

# PRODUCTION AND SALES REPORT FOR 2006-2007



10/24/2007

Kinneloa Irrigation District

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# Production and sales report for 2006-2007

## SUMMARY OF PRODUCTION SOURCES, CUSTOMER SALES, RAINFALL, POWER COSTS AND LONG TERM STORAGE FOR THE WATERMASTER YEAR OF 2006-2007

### Production

The Kinneloa Irrigation District (KID) produced from our wells and tunnels an all-time record of 1229 acre-feet during this period as shown in Figure 1. This amount included 322 acre-feet produced for and sold to the City of Pasadena. Water produced for our retail customers was 907 acre-feet as compared to the previous record year of 1999-2000 in which 904 acre-feet were produced.

Figure 1 includes data for all production sources from 1994-1995 through 2006-2007 as well as for surface water and ground water which is diverted from our system for which we receive a spreading credit. Figure 2 shows a graphical representation of water produced for customers during this thirteen-year time period. Figure 3 shows total production from the KID wells and tunnels. This year our wells produced approximately three times the water as obtained from the tunnels as compared to approximately equal production in the previous two years. This is an indication that the current drought has significantly reduced the tunnel production. Figure 4 is a pie chart showing the percentage of total production by source.

### Sales

Total sales to retail customers were 847 acre-feet as shown in Figure 5. The distribution of sales during the year is shown in Figure 6. Peak sales are usually in the July through September period and minimum sales usually occur in December through February period. Weather conditions in a particular year can cause these periods to shift. Also it should be noted that 20 new homes were completed this year and were undoubtedly a significant factor when coupled with the drought for record water sales this year. The KID promoted conservation measures and asked for a voluntary 10% reduction, but it is too early to know whether or not there was any affect on consumption. Since very few additional houses are being built or remodeled, we would expect to see sales level off next year.

### Rainfall

Rainfall for 2006-2007 was 5.81 inches as shown in Figures 1 and 7. This amount is the average of measurements at four Los Angeles County stations in the Raymond Basin area. The range for these stations was 4.58 inches to 7.91 inches. Other stations in our immediate area recorded

amounts as low as 3.31 inches. This is the lowest amount in the thirteen years of history in this report and it appears that 2006-2007 was the driest year since recordkeeping was started in 1878. Sustained drought will affect the tunnel production in future years and may affect groundwater pumping availability and cost.

## Power Cost

Figure 8 shows the power cost per acre-foot of total production for 2006-2007 and for the previous nine years. Since most of our power consumption is for pumping, it is also an approximate indirect measure of production efficiency. However it should be noted that this indicator does not take into account the percentage of well production vs. tunnel production nor does it take into account rising electrical rates. In years of high tunnel production, less water is pumped from our wells saving us considerable power cost. General electrical rates have increased approximately 6-7% a year for the last ten years. However we have been able to mitigate a portion of this increase by participating in various "time-of-use" and interruptible power programs that restrict our use of power to non-peak hours in exchange for lower rates. We have also installed higher-efficiency motors when equipment has been replaced. The net effect has been to reduce our power cost increases over the past few years. The 2006-2007 cost was \$92 per acre-foot of total production which is a \$9 increase as compared to the previous year. This year was unusual in that we produced 322 acre-feet of water which was sold to the City of Pasadena. Although the water was sold at a profit, additional power was needed to pump the water from our K-3 well.

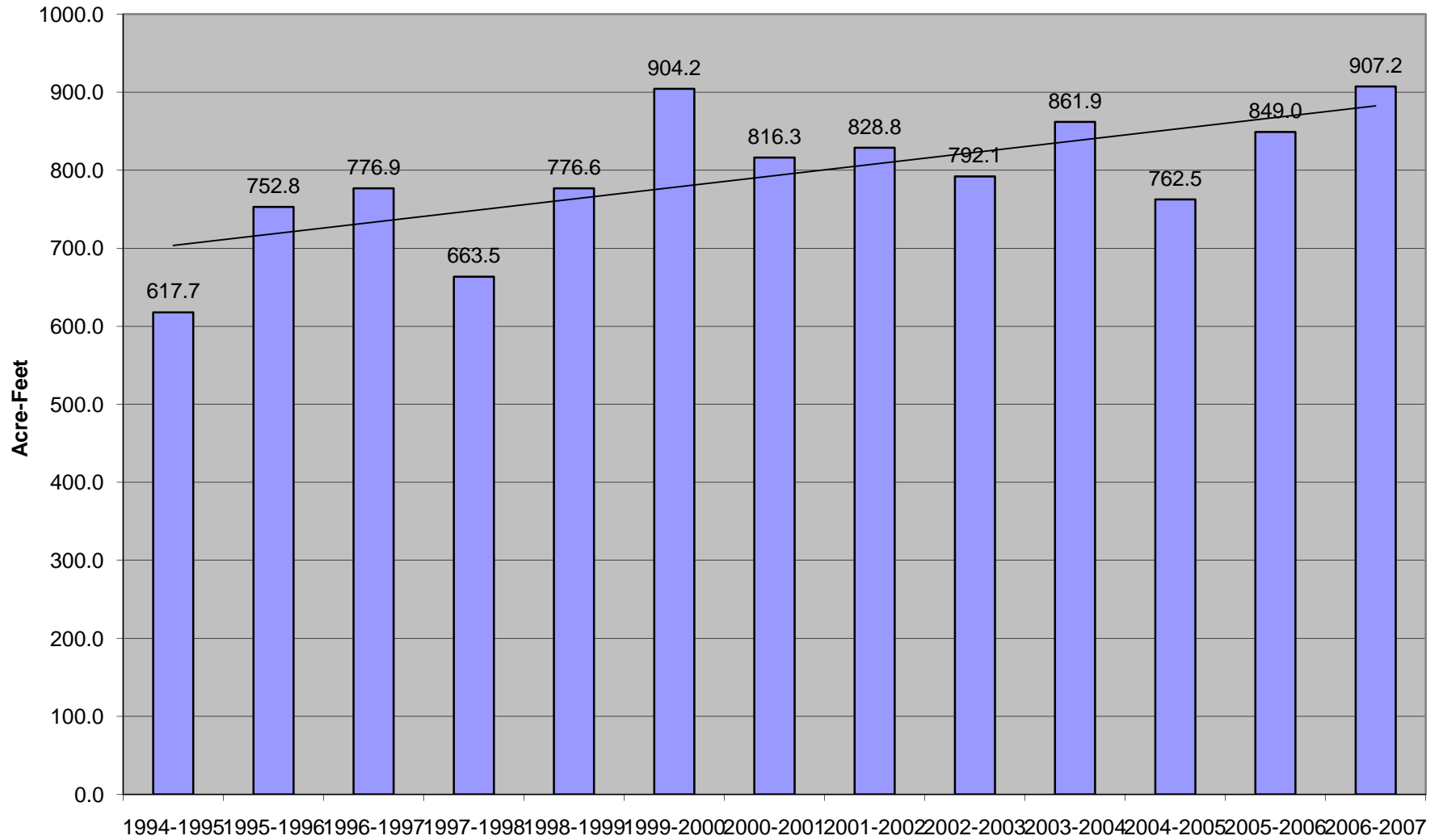
## Long Term Storage

The Raymond Basin Management Board has a long term storage program to cover situations such as prolonged drought or unusually high demand that might lead to over pumping of our water rights in the current year. This program is the equivalent of a savings account for surplus water. The KID activated our long term storage account for the first time in 2004-2005 by adding 326 acre-feet of surplus water as shown in Figure 1. The following year we added additional storage to bring the account to 848 acre-feet. Some of this storage was used in 2006-2007 to support our water sales to the City of Pasadena. The remaining storage at the end of 2006-2007 was 729 acre-feet. The current operational goal of KID management is to maintain at least 516 acre-feet of storage which is the equivalent of one year of adjudicated pumping rights. The maximum allowable storage is 1600 acre-feet or approximately three years of adjudicated pumping rights. In general, we are able to add to long term storage when there is a series of normal or heavy rainfall years when tunnel production is higher than average. Conservation efforts by our customers will also facilitate the transfer of unused water to the storage account.

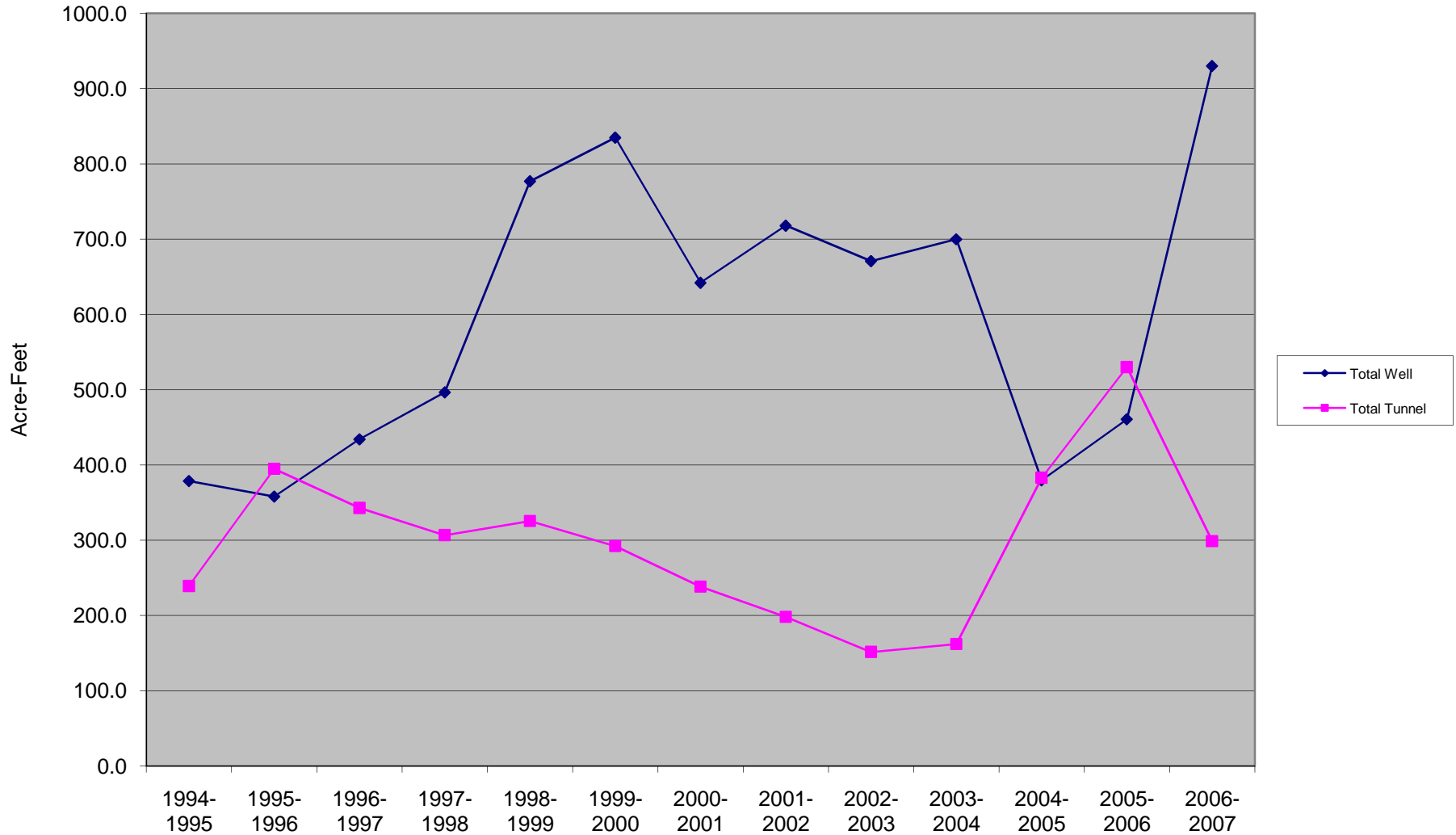
**Table 1 -- Production Report for Watermaster Year 1994-1995 through 2006-2007**

<b>Production in Acre-Feet</b>		<b>(July through June)</b>											
<b>Source</b>	<b>1994-1995</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>
Wilcox Well	93.2	119.6	170.2	165.4	209.6	272.4	216.9	203.7	213.7	148.9	60.2	37.2	70.2
K-3 Well	285.3	238.3	263.8	330.9	567.3	562.5	425.2	514.3	457.1	551.0	319.3	423.5	860.1
<b>Total Well</b>	<b>378.5</b>	<b>357.9</b>	<b>434.0</b>	<b>496.3</b>	<b>776.9</b>	<b>834.9</b>	<b>642.1</b>	<b>718.0</b>	<b>670.8</b>	<b>699.9</b>	<b>379.5</b>	<b>460.7</b>	<b>930.3</b>
Holly High/Low Tunnel	71.3	217.0	177.2	146.6	143.1	132.6	111.1	86.0	57.6	59.8	125.6	171.9	131.0
House Tunnel	37.8	43.9	35.4	33.1	41.1	31.5	26.2	21.5	16.7	12.7	12.6	44.9	26.5
Eucalyptus Tunnel	56.5	64.9	62.6	58.7	62.4	54.0	44.3	38.6	29.5	41.5	50.0	50.4	44.6
Delores Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	126.5	223.3	83.6
Far Mesa Tunnel	73.6	69.1	67.7	68.3	78.9	74.1	56.7	52.0	47.7	45.6	68.2	39.6	13.1
<b>Total Tunnel</b>	<b>239.2</b>	<b>394.9</b>	<b>342.9</b>	<b>306.7</b>	<b>325.5</b>	<b>292.2</b>	<b>238.3</b>	<b>198.1</b>	<b>151.5</b>	<b>162.0</b>	<b>382.9</b>	<b>530.1</b>	<b>298.8</b>
<b>Total Production</b>	<b>617.7</b>	<b>752.8</b>	<b>776.9</b>	<b>803.0</b>	<b>1102.4</b>	<b>1127.1</b>	<b>880.4</b>	<b>916.1</b>	<b>822.3</b>	<b>861.9</b>	<b>762.5</b>	<b>990.8</b>	<b>1229.0</b>
Deliveries from Pasadena	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5	0.0	0.0	18.8	0.0
Deliveries to Pasadena	0.0	0.0	0.0	-139.5	-325.8	-222.9	-64.1	-87.3	-61.7	0.0	0.0	-160.6	-321.8
<b>Net Import/Export</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-139.5</b>	<b>-325.8</b>	<b>-222.9</b>	<b>-64.1</b>	<b>-87.3</b>	<b>-30.2</b>	<b>0.0</b>	<b>0.0</b>	<b>-141.8</b>	<b>-321.8</b>
<b>Total Production for Retail Customers</b>	<b>617.7</b>	<b>752.8</b>	<b>776.9</b>	<b>663.5</b>	<b>776.6</b>	<b>904.2</b>	<b>816.3</b>	<b>828.8</b>	<b>792.1</b>	<b>861.9</b>	<b>762.5</b>	<b>849.0</b>	<b>907.2</b>
<b>Diversions in Acre-Feet</b>													
<b>Source</b>	<b>1994-1995</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>
Holly High/Low Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3	0.0	0.0	0.0	0.0
House Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	25.6	0.0	0.0
Kinneloa Canyon	140.7	50.2	54.3	56.8	48.6	52.1	33.4	28.9	12.2	9.5	31.2	40.4	45.4
Eucalyptus Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0
Brown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.9	16.7	0.0
<b>Eaton Wash Sub Total</b>	<b>140.7</b>	<b>50.2</b>	<b>54.3</b>	<b>56.8</b>	<b>48.6</b>	<b>52.1</b>	<b>33.4</b>	<b>28.9</b>	<b>38.0</b>	<b>9.5</b>	<b>81.7</b>	<b>57.2</b>	<b>45.4</b>
Delores Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.4	31.1	21.5	44.5	0.0	0.0
Long Tunnel	35.8	37.2	39.2	39.2	38.9	37.7	38.1	38.0	36.0	35.3	46.8	44.7	37.4
Far Mesa Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	0.0	30.2	42.5
Glen Wash	429.3	396.3	262.5	321.3	359.1	174.8	156.7	52.7	26.7	28.1	933.9	161.4	74.0
Tent Tunnel	5.1	5.5	5.4	5.3	5.8	3.4	2.4	2.3	2.1	2.0	3.2	3.5	2.9
<b>Pasadena Glen Sub Total</b>	<b>470.2</b>	<b>439.0</b>	<b>307.1</b>	<b>365.8</b>	<b>403.8</b>	<b>215.9</b>	<b>201.8</b>	<b>134.4</b>	<b>95.9</b>	<b>86.9</b>	<b>1028.5</b>	<b>239.8</b>	<b>156.7</b>
Sierra Madre Villa DB Outflow	-256.7	-32.8	-7.2	-33.7	0.0	0.0	0.0	0.0	0.0	0.0	-459.7	0.0	0.0
<b>Net Pasadena Glen Sub Total</b>	<b>213.5</b>	<b>406.2</b>	<b>299.9</b>	<b>332.1</b>	<b>403.8</b>	<b>215.9</b>	<b>201.8</b>	<b>134.4</b>	<b>95.9</b>	<b>86.9</b>	<b>568.8</b>	<b>239.8</b>	<b>156.7</b>
<b>Total Diverted</b>	<b>354.2</b>	<b>456.4</b>	<b>354.2</b>	<b>388.9</b>	<b>452.4</b>	<b>268.0</b>	<b>235.2</b>	<b>163.3</b>	<b>133.9</b>	<b>96.4</b>	<b>650.5</b>	<b>297.0</b>	<b>202.1</b>
<b>Other Data</b>													
<b>Source</b>	<b>1994-1995</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>
Rainfall (inches)	43.61	22.64	22.8	52.29	14.46	18.82	20.04	7.86	24.48	10.12	58.00	21.79	5.81
Water Sales to Customers (Acre-Feet)	584.3	668.8	679.9	600.4	666.3	782.9	710.9	739.1	717.7	772.6	672.6	785.8	847.3
Water Loss (Acre-Feet)	33.4	84.0	97.0	63.1	110.3	121.3	105.4	89.7	74.4	89.3	89.8	63.2	59.9
Water Loss (%)	5.4	11.2	12.5	9.5	14.2	13.4	12.9	10.8	9.4	10.4	11.8	7.4	6.6
RBMB Long Term Storage Account (Acre-Feet)											326.9	847.9	728.6
Power (\$)					86,488	97,064	77,780	111,676	111,062	100,410	87,537	82,476	112,924
Power (\$ per Acre-Foot of Total Production)					78	86	88	122	135	116	115	83	92

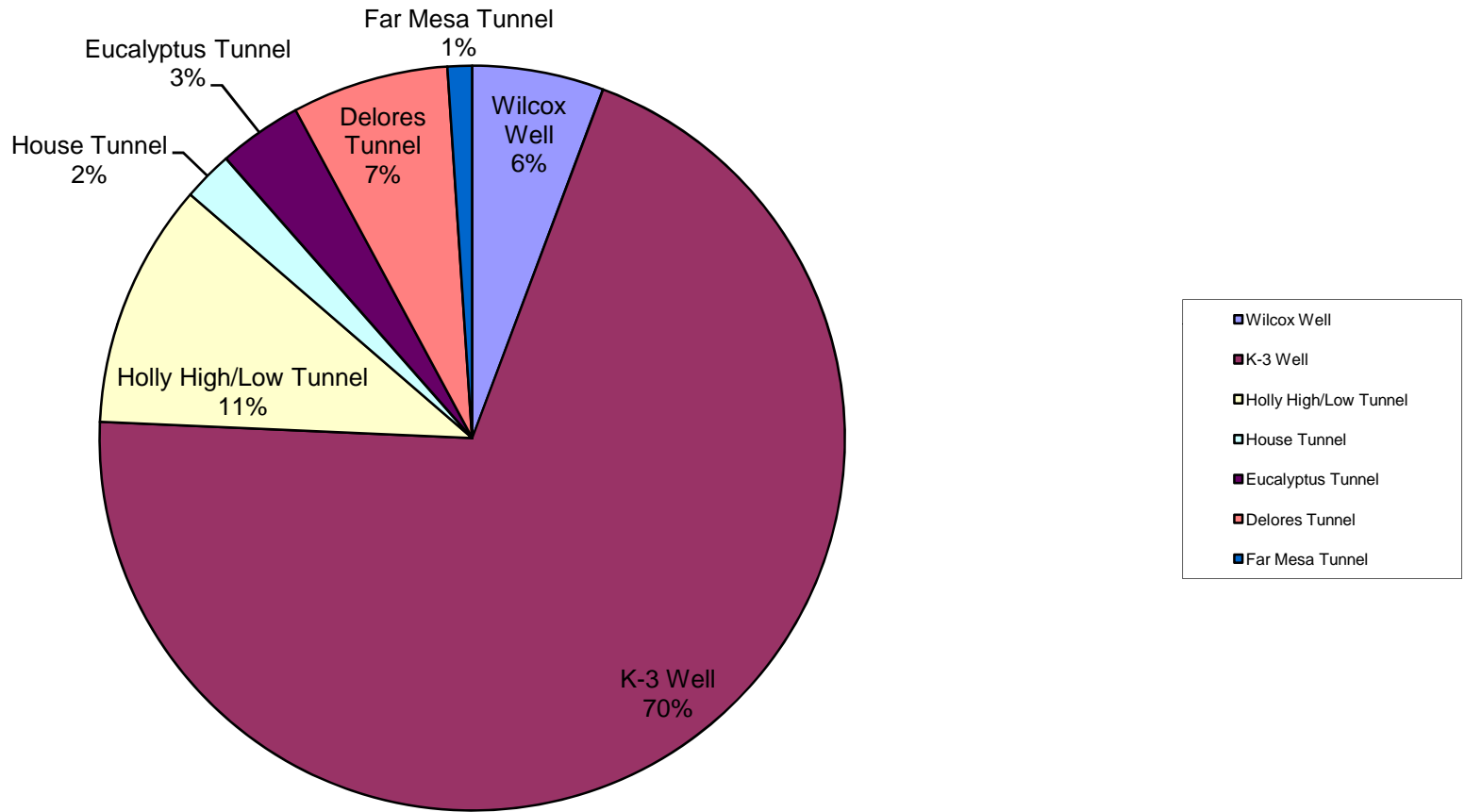
**Figure 1-- Total Production for Customers 1994-1995 through 2006-2007  
July through June**



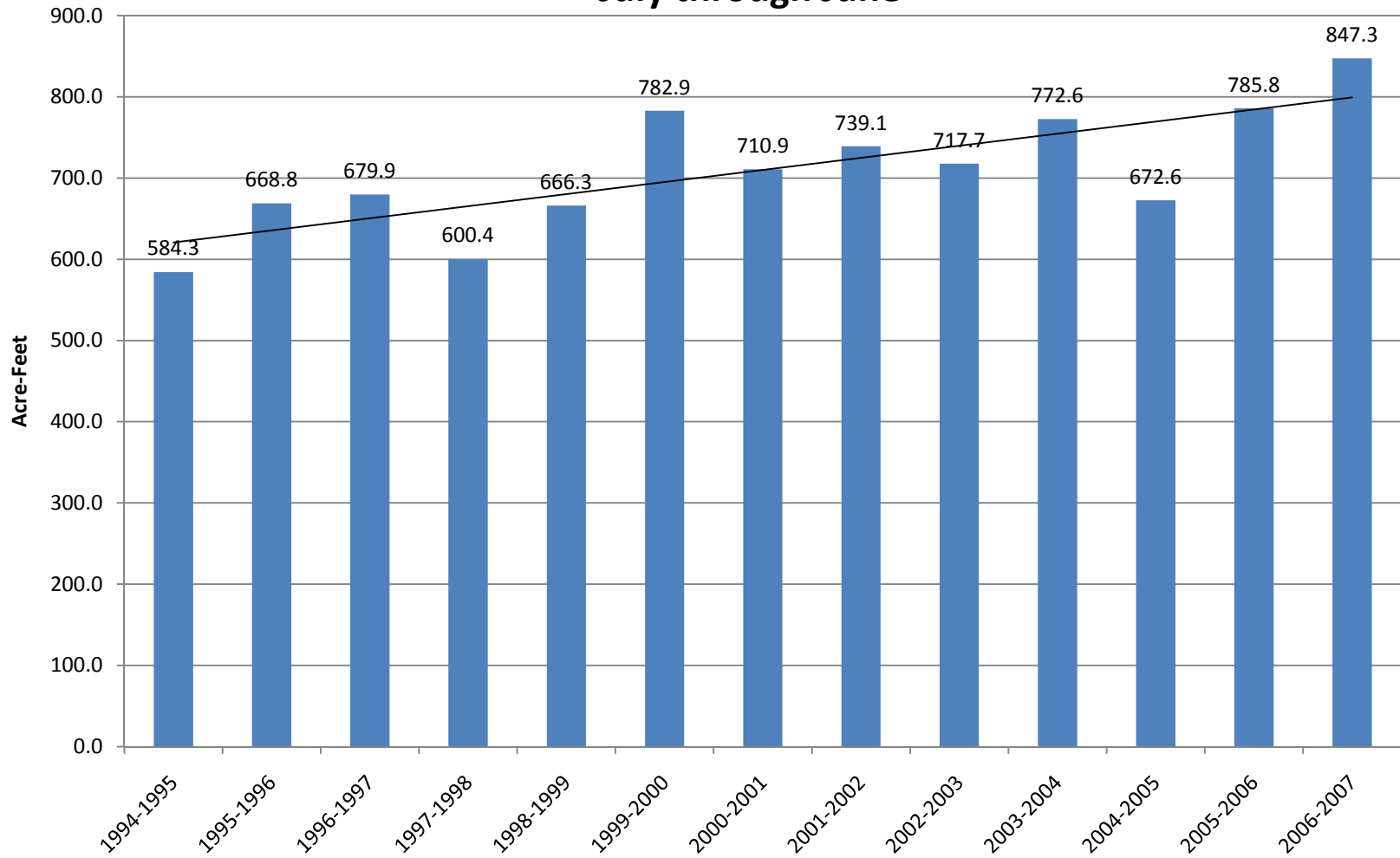
**Figure 2 -- Total Production 1994-1995 through 2006-2007  
July through June**



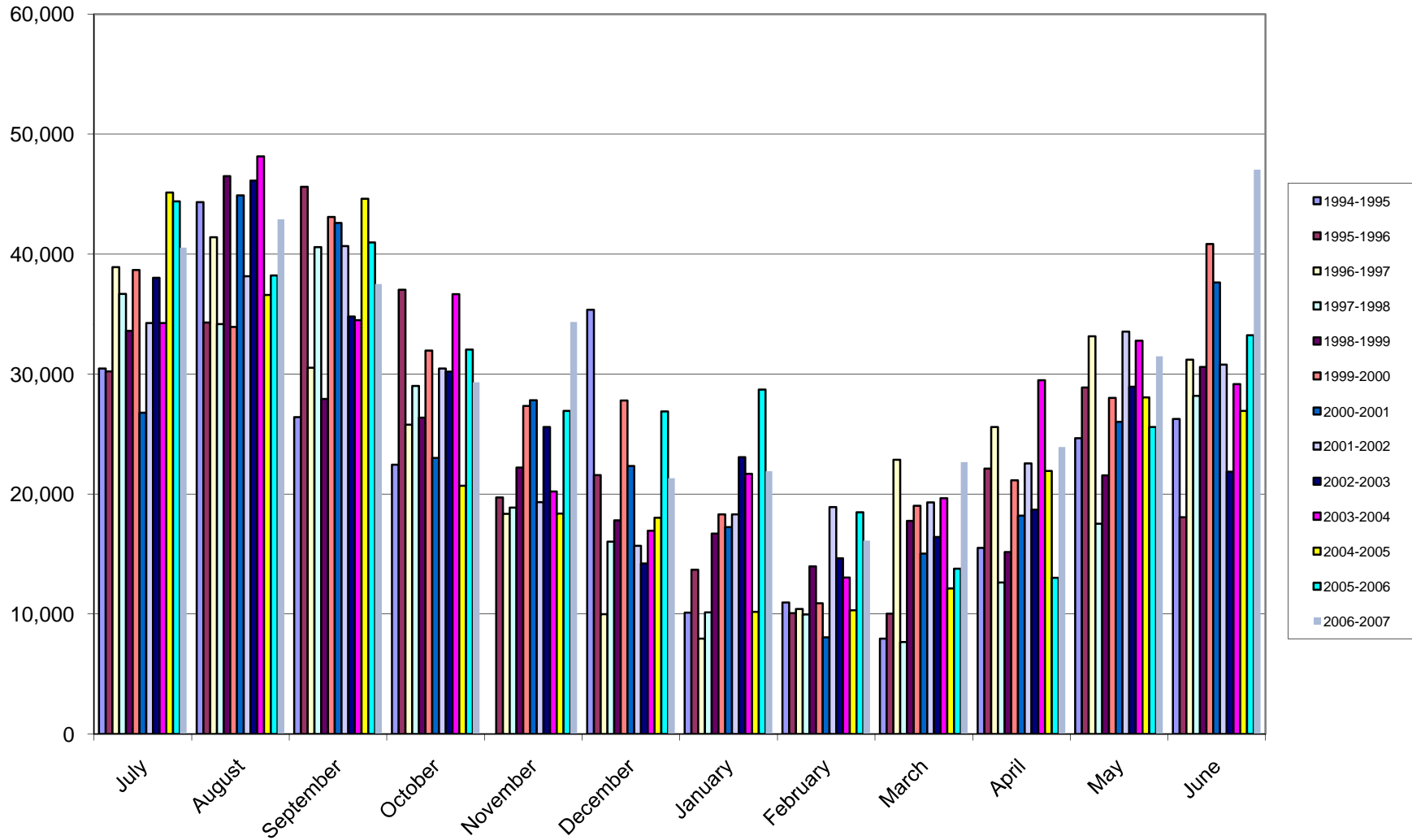
**Figure 3 -- 2006-2007 Production Sources  
July through June**



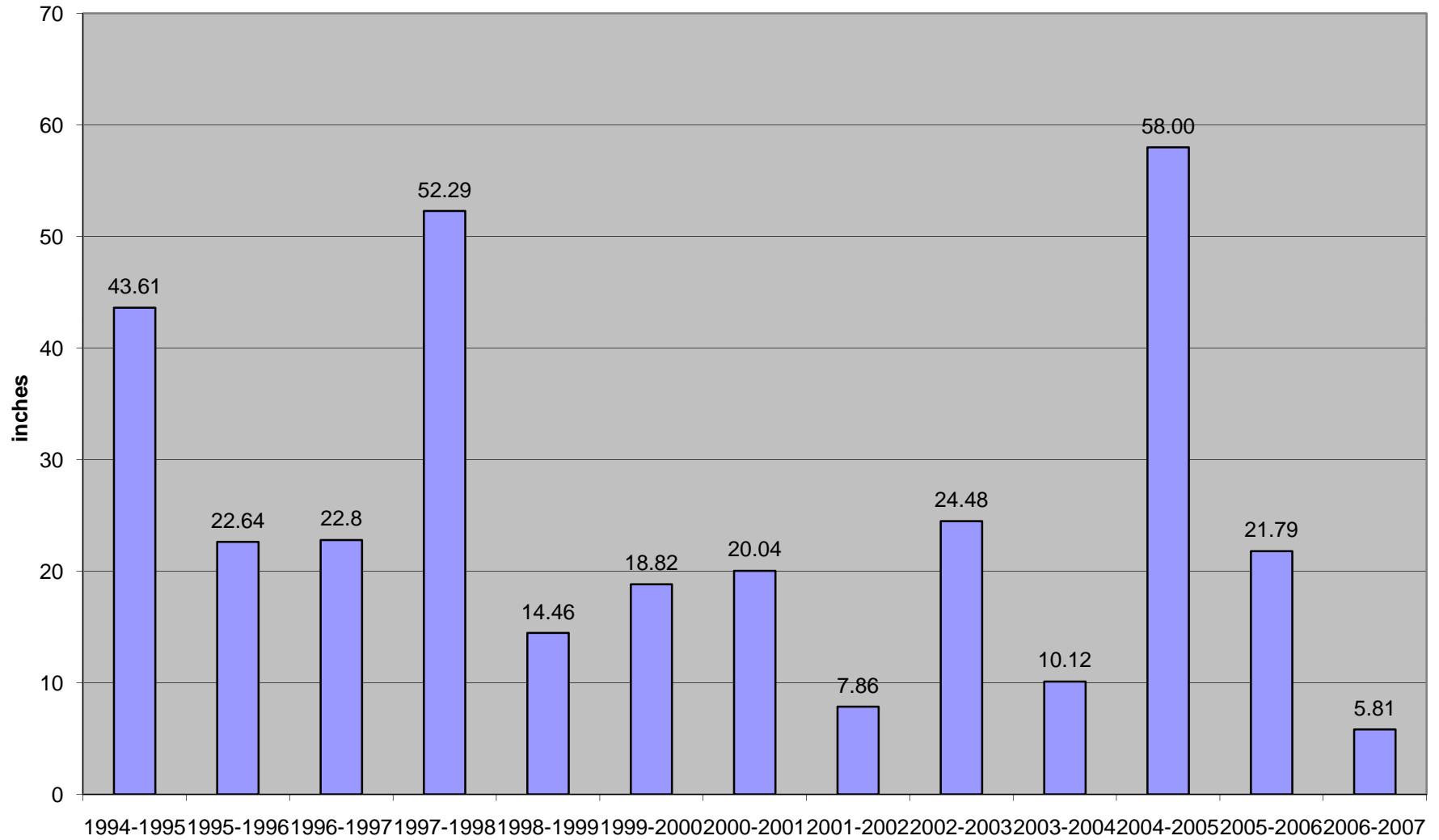
**Figure 4 -- Annual Water Sales  
July through June**



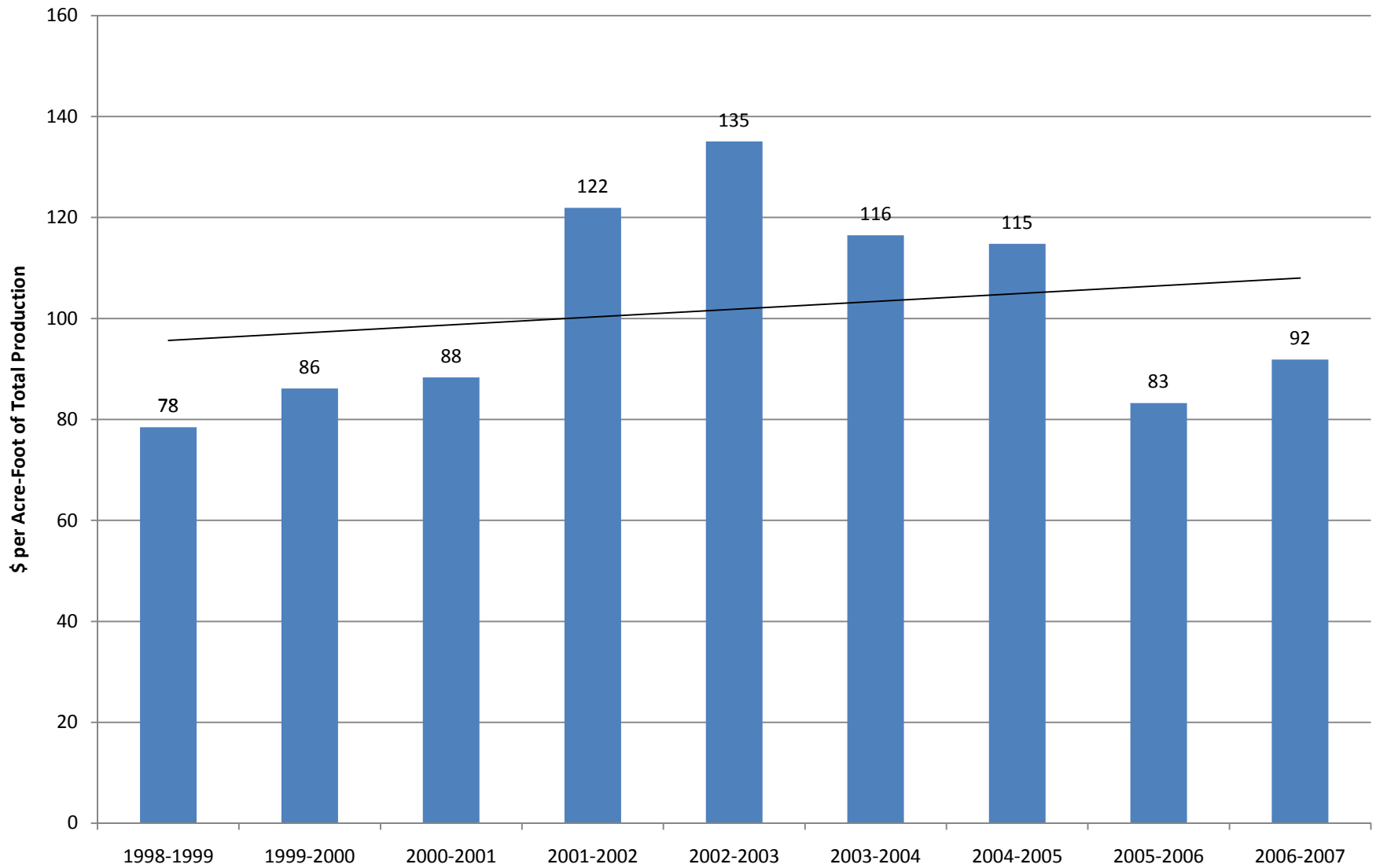
**Figure 5 -- Monthly Water Sales (CCF)  
1994-1995 through 2006-2007**



**Figure 6 -- Rainfall for 1994-1995 through 2006-2007  
July through June**



**Figure 7 -- Power Cost in Dollars per Acre-Foot of Total Production**



# Figure 8 -- Long Term Storage

