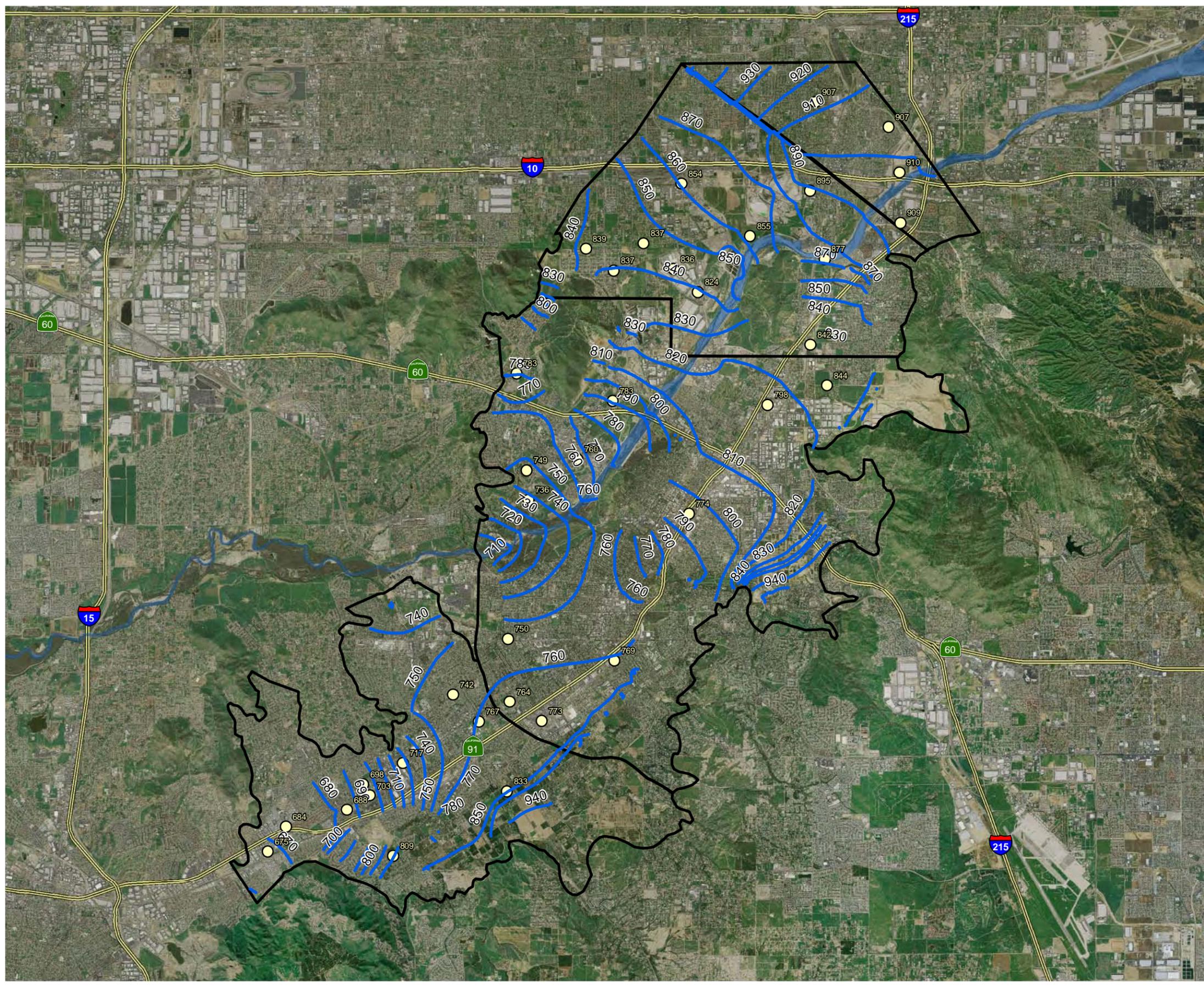


Histogram of Residuals Between Simulated and Measured Groundwater Elevations

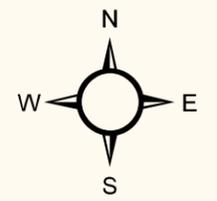
Figure 30  
April 2010

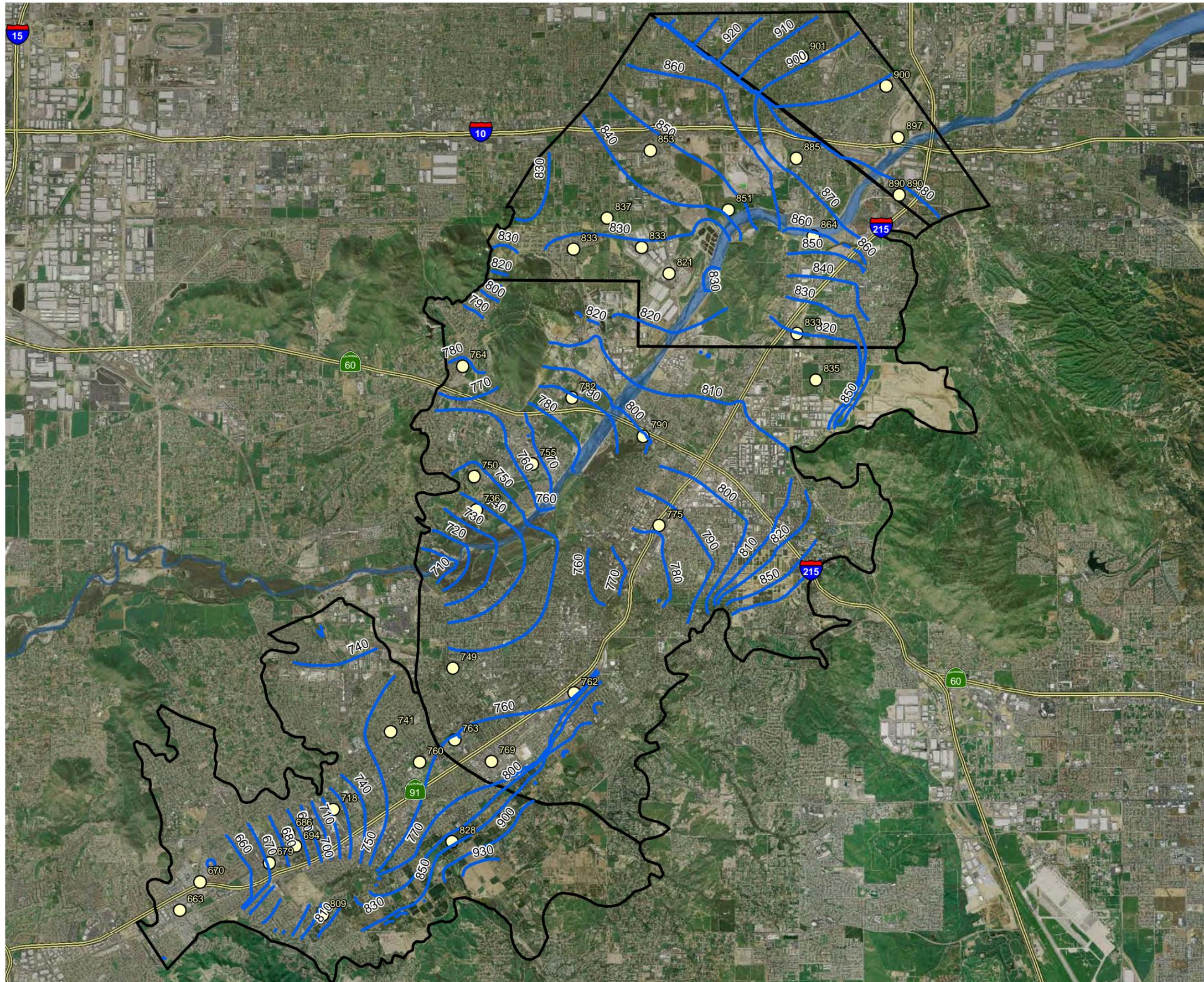


# Figure 31a Simulated and Observed Groundwater Elevations (1999 - Dry)



- Legend**
-  Highway
  -  Santa Ana River
  -  Simulated Groundwater Elevation Contour
  -  Observed Groundwater Elevation

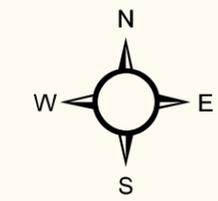
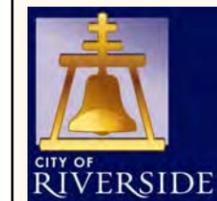




**Figure 31b  
 Simulated and  
 Observed  
 Groundwater  
 Elevations  
 (2001 - Normal)**

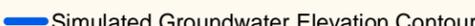
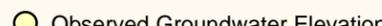
**Legend**

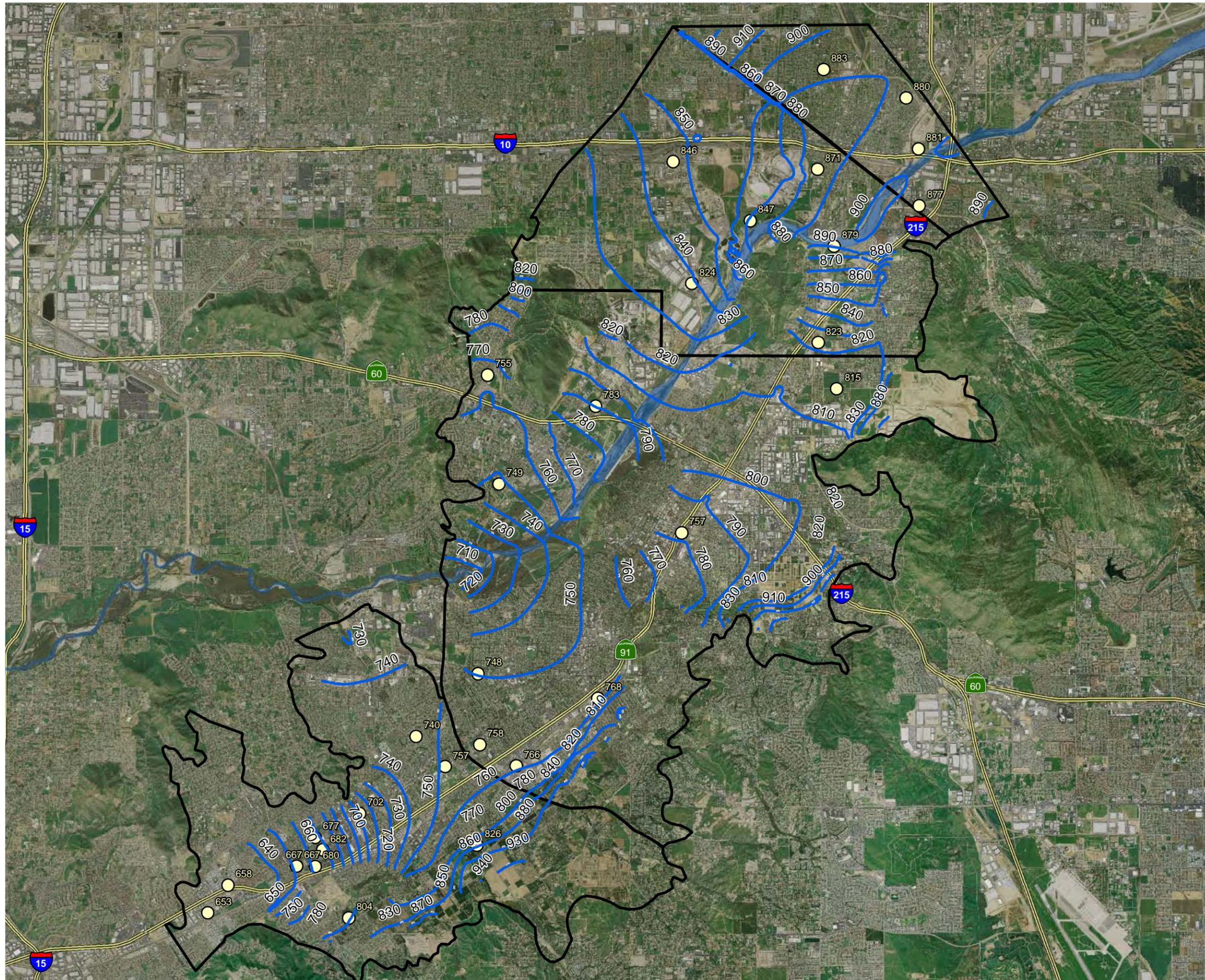
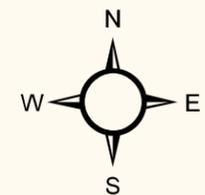
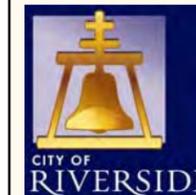
-  Highway
-  Santa Ana River
-  Simulated Groundwater Elevation Contour
-  Observed Groundwater Elevation



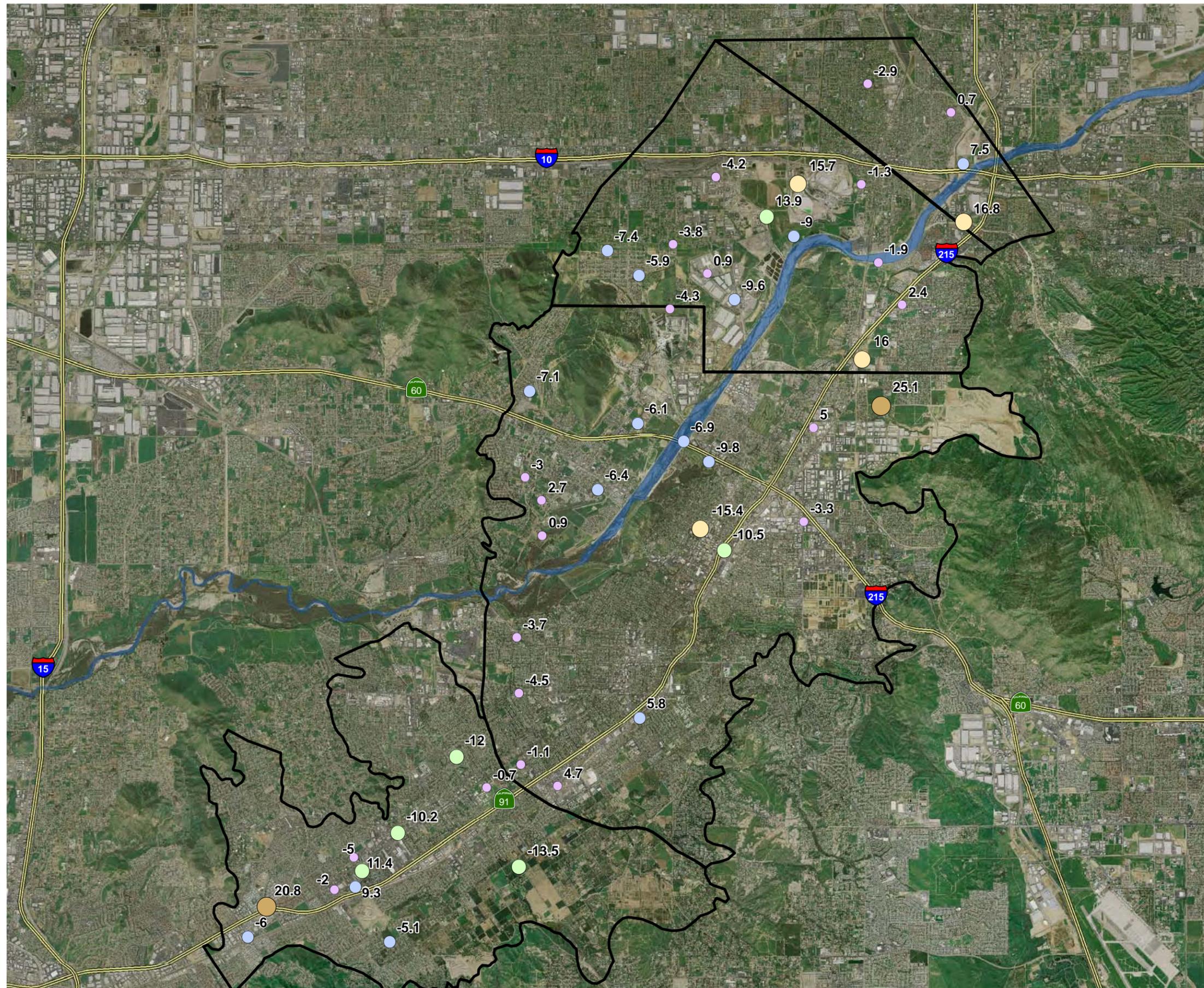
# Figure 31c Simulated and Observed Groundwater Elevations (2005 - Wet)

### Legend

-  Highway
-  Santa Ana River
-  Simulated Groundwater Elevation Contour
-  Observed Groundwater Elevation



# Figure 32 Mean Residuals

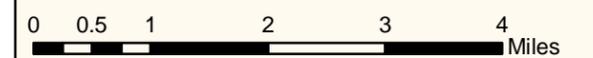
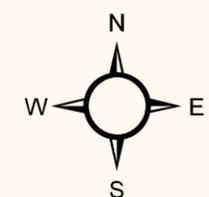
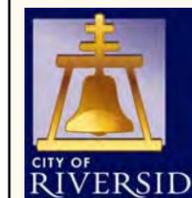


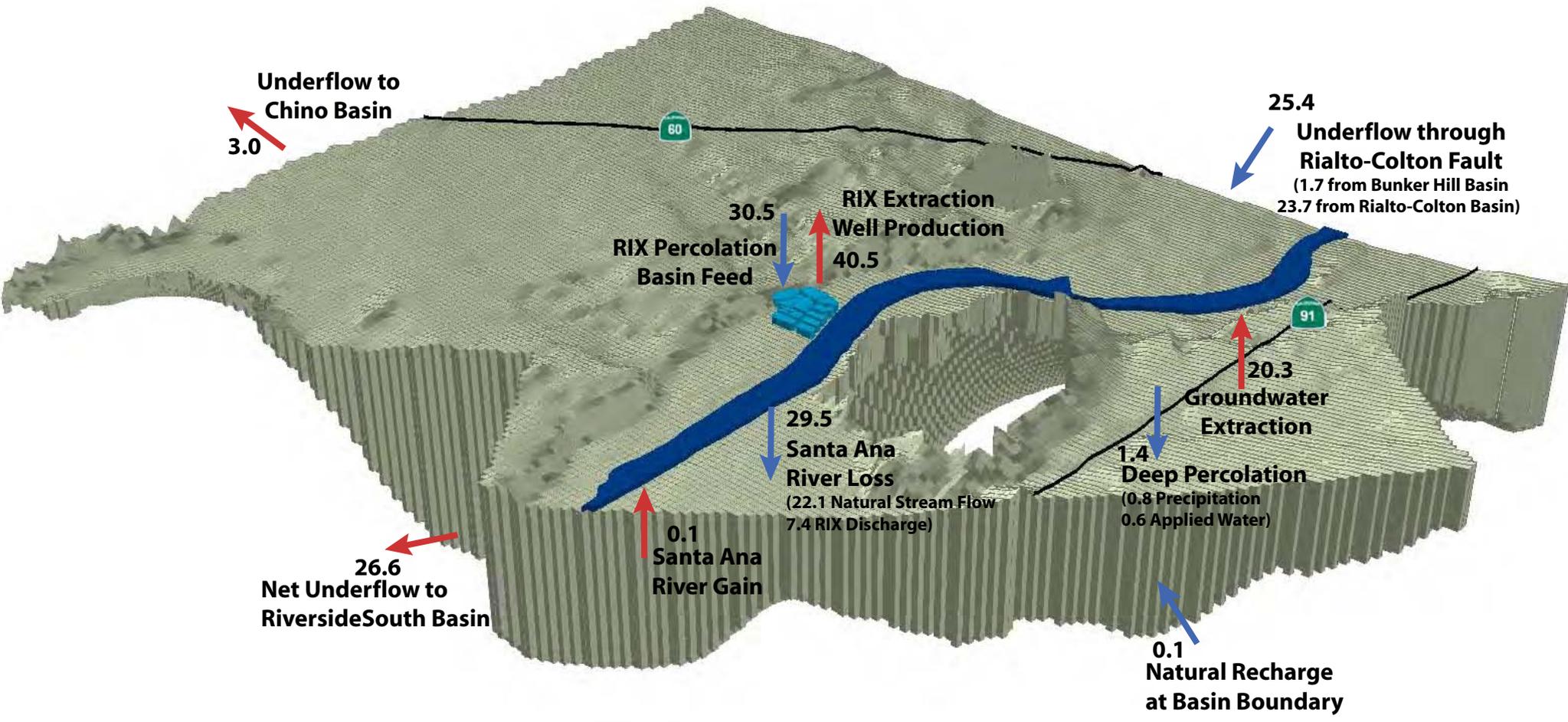
### Legend

- Highway
- Model Boundary
- Santa Ana River

### Mean Residuals at Calibration Wells (feet)

- ± (0 - 5)
- ± (5 - 10)
- ± (10 - 15)
- ± (15 - 20)
- ± (> 20)





Change in Ground Water Storage = -3.7

Units in TAF/yr

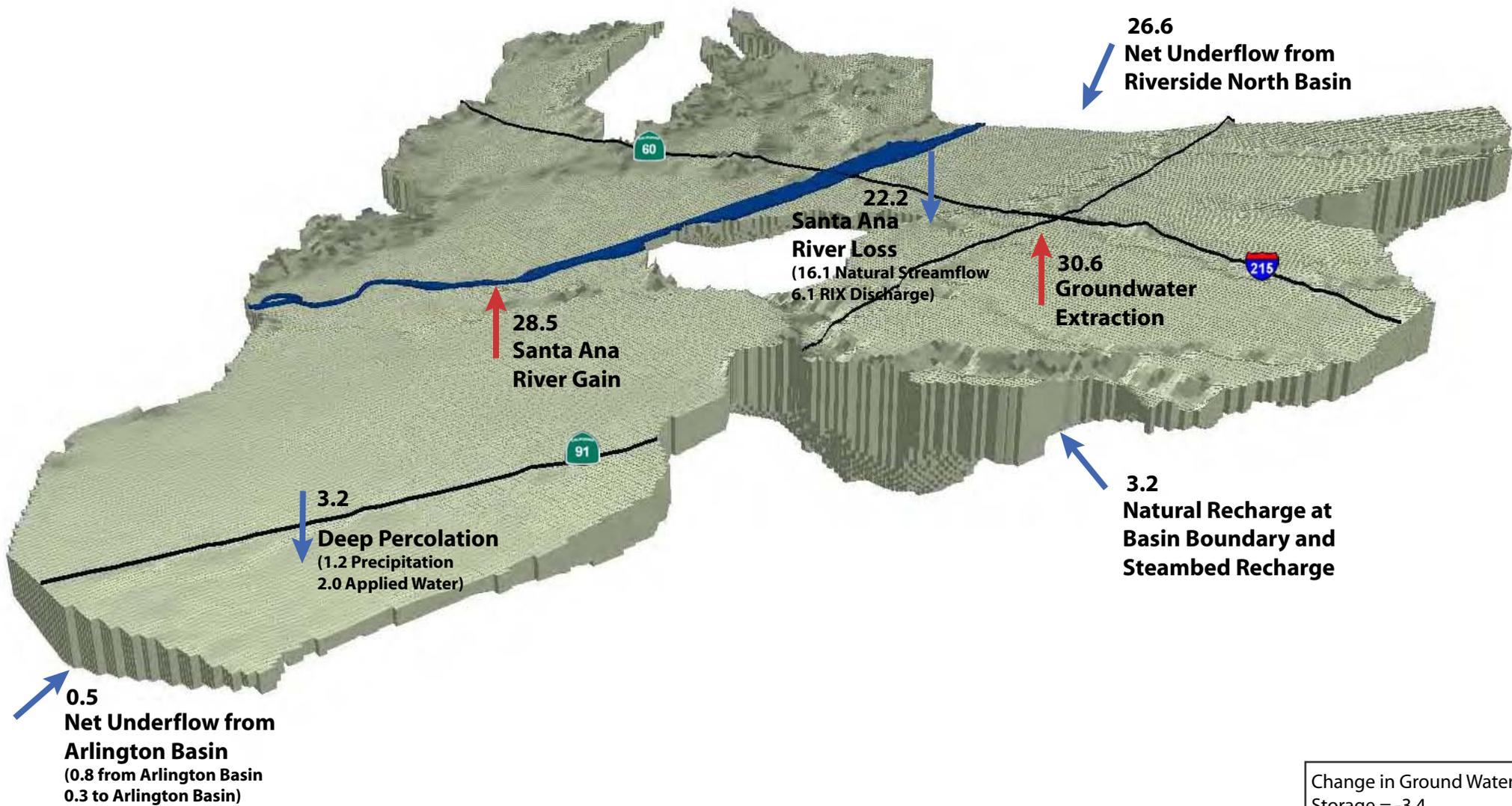
Groundwater Budget for Riverside North Basin\*  
(1996-2007 Average Conditions)

Figure 33  
May 2010



\* RIX and WMWD Desalters are active from 1996 to 2007.





Change in Ground Water Storage = -3.4

Units in TAF/yr

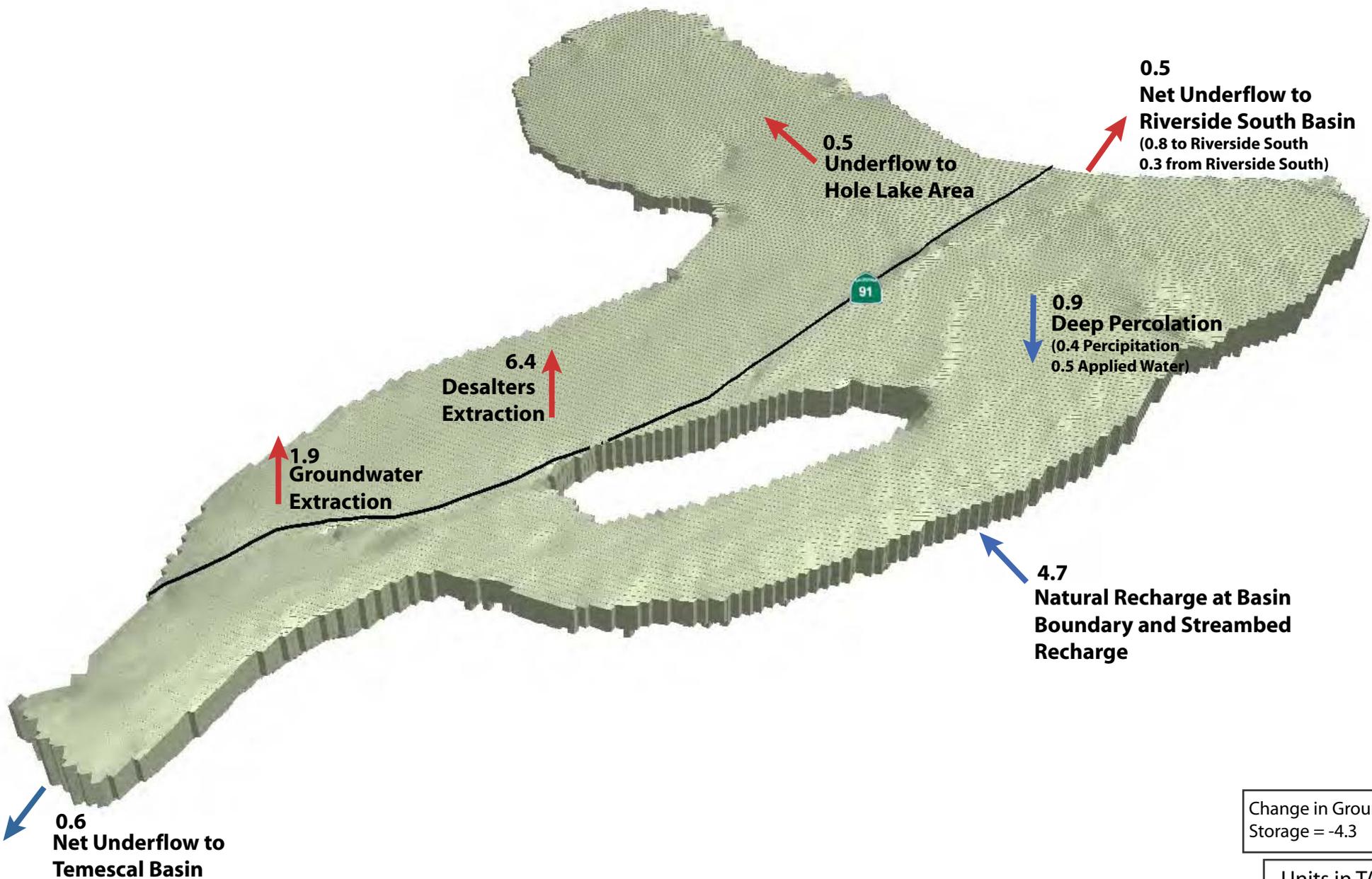
**Groundwater Budget for Riverside South Basin**  
(1996-2007 Hydrologic Conditions)

**Figure 34**  
May 2010



\*RIX and WMWD Desalters are active from 1996 to 2007.





Change in Ground Water Storage = -4.3

Units in TAF/yr

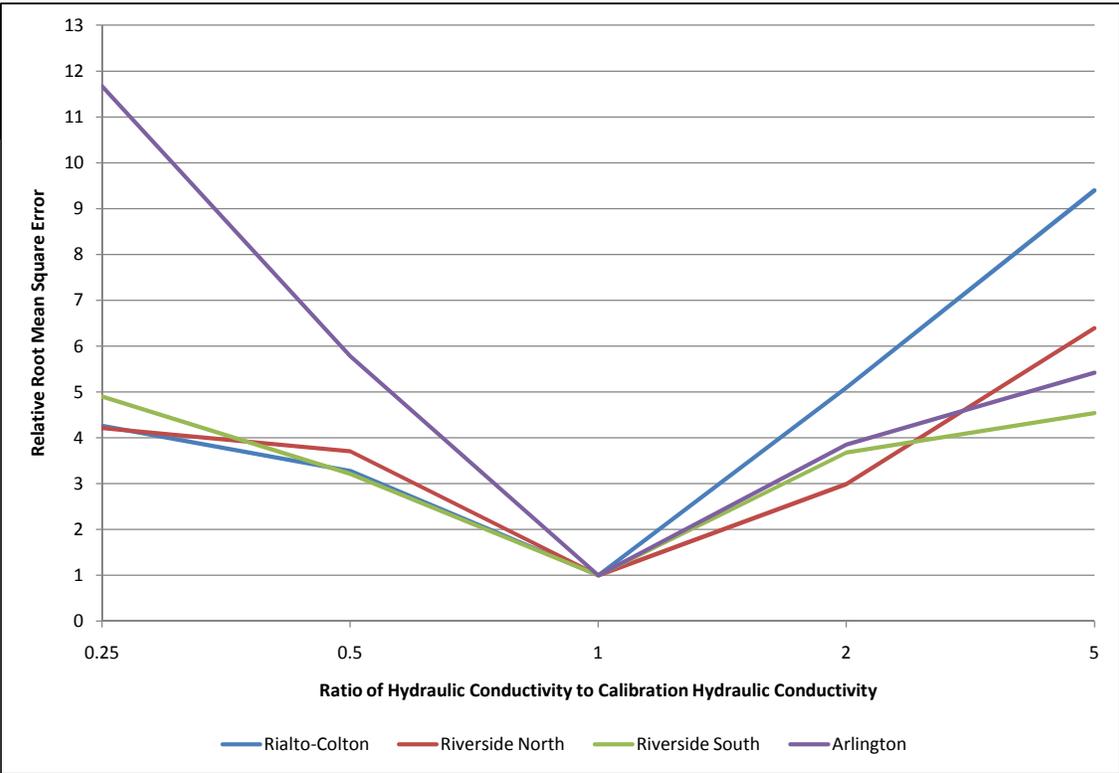
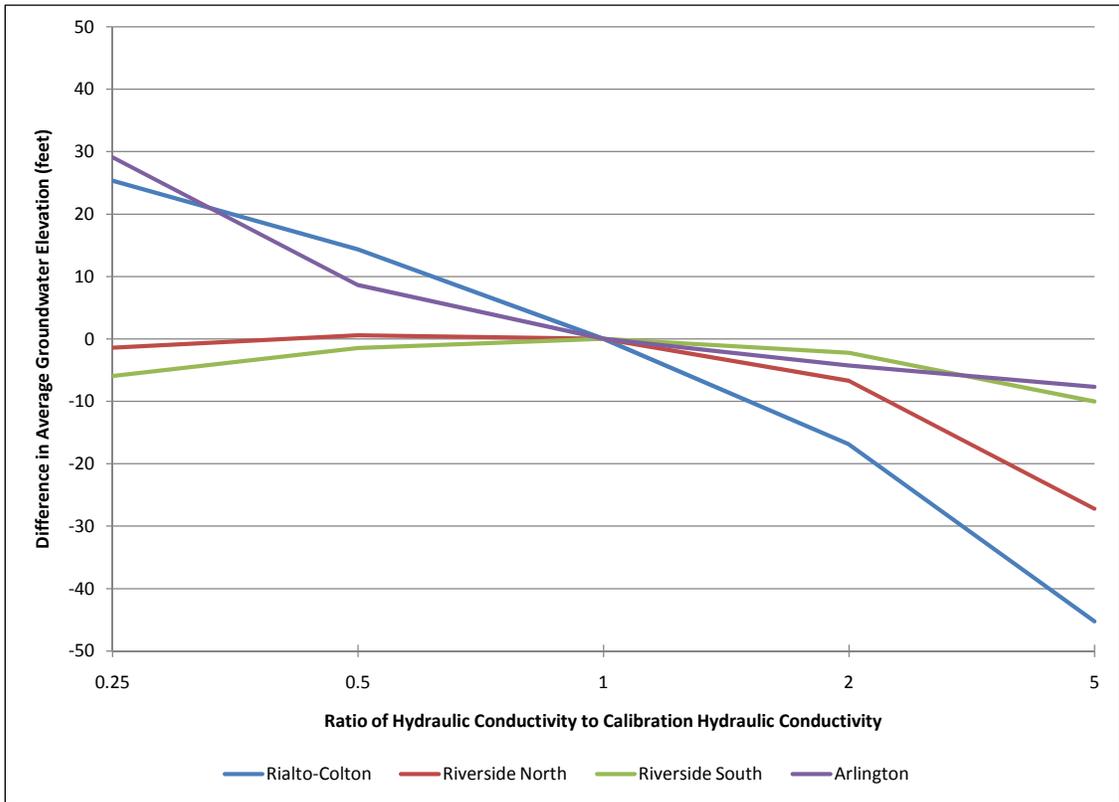


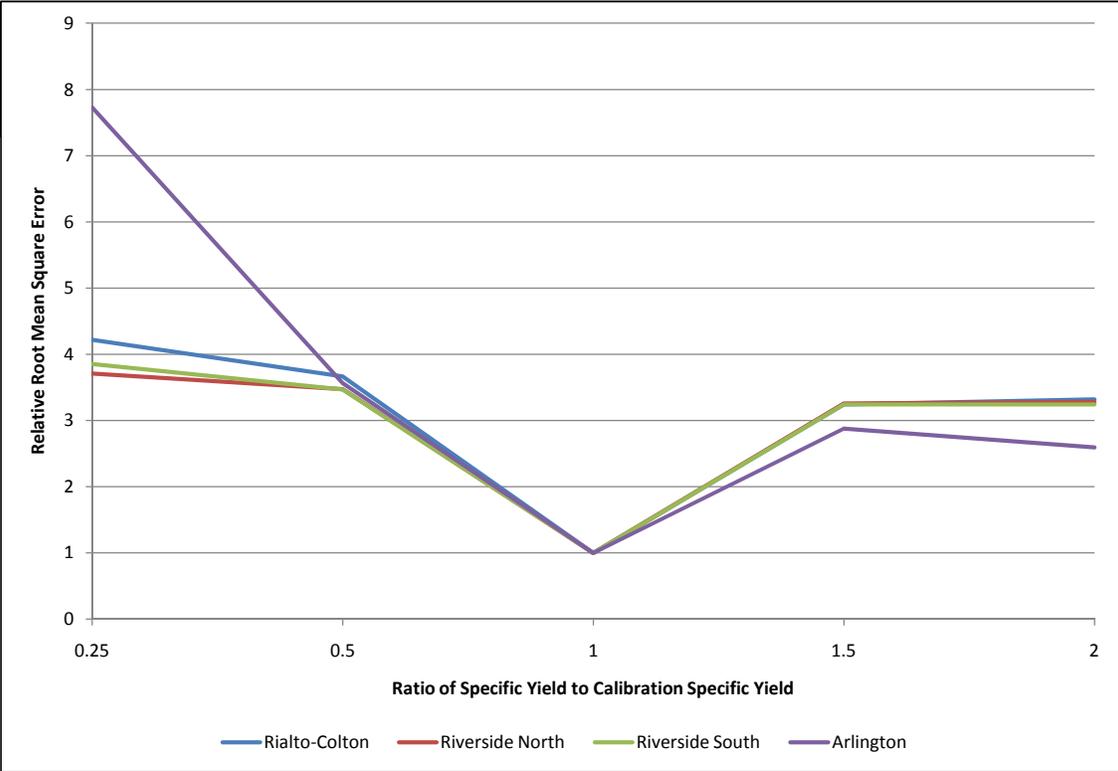
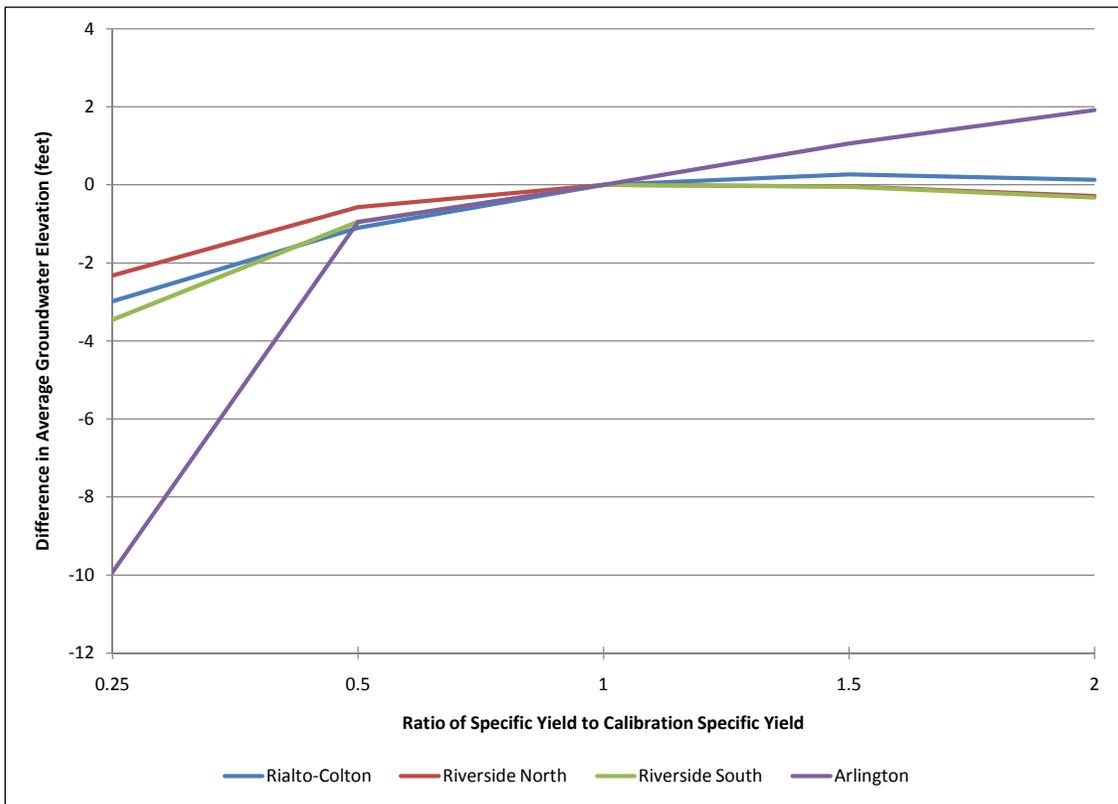
**Groundwater Budget for Arlington Basin\***  
(1996-2007 Hydrologic Conditions)

**Figure 35**  
May 2010

\*RIX and WMWD Desalters are active from 1996 to 2007.



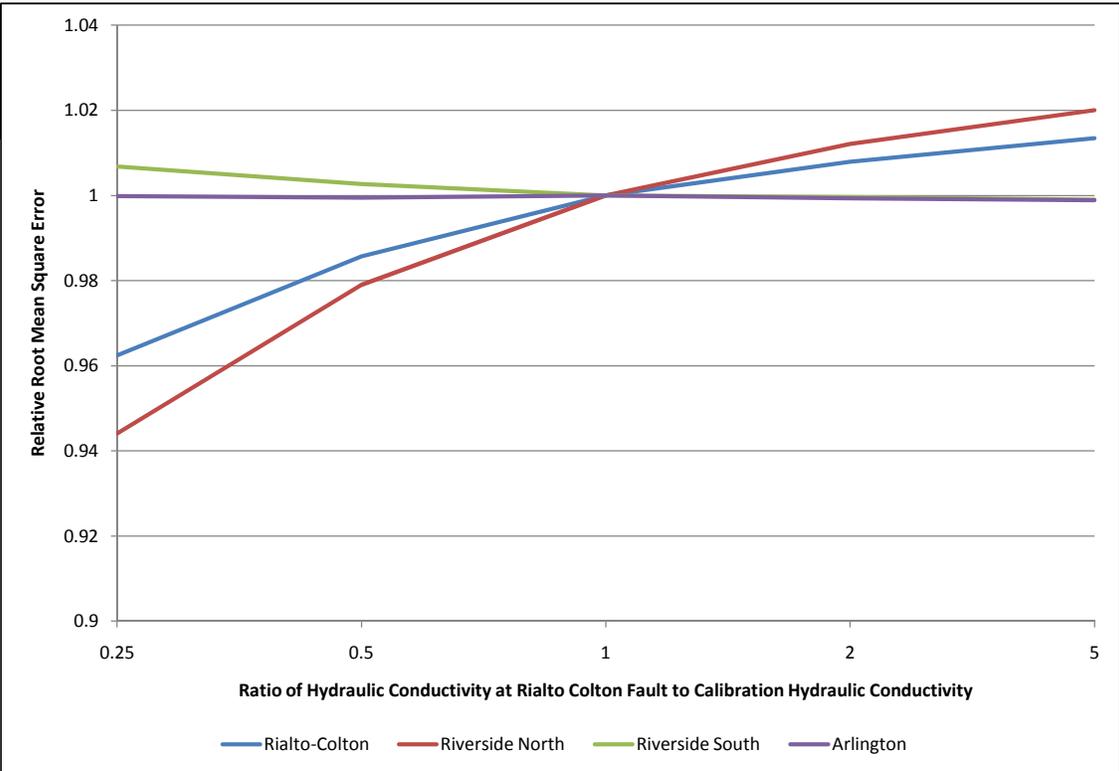
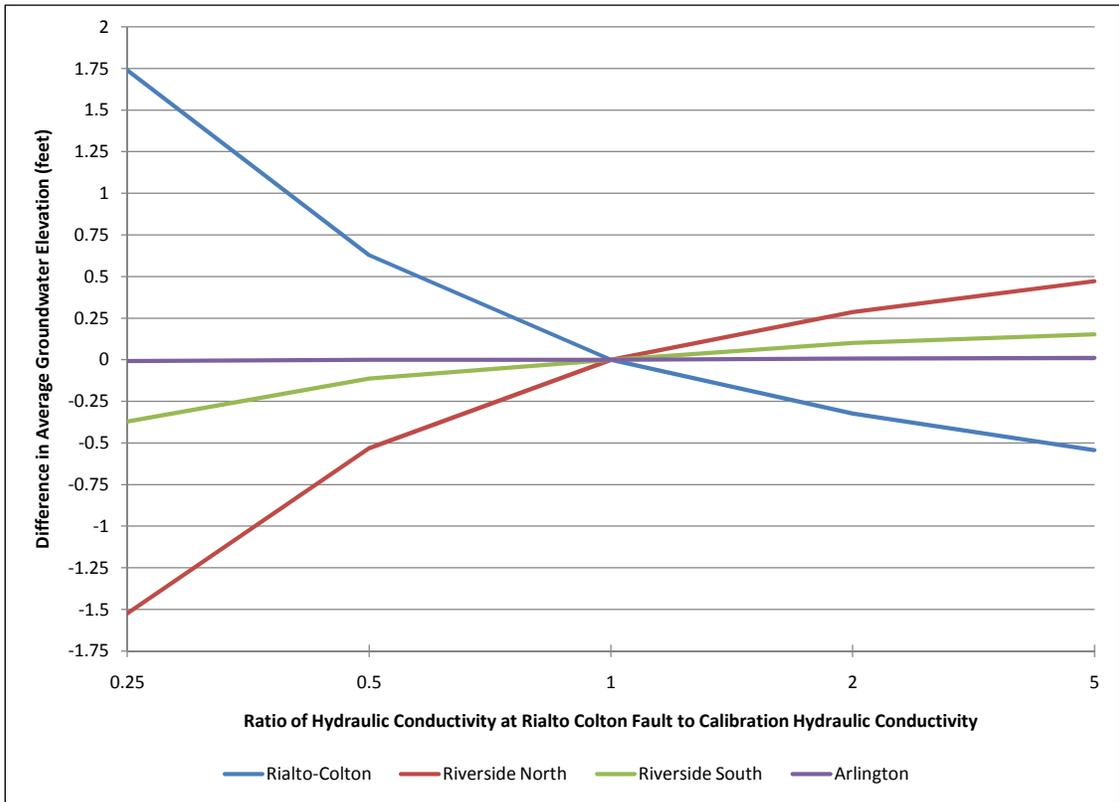




### Sensitivity to Specific Yield

Figure 37  
April 2010

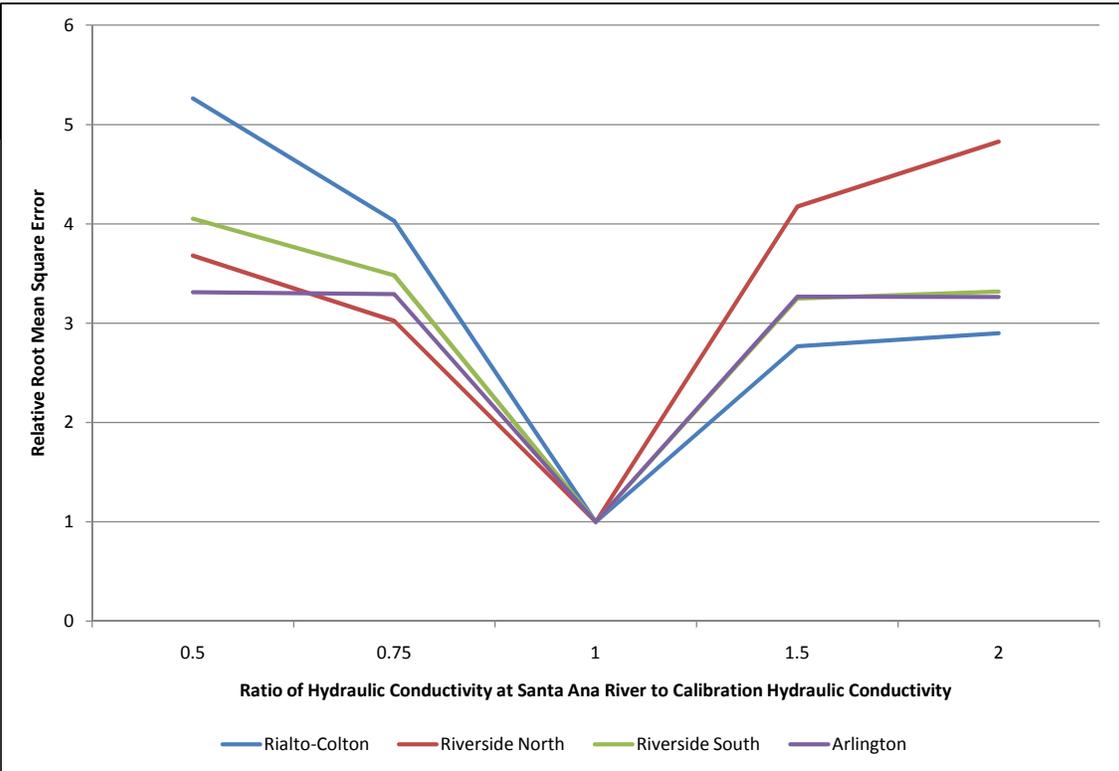
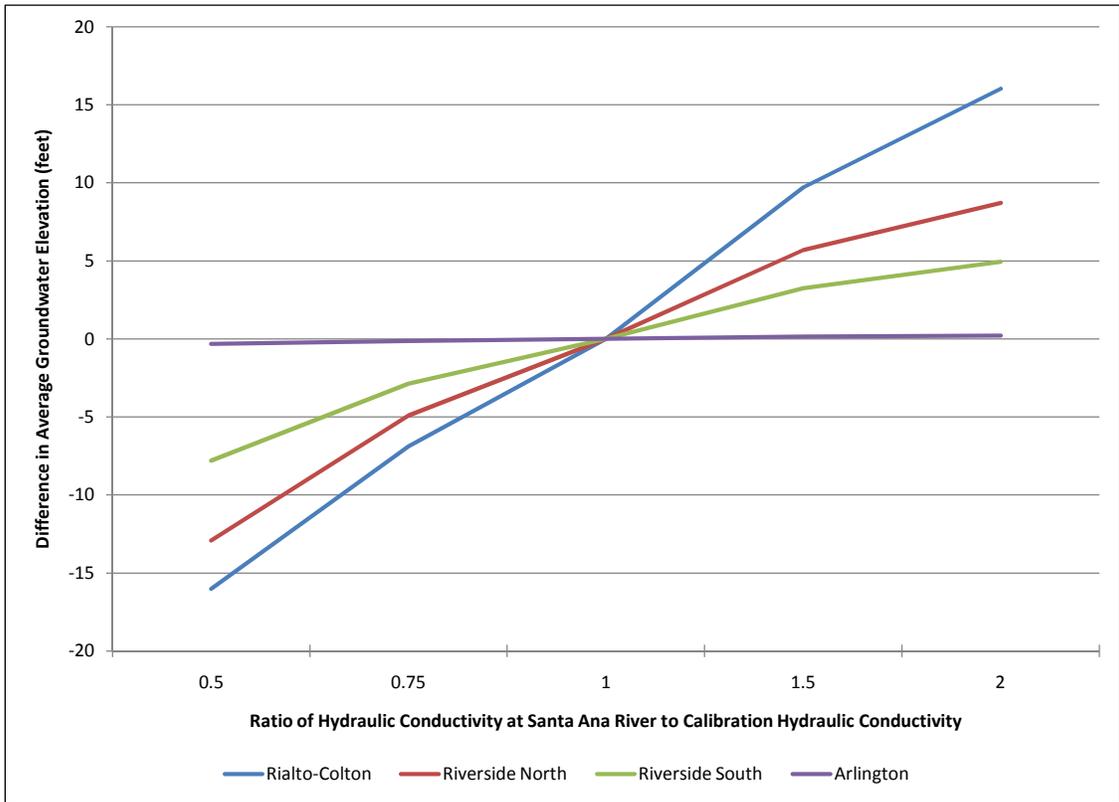




### Sensitivity to Hydraulic Conductivity at Rialto-Colton Fault

Figure 38  
April 2010

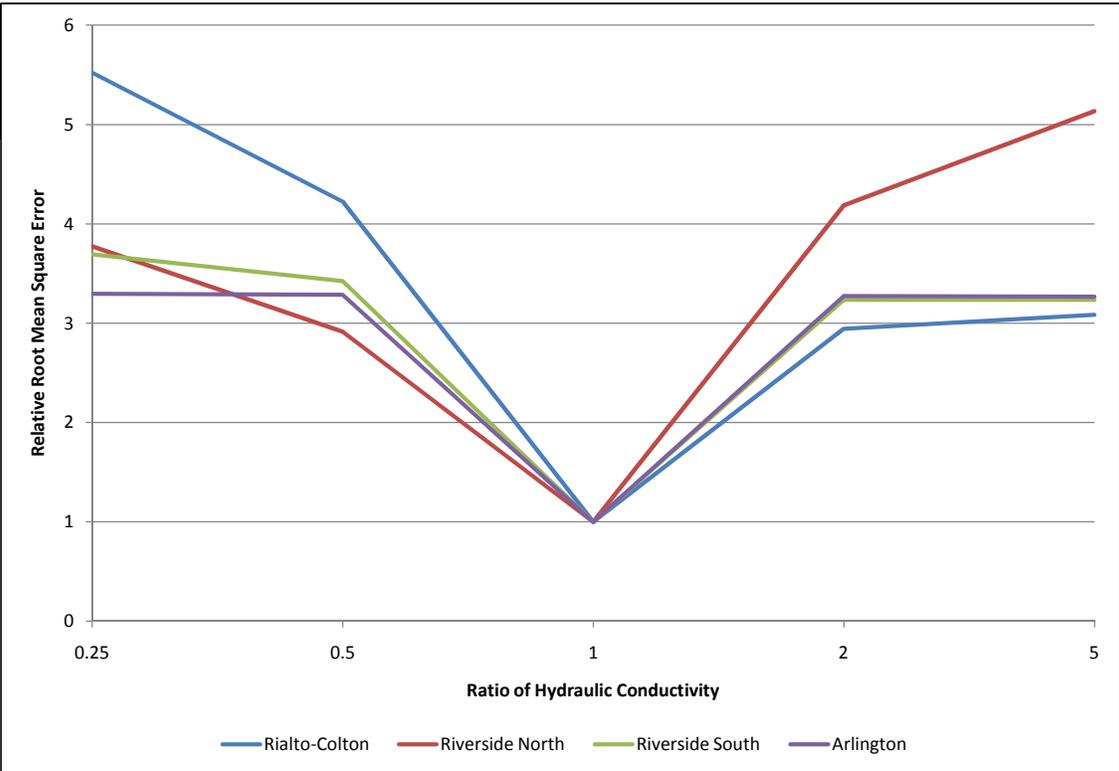
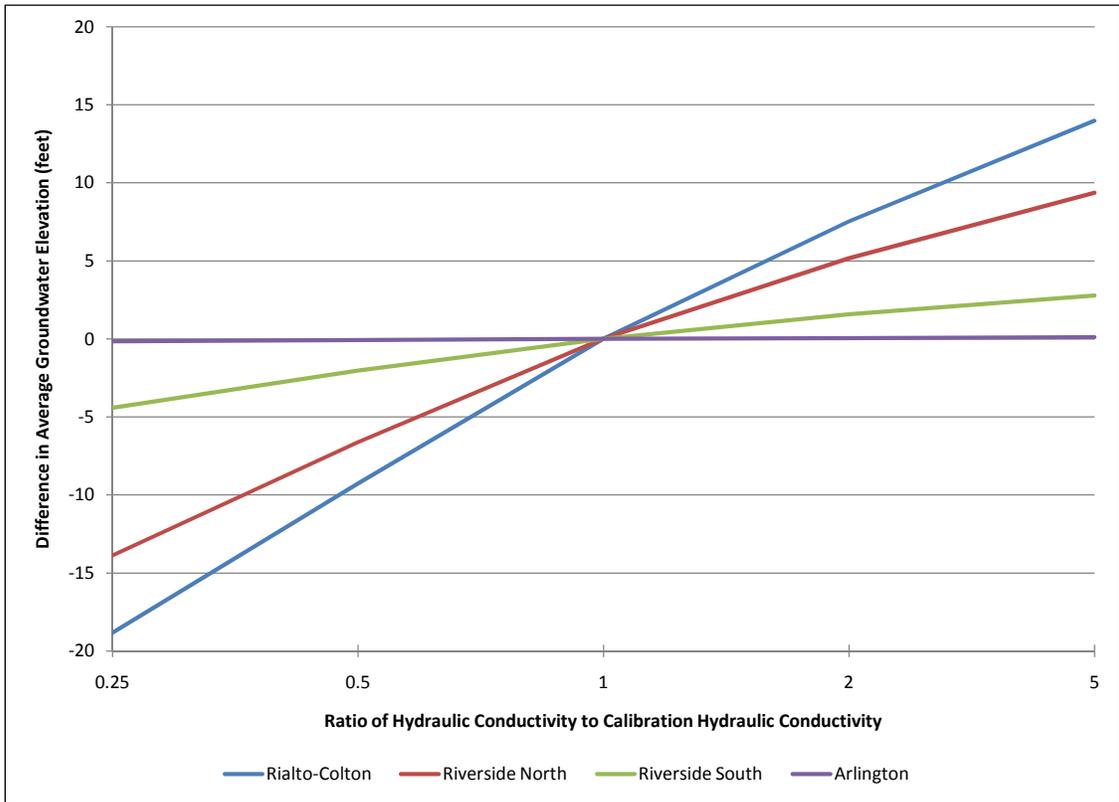




### Sensitivity to Streambed Hydraulic Conductivity of Santa Ana River

Figure 39  
April 2010





Sensitivity to Hydraulic Conductivity at the Model Boundary with the Rialto Basin

Figure 40  
April 2010



**Wastewater Import to RIX = 35.5**  
(28.1 to Percolation Basins & 7.4 to Dyna Sand Filter)

**RIX Discharge to Santa Ana River = 43.2**  
(35.8 from Extraction Wells & 7.4 from Dyna Sand Filter)  
**Rialto WWTP Discharge to Santa Ana River = 7.8**

**Santa Ana River 1965-07**  
**Average Annual Streamflow = 59.1**  
(Measured at USGS gages at Lytle Cr, Warm Cr, and E Street)  
(Note: San Bernardino WWTP discharge to the Santa Ana River above E Street gage is not included)

**Underflow to Chino Basin**  
**2.8**

**Underflow through Rialto-Colton Fault**  
(2.7 from Bunker Hill Basin  
25.6 from Rialto-Colton Basin)  
**28.3**

**1.4 Deep Percolation**  
(0.9 Precipitation  
0.5 Applied Water)

**RIX Percolation Basin Feed**  
**28.1**

**RIX Extraction Well Production**  
**35.8**

**27.0 Santa Ana River Loss**  
(21.7 Natural Streamflow  
5.3 RIX Impact)

**Groundwater Extraction**  
**28.3**

**19.1 Net Underflow to Riverside South Basin**

**0.0 Santa Ana River Gain**

**0.1 Natural Recharge at Basin Boundary**

Change in Ground Water Storage = -1.1

Units in TAF/yr

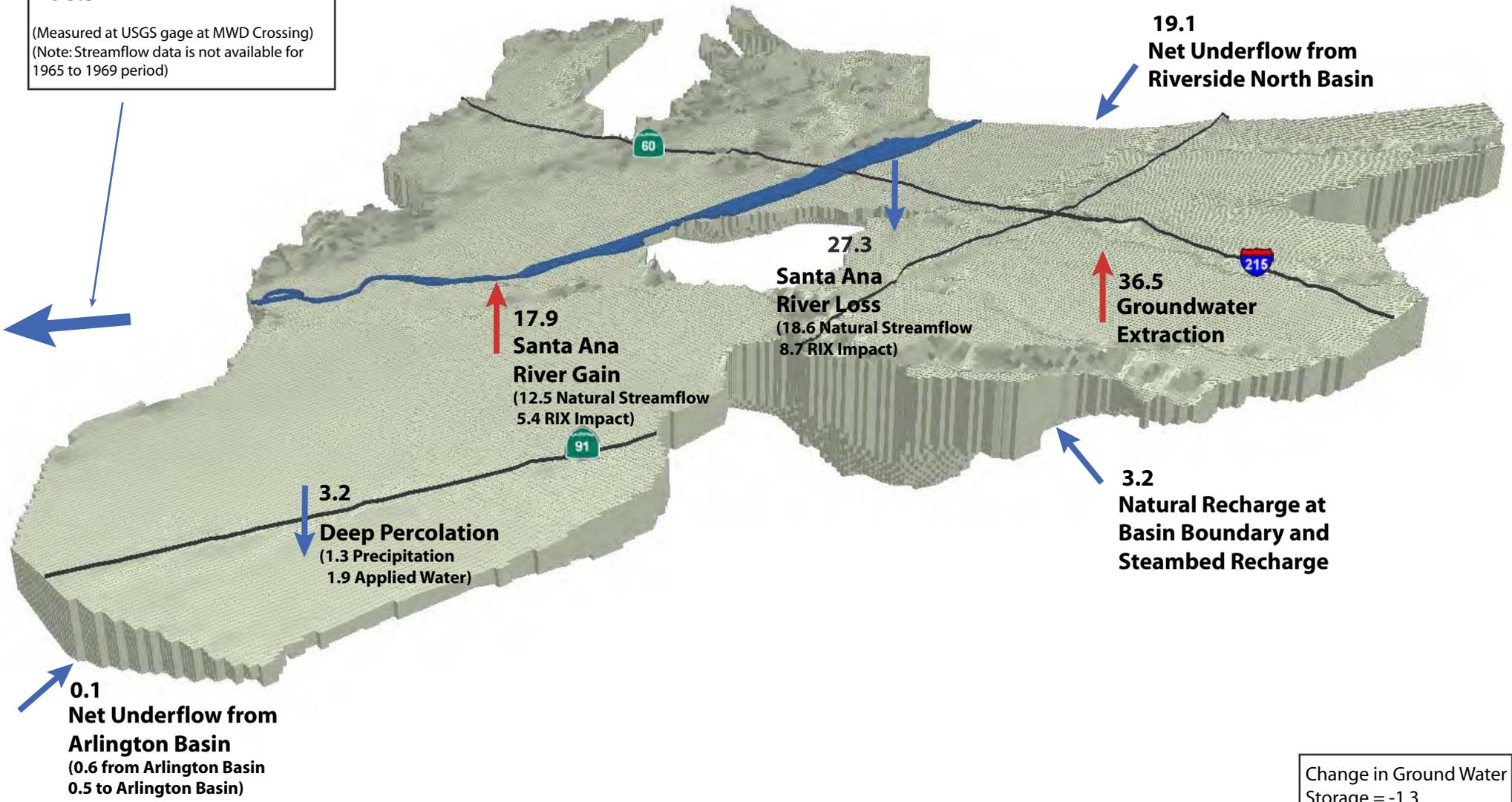
**Groundwater Budget for Riverside North Basin**  
**Existing Conditions Baseline**  
(Average Hydrologic Conditions, 1965-2007)

**Figure 41**  
November 2010



**Santa Ana River 1970-07**  
**Average Annual Streamflow**  
**= 98.5**

(Measured at USGS gage at MWD Crossing)  
 (Note: Streamflow data is not available for  
 1965 to 1969 period)



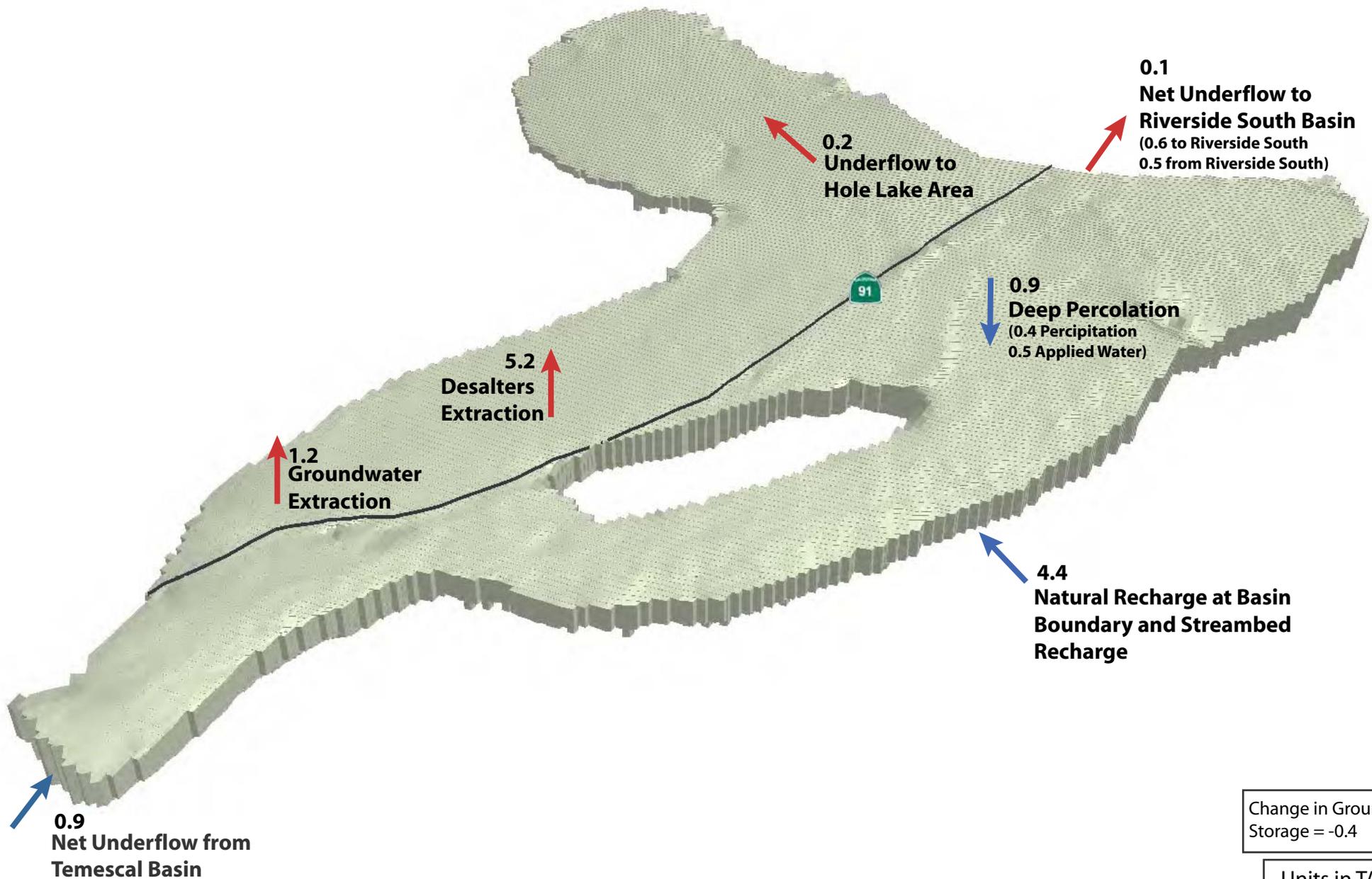
Change in Ground Water Storage = -1.3

Units in TAF/yr

**Groundwater Budget for Riverside South Basin**  
**Existing Conditions Baseline**  
 (Average Hydrologic Conditions, 1965-2007)

**Figure 42**  
 November 2010

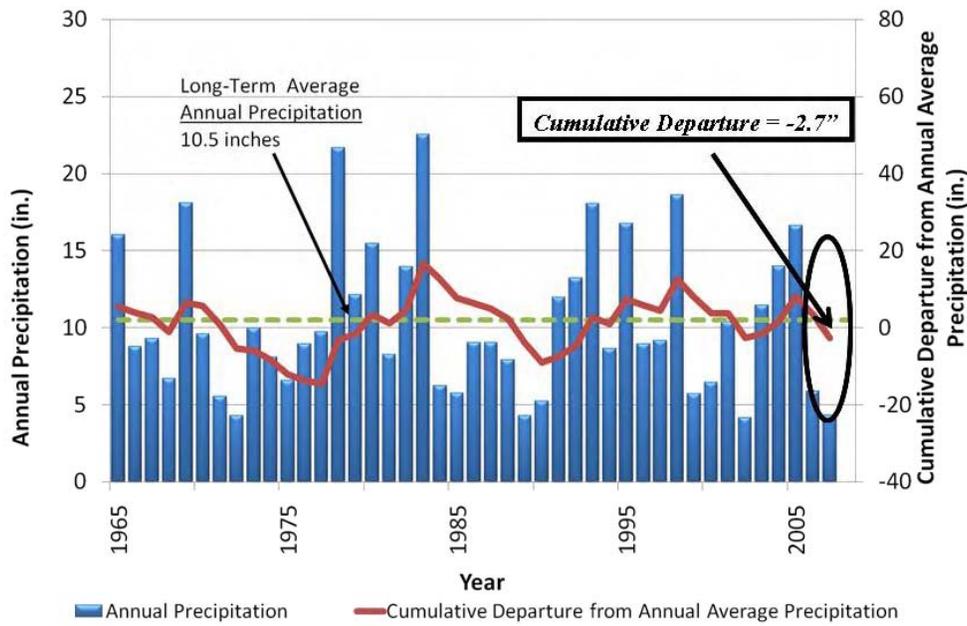




Groundwater Budget for Arlington Basin  
Existing Conditions Baseline  
(Average Hydrologic Conditions, 1965-2007)

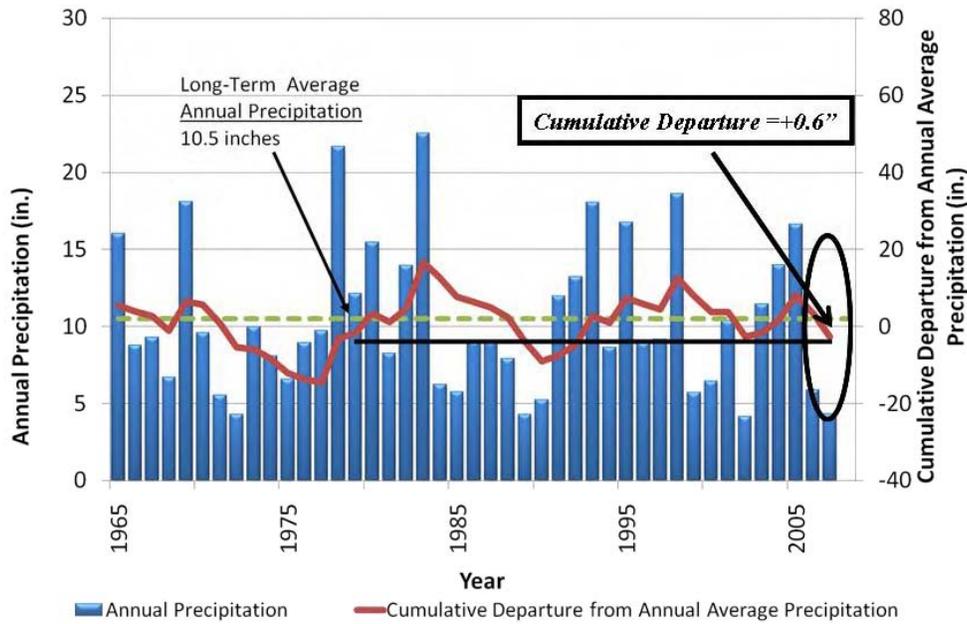
Figure 43  
November 2010





Data Source: Riverside County Flood Control and Water Conservation District, 2009

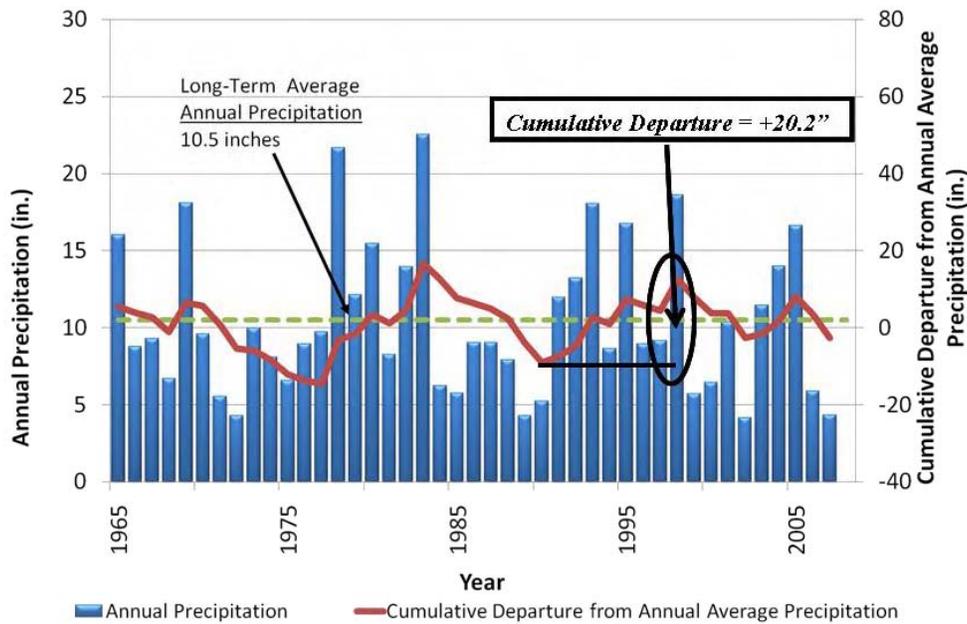
(a) Long-term Normal (1965-2007)



Data Source: Riverside County Flood Control and Water Conservation District, 2009

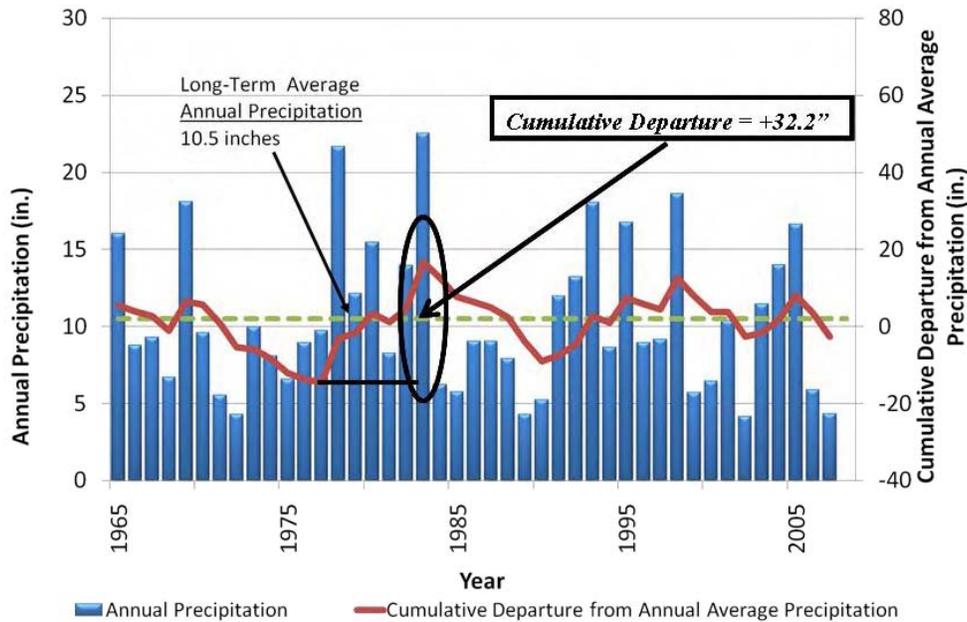
(b) Short-term Normal (1979-2007)

Figure 44 - Selected Hydrological Conditions



Data Source: Riverside County Flood Control and Water Conservation District, 2009

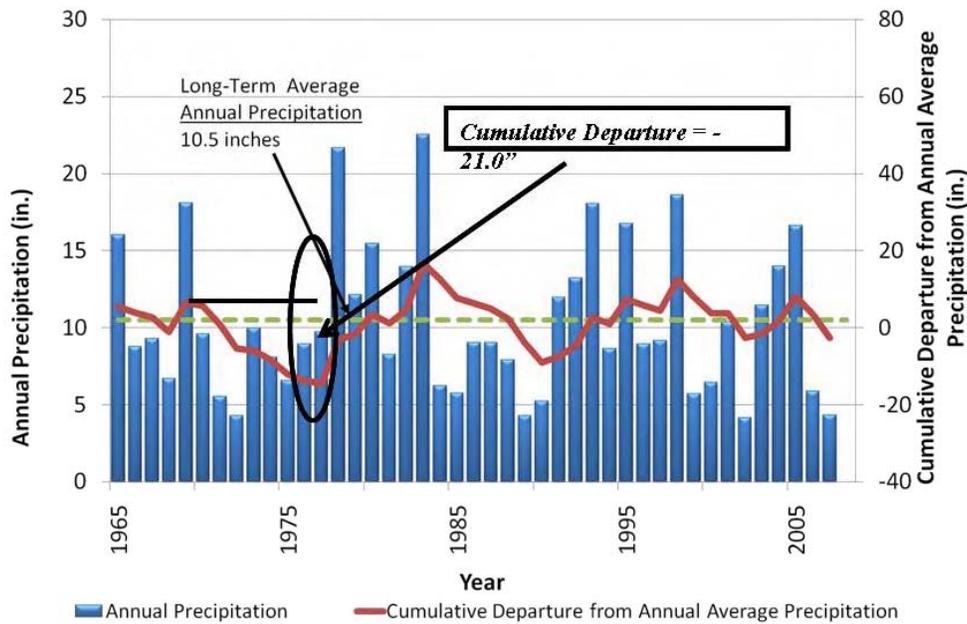
**(c) Long-term Wet (1991-1998)**



Data Source: Riverside County Flood Control and Water Conservation District, 2009

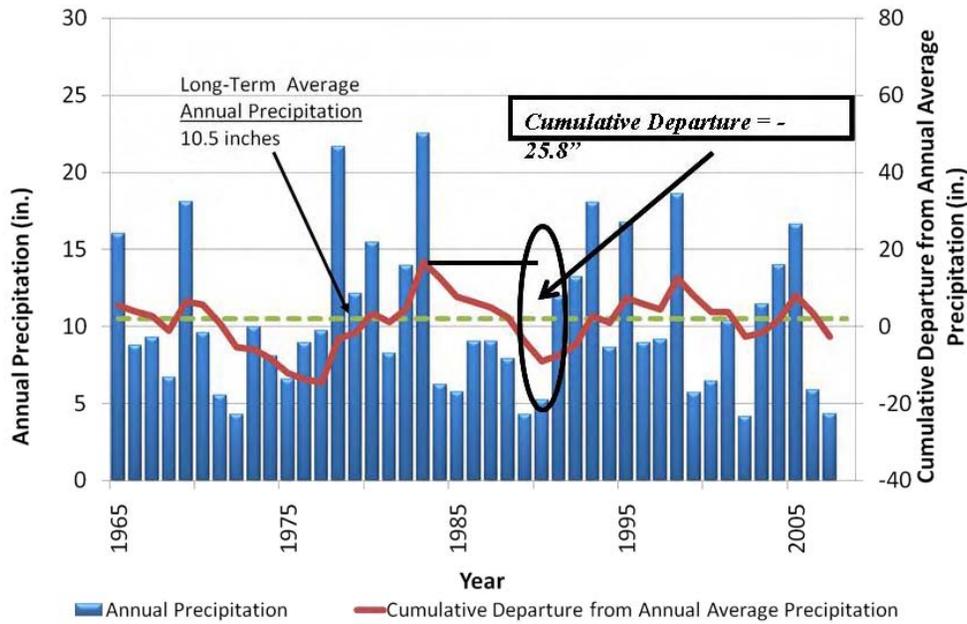
**(d) Short-term Wet (1978-1983)**

**Figure 44 - Selected Hydrological Conditions (continued)**



Data Source: Riverside County Flood Control and Water Conservation District, 2009

(e) Long-term Dry (1970-1977)



Data Source: Riverside County Flood Control and Water Conservation District, 2009

(f) Short-term Dry (1984-1990)

Figure 44 - Selected Hydrological Conditions (continued)