

**KINNELOA IRRIGATION DISTRICT**  
**REGULAR MEETING – BOARD OF DIRECTORS**  
**DISTRICT OFFICE**  
**TUESDAY – November 20, 2007**  
**7:30 P.M.**

**AGENDA**

- 1. CALL TO ORDER**
  - A. Declaration of a Quorum
  - B. Review of Agenda
  
- 2. PUBLIC COMMENT** -- Comments from the public regarding items on the Agenda or other items within the jurisdiction of the District.
  
- 3. DEVELOPMENT OF COMMUNITY OUTREACH PLAN**
  
- 4. REVIEW OF PRODUCTION REPORT**
  
- 5. PRESENTATION OF MASTER PLAN**
  
- 6. ELECTION OF BOARD MEMBERS**
  
- 7. GENERAL MANAGER'S REPORT**
  
- 8. REVIEW OF MINUTES** – Special Meeting – September 24, 2007  
Regular Meeting – October 16, 2007
  
- 9. REVIEW OF FINANCIAL REPORTS** – October 31. 2007
  
- 10. ITEMS FOR NEXT AGENDA**
  
- 11. CALENDAR** – Regular Meeting – December 18, 2007  
January 15, 2008  
February 20, 2007
  
- 12. ADJOURNMENT**

Each item on the Agenda, no matter how described, shall be deemed to include any appropriate motion, whether to adopt a minute motion, resolution, payment of any bill, approval of any matter or action, or any other action.

# PRODUCTION AND SALES REPORT FOR 2006-2007



10/24/2007

Kinneloa Irrigation District

Prepared by Melvin L. Matthews, General Manager

# 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 Table 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.

Table 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 1 shows a graphical representation of water produced for customers during this thirteen-year time period. Figure 2 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 3 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 4. The distribution of sales during the year is shown in Figure 5. 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 Figure 6. 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 7 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 8. 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**

**(July through June)**

<b>Production 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>
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>

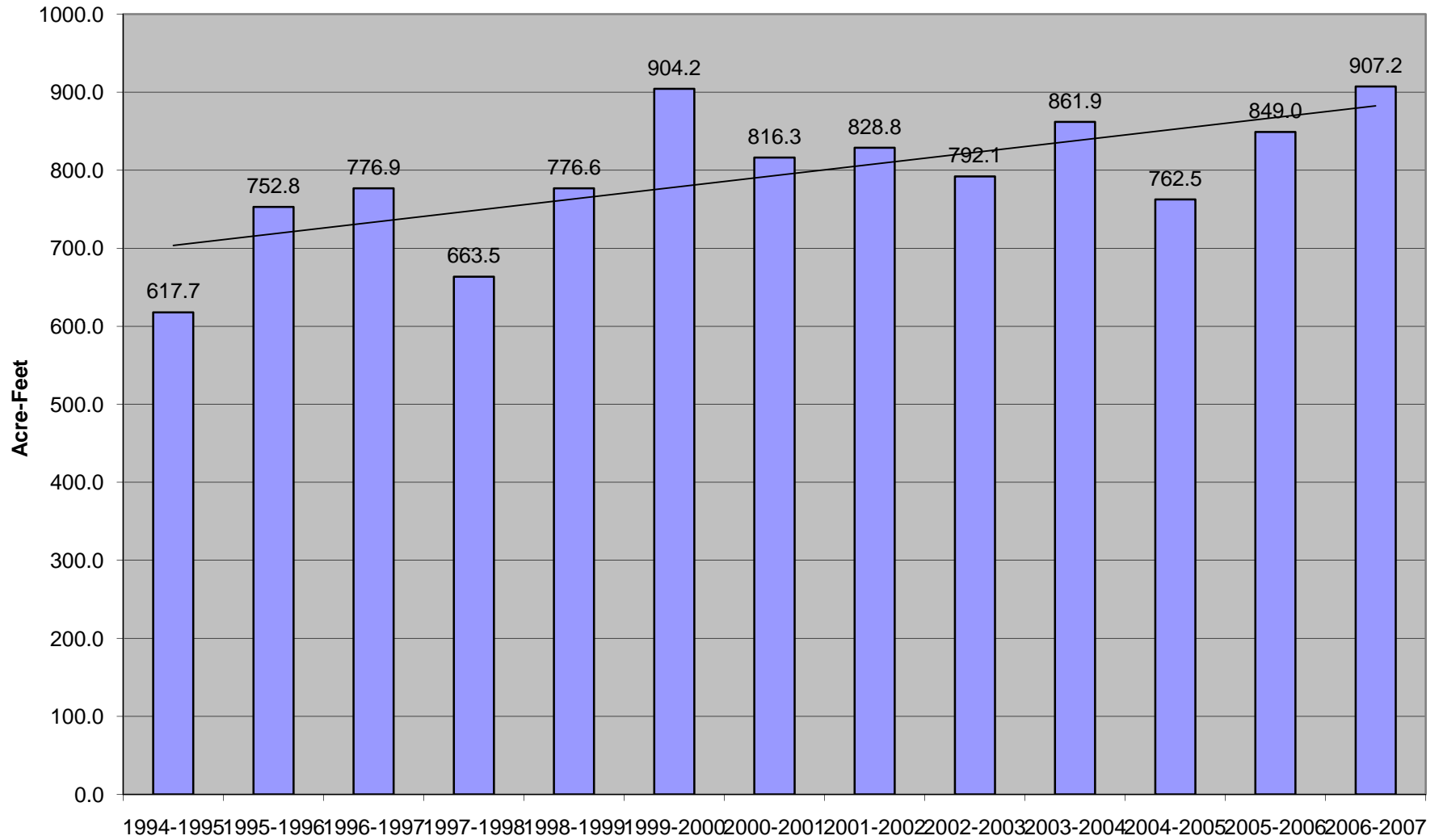
  

<b>Diversions in Acre-Feet</b>													
<b>Source</b>	<b>1994-1995</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>
Holly High/Low Tunnel	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>

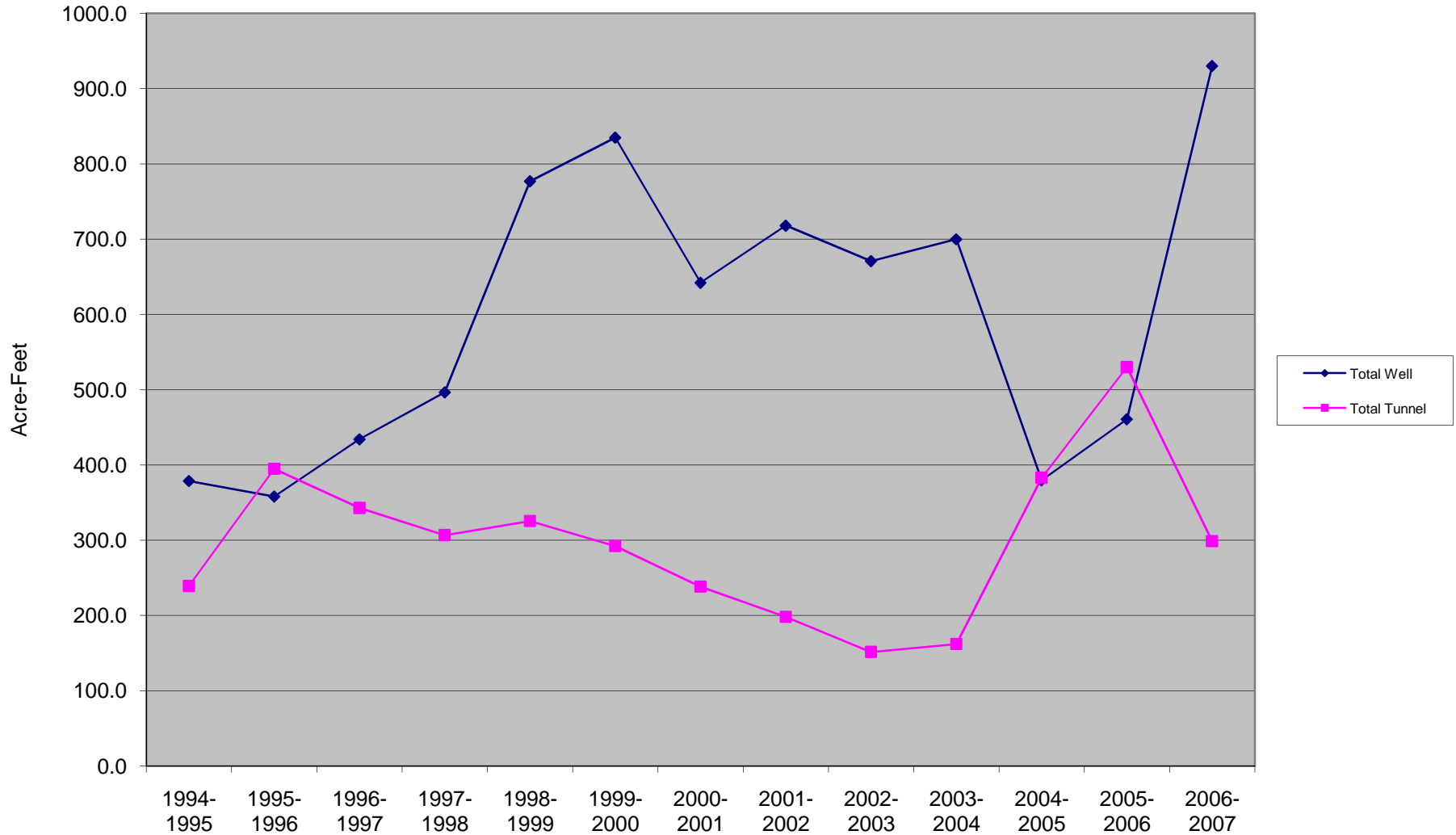
  

<b>Other Data</b>	<b>1994-1995</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>
Rainfall (inches)	43.61	22.64	22.8	52.29	14.46	18.82	20.04	7.86	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

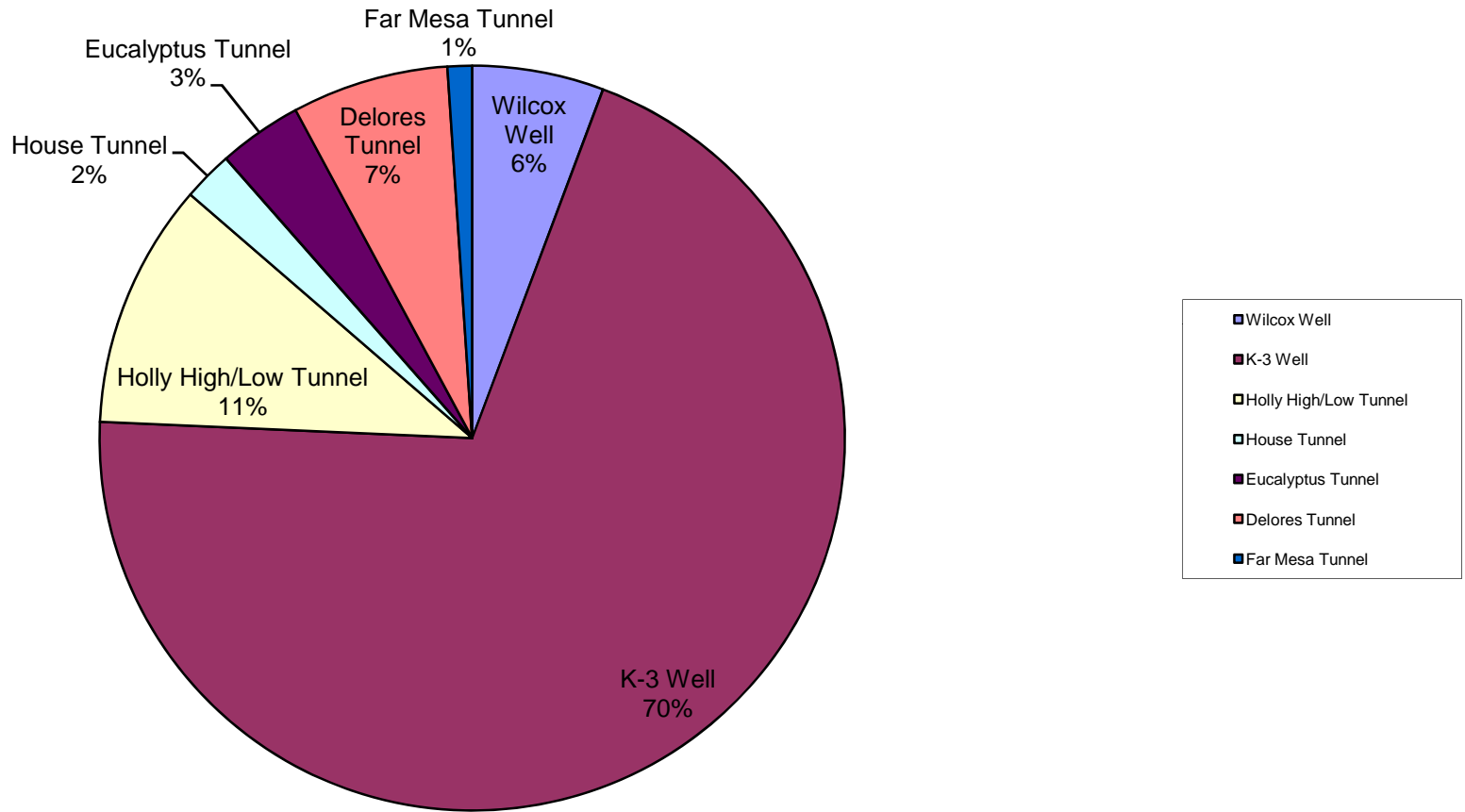
**Figure 1-- Total Production for Customers 1994-1995 through 2006-2007  
July through June**



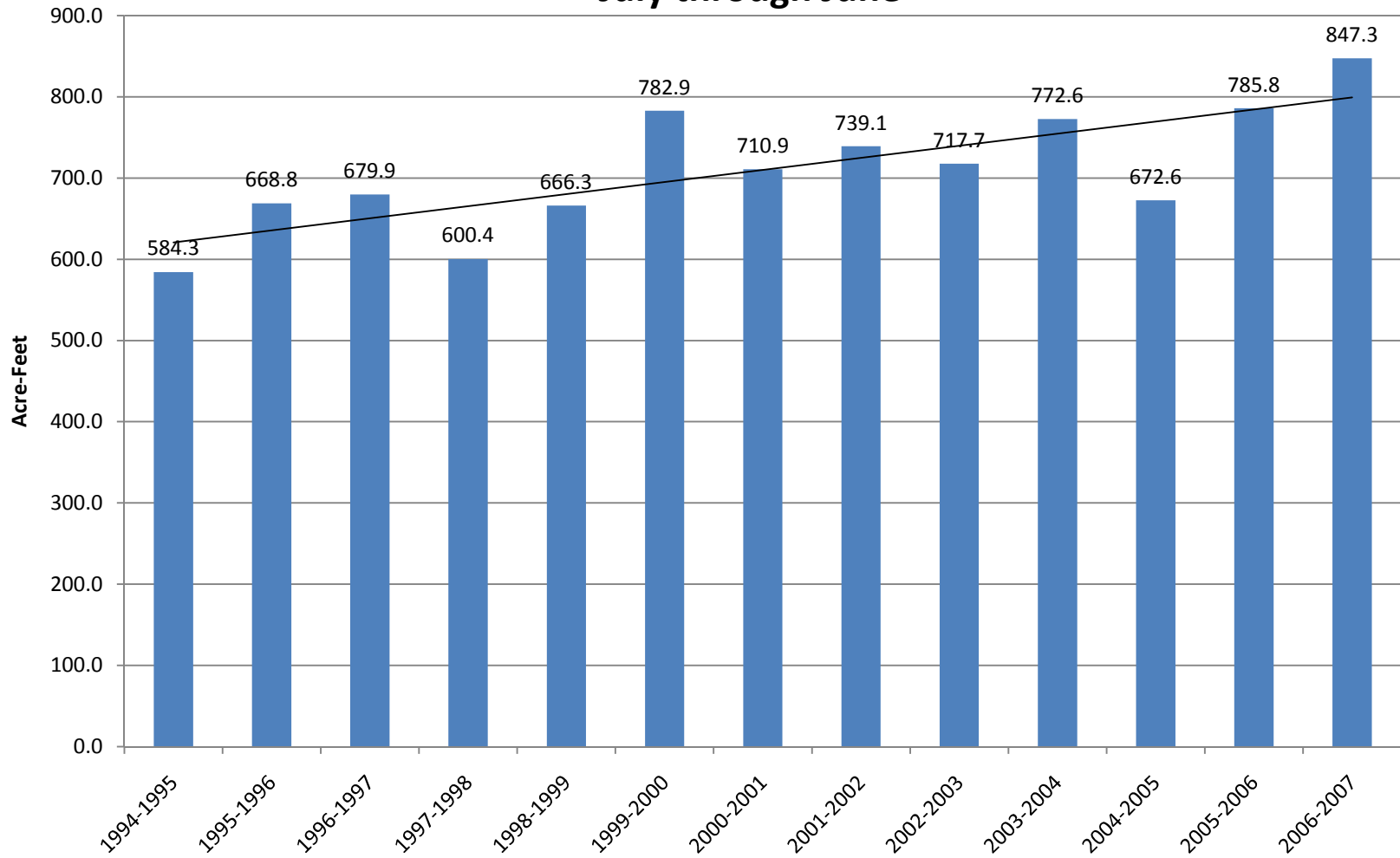
**Figure 2 -- Total Production 1994-1995 through 2006-2007  
July through June**



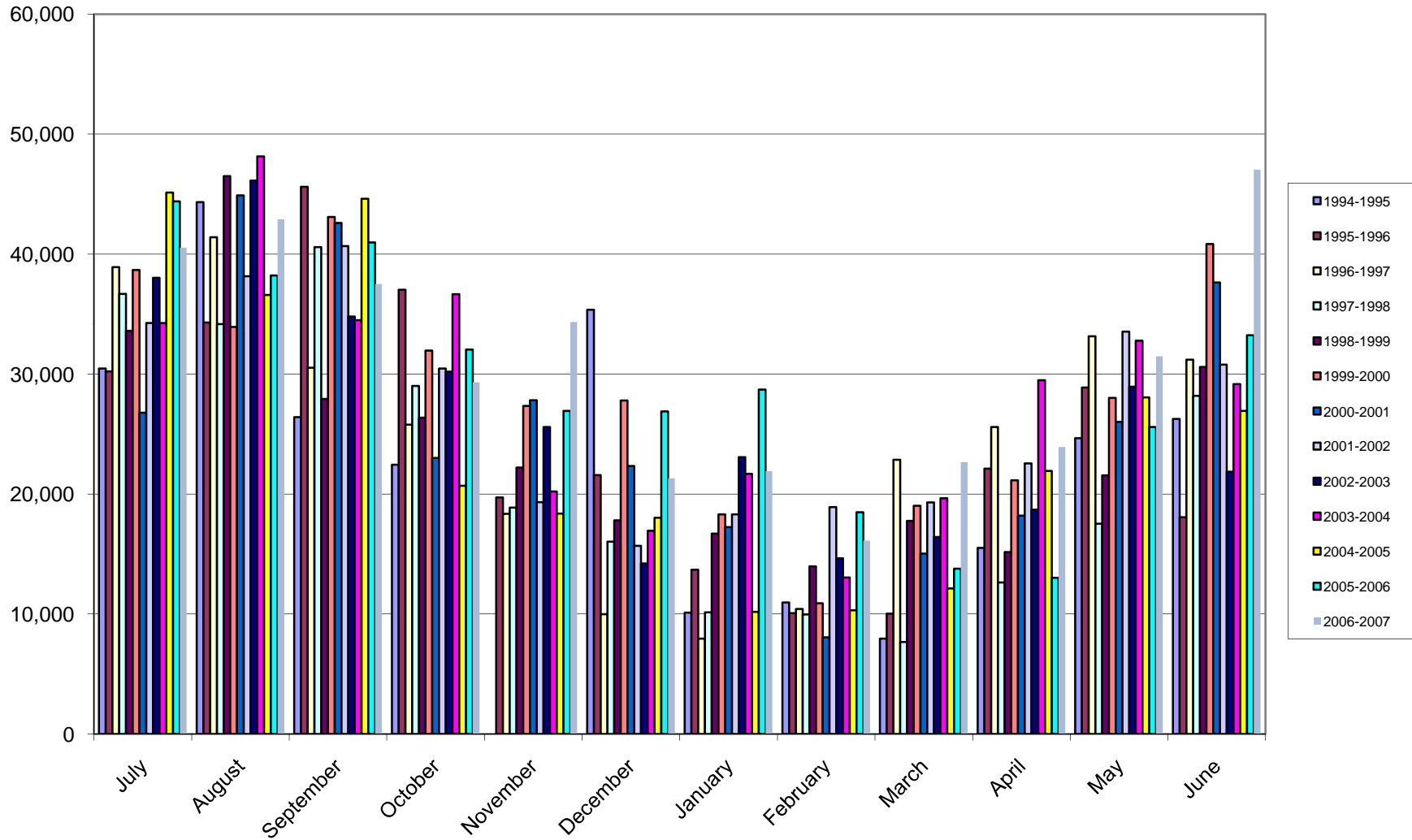
**Figure 3 -- 2006-2007 Production Sources  
July through June**



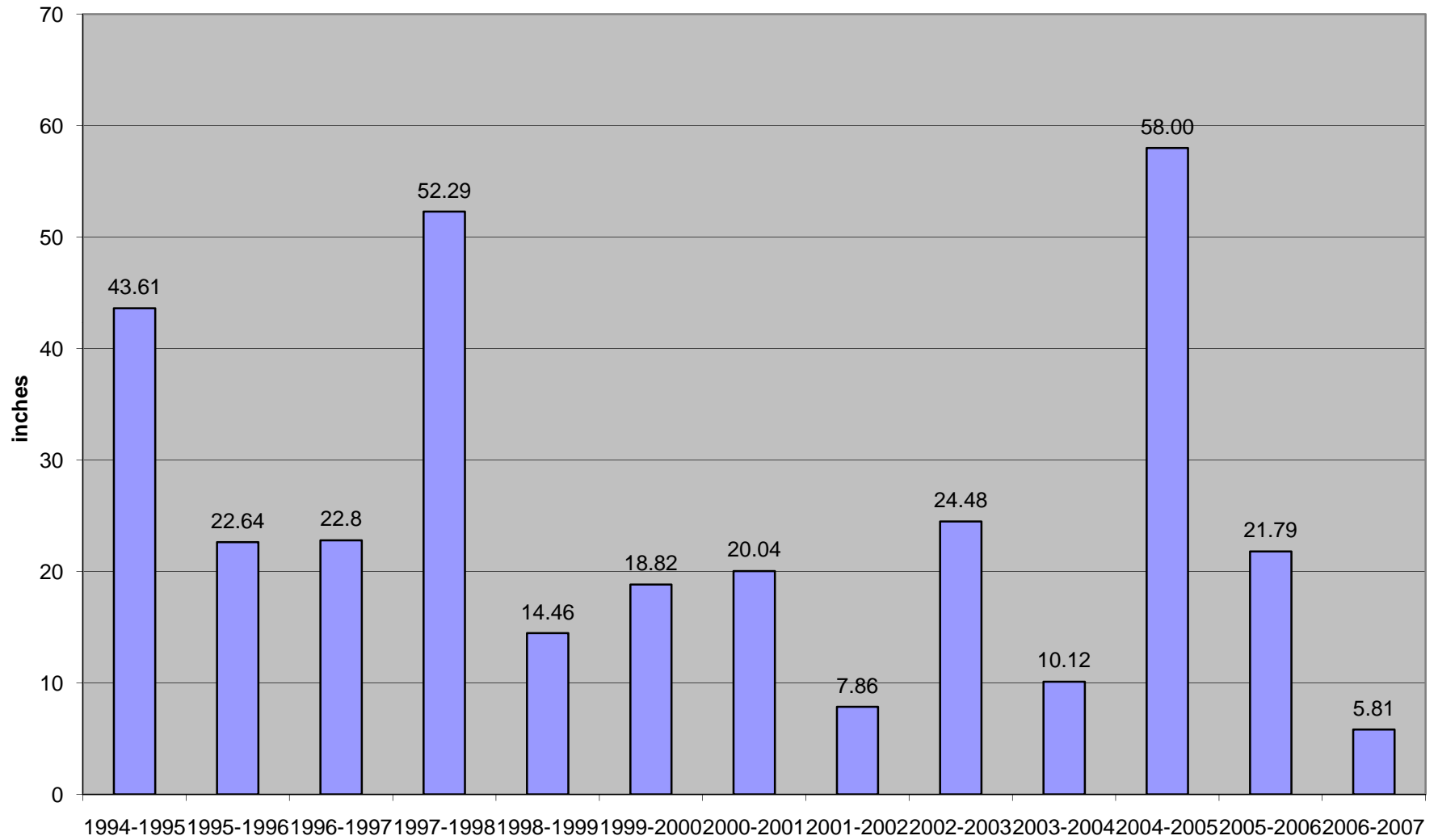
**Figure 4 -- Annual Water Sales  
July through June**



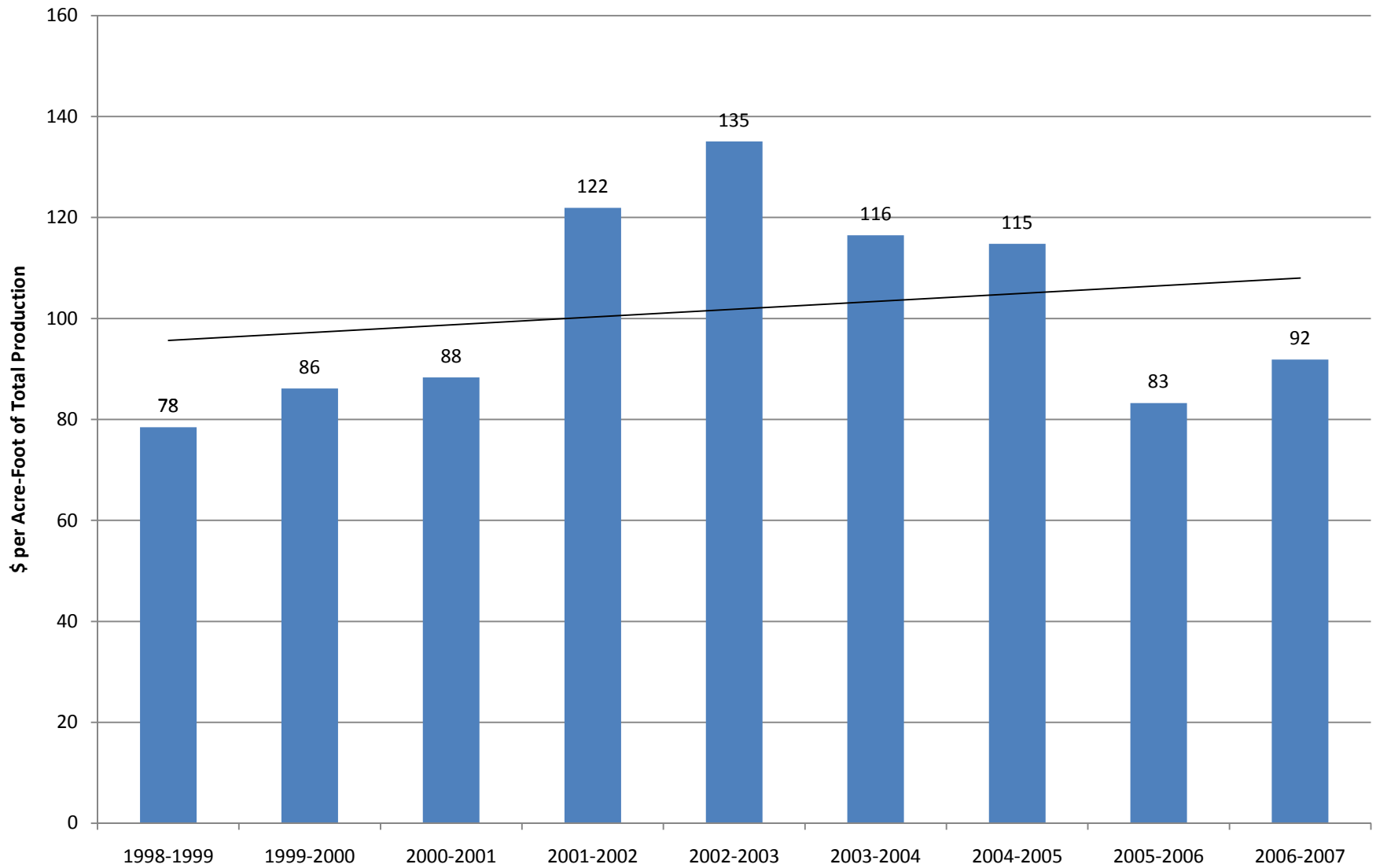
**Figure 5 -- Monthly Water Sales (CCF)  
1994-1995 through 2006-2007**



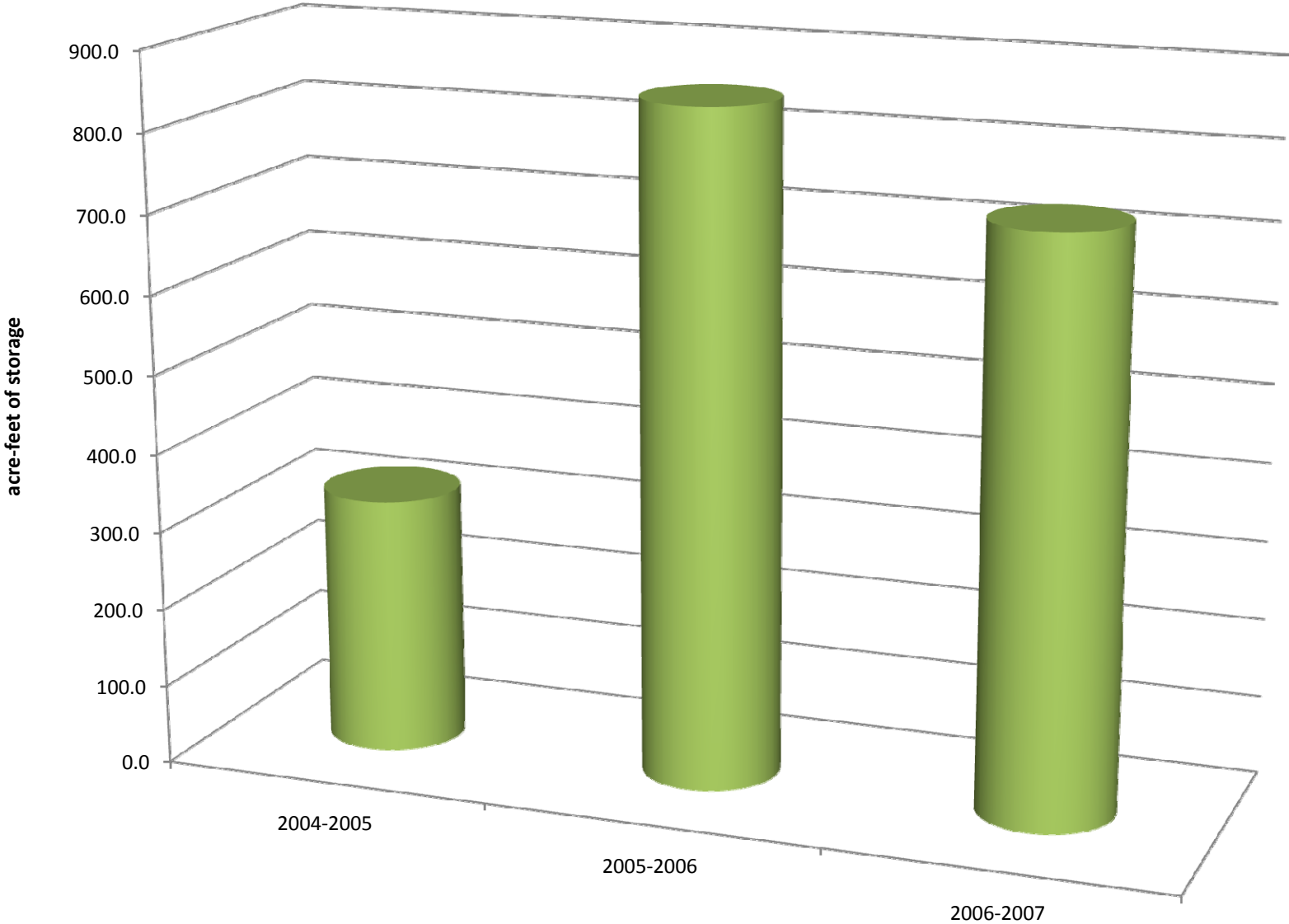
**Figure 6 -- Rainfall for 1994-1995 through 2006-2007  
July through June**



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



**Figure 8 -- Long Term Storage**





**WATER MASTER PLAN**

**FOR**

**THE KINNELOA IRRIGATION DISTRICT**

**Adopted by the Board of Directors on June 20, 2000**

**Revision 1 dated June 20, 2005**  
**Adopted September 20, 2005**

**Revision 2 dated October 21, 2007**  
**Adopted**

Melvin L. Matthews  
General Manager

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## **WATER MASTER PLAN EXECUTIVE SUMMARY**

The KID Water Master Plan provides a description of the Kinneloa Irrigation District's [KID] domestic water distribution system. It describes present, historical, and future water demands and potential future changes in the source of water supply. The Master Plan identifies and prioritizes necessary improvements and sets out cost estimates for implementing the improvements.

Since its formation in 1953, the KID has made minor renovations or upgrades to its system, based on a policy only to repair or replace facilities and pipelines as needed. However, by the mid 1990s a number of factors convinced the Board and many residents that significant upgrades to the system were needed.

Originally in 1953, the KID's parent systems' minimum fire flow standard was 750 gallons per minute [gpm] for 2 hours. This means that a fire truck could pump 750 gpm for up to 2 hours for a fire and all others homes in the same pressure zone would have enough residual pressure for basic domestic needs. Then in 1973 the Improvement District No. 1 [formerly Mira Loma Mutual Water Company] was designed for an average fire flow of 1000 gpm with 20 pounds per square inch [psi] residual. However, average means not every fire hydrant would meet this current standard. Currently, the County of Los Angeles Fire Department has a minimum standard of 1250 gpm to be pumped for 2 hours. Today, in 2007, approximately 40% of the current system doesn't meet the new standard for fire flow and fire hydrant location. The firestorm of October 1993 exposed weaknesses in the KID's pipeline delivery capacities. The Fire Preparedness Policy [FPP] was developed in February 1997 and revised in April 2005. The intent of the FPP was to set goals to be achieved to prepare for future multiple structure fires within the KID community. As a result, the KID Fire Preparedness Policy now requires that all new facilities, including pipe, be sized to support a fire flow of 1250 gpm with 20 psi minimum residual for 4 hours. The FPP is included as Exhibit III in the Appendix.

The information and data used in the Water Master Plan were developed from a number of sources:

- Discussions with the KID staff.
- A review of KID files dating back to 1953 was used for a baseline to build the initial data.
- Hydraulic studies completed for the Kinneloa Ridge Development and the Doyne Road Development contributed important information to the plan.
- The average day and maximum day demands were developed during the 1990-1991 droughts.

In April of 1996, ASL Consulting Engineers conducted a study of the KID to identify water main and reservoir improvements required to increase water system capabilities to deliver domestic demands plus 1,250 gpm-fire flows. As a part of this plan ASL Consulting Engineers prepared cost estimates in April 1996, with updates in February of 2000. Staff reviewed these estimates and made adjustments for inflation and other factors to update the plan for 2005 and again for this update in 2007.

After significant discussions and review of the original plan the Board determined that modification of the existing KID reservoirs was too expensive and would involve costly environmental studies. The Board determined that pump station improvements would better serve the District by concentrating on providing booster station flow capacities to achieve the desired fire flows of 1250 gpm. Cost estimates for KID funded improvements to reservoirs are in Exhibit I of the Appendix, but are not implemented in the Water Master Plan. However, should outside sources of funding become available consideration of these projects will be re-evaluated since increased reservoir storage capability is still an important objective of the District in order to prepare for all types of emergencies and to provide operational flexibility.

In addition to implementing pump station improvements the preparation of the Water Master Plan has revealed the following conclusions:

- All pipes that develop chronic leaks should be replaced to achieve overall lower operational cost.
- All pipes which have exceeded their useful life should be replaced. For the purpose of this plan, the useful service life of these facilities is set at 50 years.
- Pipelines, which have become inaccessible due to development or are traversing private property in easements, should be relocated.
- Pipelines should be upsized where required to meet the Fire Preparedness Policy goals.
- The KID presently has sufficient booster pump capacity to provide for domestic demands. The 1,250-gpm-fire flow requires supplementing booster station flow with gravity flow from reservoirs.
- Preferred installation for booster pumps would be high efficiency vertical turbine units.
- High Pressure Tunnel should have a permanent replacement pipeline.
- Low Pressure Tunnel should have a permanent replacement pipeline.
- The KID should provide radio telemetry at all facilities.
- All reservoirs should have earthquake sensors and automatic shutoff valves.
- The KID should continue to fund planned maintenance on all facilities.

The total estimated costs of all necessary improvements as identified in the Water Master Plan adopted in 2000 were:

1. Pipeline Improvements	\$1,192,600
2. Pump Station Improvements	\$ 108,200
3. Tunnels	\$ 421,900
4. Other Improvements	<u>\$ 395,500</u>
Total	\$2,118,200

The total estimated costs as revised and updated in 2005 were:

1. Pipeline Improvements	\$1,899,600
2. Pump Station Improvements	\$ 3,600
3. Tunnels	\$ 321,000
4. Other Improvements	\$ 271,000
5. Planned Maintenance	<u>\$ 687,400</u>
Total	\$3,182,600

The difference between the 2000 costs and 2005 costs was an increase of \$1,064,400. The net increase

was attributed to the following factors:

- Inclusion of planned maintenance items in the amount of \$687,400 that are expected over the next ten years.
- The estimated cost of remaining projects after removing completed projects and adding new projects identified since the master plan was adopted.
- Adjustment of previous costs to reflect inflationary and other factors in current project costs.
- Exclusion of projects paid by developers.

The following projects have been completed since the 2005 revision:

- East Tank has been refurbished.
- K-3 Well pump and motor have been rebuilt.
- One of the Holly booster pumps has been rebuilt.
- Safety upgrades were completed at Holly Tanks.
- Maintenance agreement with tank maintenance company was established for all five steel tanks.
- Earthquake-sensing valves have been installed as part of our emergency preparedness program at all tank and reservoir facilities except for the Brown Reservoir.
- Continuous chlorine analyzers have been installed at all production sources.
- Major upgrades to our SCADA system were completed to allow continuous monitoring and alarms on additional components of our production and distribution system.
- Permanent repairs and pipeline replacement were completed on the House Tunnel and the High/Low Pressure Tunnel production sources.
- The Vosburg booster pump was replaced with a new 25 hp submersible unit.

The total estimated costs for remaining projects as revised and updated in this 2007 Revision using internal estimates are:

1. Pipeline Improvements	\$3,128,000
2. Pump Station Improvements	\$ 190,000
3. Tunnels	\$ 321,000
4. Other Improvements	\$ 189,000
5. Planned Maintenance	<u>\$ 542,000</u>
Total	\$4,370,000

The difference between the 2005 costs and 2007 costs is an increase of \$1,187,400. The net increase is attributed to the following factors:

- Adjustment of previous costs to reflect inflationary and other factors in current project costs.
- A significant increase in pipeline construction costs based on bids for current projects.
- The estimated cost of remaining projects after removing completed projects and adding new projects identified since the master plan was adopted.

In conclusion, many of the distribution and transmission facilities predate 1953, and are nearing the end of their useful service life. Originally, water facilities in the KID provided domestic supply, plus a fire flow of 750 gpm. As the population of the KID has grown over the years, the demand placed upon the entire system, including distribution and transmission mains, water sources, reservoirs, and pump stations have encroached upon the ability of the system to meet the required demands. The need for increased fire flow to meet the minimum Fire Department requirements for every fire hydrant will require the KID to construct improvements to the water system in the years ahead. Although many projects identified in the Water Master Plan adopted in 2000 and subsequent revisions have been completed, failure to continue to undertake the expenditures for the remaining projects leaves the KID vulnerable to serious and sustained service failure in the event of natural disaster or unanticipated breakage. Moreover, the cost to replace facilities and pipelines under non-optimal emergency conditions is likely to be much higher than if done under a planned program.

As a footnote to this 2007 Revision, it should be noted once again that this Master Plan was primarily developed to address fire flow issues and general emergency preparedness issues that were raised after the 1993 firestorm. Although many operational improvements are gained through completion of recommended projects, this Master Plan does not address many worthwhile projects that would improve the operational efficiency and reliability of the production and distribution system. For example, we are currently in a period of sustained drought with no expectation of normal rainfall in 2007-2008 season. Since the Wilcox Well is no longer a major production facility due to declining pumping levels in the Raymond Basin and since production level from the tunnels has also been declining due to the drought, we are increasingly dependent on a single production source – the K-3 Well. If the current conditions continue or worsen in the years ahead, the K-3 Well may not be able to meet our production demands for normal or emergency conditions. Therefore the KID staff will continue to examine possible new production sources such as drilling a new well and/or constructing a connection with Foothill Municipal Water District in order to receive imported water from the Metropolitan Water District. However, the cost of developing new production sources is not currently reflected in this Master Plan. Therefore unless additional funding sources are identified, voluntary or mandatory conservation programs may be necessary in the future to avoid major additional capital expenditures not included in this revision of the Master Plan.

**KINNELOA IRRIGATION DISTRICT**  
**WATER MASTER PLAN**  
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**KINNELOA IRRIGATION DISTRICT**  
**WATER MASTER PLAN**

**1.0 INTRODUCTION, PURPOSE, AND HISTORY**

**1.1 *Introduction***

The Kinneloa Irrigation District (KID) is a State irrigation district which owns and operates a water system in the north-central part of the Los Angeles County with the city limits of Pasadena on the west, south, and east sides and the Angeles National Forest to the north. The service area of the District covers an area of approximately 500 acres. The District additionally encompasses a watershed area north of the District. The KID serves a population of approximately 1,450 and there are 600 active metered services in the District's service area as of this revision. Additionally, it is the KID's responsibility to provide fire protection water to its customers. The District maintains 100 fire hydrants.

Revenue for the KID is derived almost exclusively from the sale of water.

**1.2 *Purpose***

The purpose of this Master Plan is to describe the existing water system facilities within the KID, identify weaknesses within the system, recommend improvements, prioritize the necessary improvements, and determine cost estimates for implementing the improvements. This plan will also identify undeveloped land within the KID and assess potential for future development of that land.

**1.3 *History***

The Kinneloa Irrigation District, originally formed in 1953, is a state irrigation district established pursuant to Division 11 of the California Water Code. A five member publicly elected Board of Directors governs it. The District water system presently serves about 600 households as well as a school, nursery, church, and fire station. In 1974, the KID had 190 services.

In 1974 an improvement district was formed with the addition of the Mira Loma, Canyon Mutual, and Osborn Water Companies to the Kinneloa Irrigation District. The facilities in this area were replaced or upgraded to the current standards using funds from a bond issue. This added additional 225 services to the KID.

In 1978, the Wilcox Well was upgraded to provide additional production capacity for homes on the east side of the district.

In 1979, 24 homes were added on Villa Highlands Drive and Villa Knolls Drive by Falzone Development.

In 1983, Nordberg and Neimeyer developed the area know as Hastings Heights and provided lots for 27 homes.

In 1990, town homes were built by Dove Creek Development at a site near New York

Drive and Altadena Drive which added 50 services.

In 2003, 21 building sites were completed in the Kinneloa Canyon area known as Kinneloa Ridge by Diamond-Segundo Development and 23 services are now active including three for watering common areas. Additional pumping and storage facilities were added to accommodate this development and to provide a benefit for the District as a whole.

Additionally several individual lots have been developed to account for the 600 present metered services.

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**2.0 SYSTEM DESCRIPTION**

**2.1 *General***

The Kinneloa Irrigation District is divided into two distinct geographic areas. They are the east service area and the west service area, which are generally, divided by the Wilcox Canyon watercourse. Presently, the east and west service zones are connected by pipelines consisting of 6-inch and 8-inch pipe connecting the Holly Booster Pump Station, the East Tank, and the Vosburg Booster Station.

Almost all of the services in the KID are residential services for single family homes. The need for irrigating hillsides on relatively large lots creates much of the demand. Services and meters range from 3/4" to 2" in size.

Within each service area are several pressure zones which are serviced by a piping network, reservoirs, booster pump stations, wells, and horizontal water tunnels. See Exhibit II for a schematic drawing of the existing KID system.

**2.2 *Water Sources***

**2.2.1 Water Wells**

The KID owns and operates two water wells, which are the primary source of water for the District. Those wells are the Wilcox Well which supplies the Wilcox Reservoir and the K-3 Well which supplies the Eucalyptus Reservoir. Both wells pump from the Raymond Basin. The District adjudicated pumping allowance is 516 acre-feet per year plus an allowance for spreading. Current production is approximately 900 acre-feet per year. Both wells are equipped with deep well, oil lubricated, vertical turbine pumps and on-site generated sodium hypochlorite (0.8%) chlorinators with LMI metering pumps for disinfection. Well status signals are received via radio telemetry and start-stop commands are based on reservoir levels. See Table 2-1 for a summary of well data.

**TABLE 2-1  
WELL DATA**

<b>Well Name</b>	<b>Year Drilled &amp; Depth</b>	<b>Casing Size (inches)</b>	<b>Motor Horsepower</b>	<b>2006-2007 Production</b>
Wilcox Well	1924 500'	14"	100	70 acre-feet
K-3 Well	1965 700'	14" I.D.	125	860 acre-feet*

\*Includes production of wholesale water sold to the City of Pasadena.

### 2.2.2 Tunnels

The KID owns and operates 15 water supply tunnels. The tunnels were originally constructed by hand in the 1800's and, in recent times, have supplied groundwater to the KID system and for spreading. Tunnel flow rate varies continuously according to the time of year. Tunnel water is delivered via gravity. Table 2-2A summarizes the tunnels, their status, and production.

**TABLE 2-2A  
TUNNEL SUPPLIES**

<b>Tunnel Name</b>	<b>Current Status</b>	<b>2006-2007 Production</b>
High & Low Pressure Tunnels (4)	Currently in Service – feeds the Holly Tanks	131 acre-feet
House Tunnel	In service – feeds the Holly Tanks	27 acre-feet
Eucalyptus Tunnel	In service – feeds the Eucalyptus Reservoir	45 acre-feet
Long Tunnel	In service for spreading	37 acre-feet
Delores Tunnel	In service – feeds the Vosburg Reservoir or used for spreading	84 acre-feet
Far Mesa Tunnels (2)	In service – feed the Glen Reservoir	13 acre-feet
Tent Tunnel	In service for spreading	3 acre-feet
Falls Tunnel	In service for spreading	Not measured
Diversion Tunnel	In service for spreading	Not measured
Winifred Tunnels (2)	Not in service	Not measured

The KID also receives spreading credit from the Sierra Madre Villa Debris Basin and the Kinneloa Canyon Debris Basins. Total production from these sources for 2006-2007 was 202 acre-feet.

Depending on the season of the year, the tunnels are each capable of supplying anywhere from a few gallons per minute up to a hundred gallons per minute or more.

The tunnels have traditionally been a low cost source of water for the KID. However, the firestorm of October 1993 damaged the High and Low-Pressure Tunnel delivery pipelines. The rainstorms of the winter of 1993-94 further damaged the High and Low Pressure Tunnel pipelines. The High and Low Pressure Tunnel pipelines were further damaged in the winter storms of 1994-95. As a result of the aforementioned natural disasters, temporary repairs were made to return these sources to service and permanent repairs were made in 2006. Old age, rockslide damage, and rain storm runoff washed out the Delores Tunnel delivery pipeline. This pipeline was replaced in 2001 after being out of service since 1979.

Because of the age of the tunnels and their vulnerability to damage from natural causes, the tunnel supply is not considered as a reliable source of supply for the purpose of calculating available water source supply. In this respect, the tunnel supply should be thought of as a reserve or "back-up" supply.

### 2.2.3 Interconnections with the City of Pasadena

The KID currently has one interconnection to deliver KID excess water to the City of Pasadena and has five emergency interconnections. These interconnections are shown in Table 2-2B. The capacity of interconnections 3 and 5 are planned to be increased in 2007 or 2008 as a joint project with the City of Pasadena.

**TABLE 2-2B  
INTERCONNECTIONS WITH CITY OF PASADENA**

<b>ID</b>	<b>Location</b>	<b>Description</b>	<b>Size</b>	<b>Capacity</b>	<b>Purpose</b>
1	1776 Kinneloa Canyon Road	KID-Eucalyptus (1125 HWL) to Pasadena-Sheldon (1050 HWL)	4"	800 gpm	Deliver KID excess water to City of Pasadena
2	1727 Kinneloa Canyon Road	Pasadena-Calaveras (1209 HWL) to KID-Eucalyptus (1125 HWL)	4"	650 gpm	Emergency interconnection to KID-Eucalyptus (K-3 Well System)
3	3560 Ranch Top Road	Pasadena-Don Benito (1432 HWL) to KID-Vosburg (1430 HWL)	4"	400 gpm	Emergency interconnection to KID-Vosburg & Brown/Glen System
4	2999 New York Drive	Pasadena-Sheldon (1050 HWL) to KID-Wilcox Reservoir (944 HWL)	6"	1200 gpm	Emergency interconnection to KID-Wilcox Well/Wilcox Reservoir
5	3410 Fairpoint Street	KID-Vosburg (1430 HWL) to Pasadena-Murray System (1176 HWL)	2"	200 gpm	Emergency interconnection to Pasadena-Murray/Calaveras System
6	2650 New York Drive	Pasadena-Calaveras (1209 HWL) to KID-Eucalyptus (1125 HWL)	8"	1500 gpm	Emergency Fire Protection for Dove Creek Town Homes

2.2.4 Portable Booster Pumps and Generator

The KID currently has two [2] trailer mounted portable boosters available for emergency operations and to supplement fire flows in some or all pressure zones. These pumps are capable of 1050 gallons per minute [gpm] at 360 feet Total Dynamic Head [TDH]. The KID also has a diesel-powered trailer mounted portable generator to supply emergency power to any of the KID facilities.

2.3 **Reservoirs**

The KID operates and maintains nine (9) water storage tanks and reservoirs. Overflow elevations range from 940 feet to 1,637 feet. Reservoir data is shown in Table 2-3A.

**TABLE 2-3A  
STORAGE RESERVOIR DATA**

<b>Reservoir Name</b>	<b>Number &amp; Capacity</b>	<b>Zone Served</b>	<b>HWL</b>	<b>Construction</b>
Eucalyptus	1 - 0.180 MG	Eucalyptus	1,125'	Partially Buried Reinforced Concrete
Wilcox	1 - 1.125 MG	N/A	940'	Partially Buried Concrete
Holly Tanks	2 - 0.150 MG	Holly/Sage	1,460'	Circular, Welded Steel Aboveground
Vosburg	1 - 1.250 MG	Vosburg	1,430'	Partially Buried Reinforced Concrete
Glen	1 - 0.125 MG	Glen/Brown	1,265'	Buried Reinforced Concrete
Brown	1 - 0.125 MG	Glen/Brown	1265'	Buried Reinforced Concrete
East Tank	1 - 0.150 MG	East	1,637'	Circular Welded Steel, Aboveground
Sage Tank	1 - 0.225 MG	Holly/Sage	1,457'	Circular Welded Steel, Aboveground
West Tank	1 - 0.500 MG	West	1,634'	Circular Welded Steel, Aboveground
<b>Total Storage</b>	<b>3.980 MG</b>			

Existing storage capacity by zone is shown in Table 2-3B.

**TABLE 2-3B  
STORAGE CAPACITY BY SERVICE ZONE**

<b>Zone</b>	<b>Storage Capacity</b>
Eucalyptus	0.180 MG
Holly/Sage	0.525 MG
Glen/Brown	0.250 MG

East Tank	0.150 MG
Vosburg	1.250 MG
West Tank	0.500 MG

## 2.4 *Booster Pumping Facilities*

The KID operates and maintains five (5) separate booster-pumping facilities. All booster pumps are operated via telemetry and based upon reservoir levels. Booster pump facility data is shown in Table 2-4.

**TABLE 2-4  
BOOSTER PUMPING FACILITIES**

Facility Name	No. of Pumps	Horsepower	Head (feet)	Approx. Capacity (gpm)	Service
Eucalyptus	3	50 HP each	346'	400 each	Eucalyptus Reservoir to the Holly Tanks
Holly	2	20 HP each	205'	200 each	Holly Tanks to East Tank
Vosburg	1	25 HP	195'	280	Vosburg Reservoir to East Tank
Glen	1	25 HP	165'	345	Glen Reservoir to Vosburg Reservoir
Sage	2	25 HP each	205'	400 each	Sage Tank to West Tank
Wilcox Reservoir	1*	75 HP	325'	515	Wilcox Reservoir to Glen Reservoir
		75 HP	490'	360	Wilcox Reservoir to Vosburg Reservoir
	2**	50 HP & 75 HP	325'	650	Wilcox Reservoir to Glen Reservoir
		50 HP & 75 HP	490'	433	Wilcox Reservoir to Vosburg Reservoir

\* Condition when pumping to either the Glen Reservoir or the Vosburg Reservoir with just the 75 HP pump.

\*\*Condition when pumping to either the Glen Reservoir or the Vosburg Reservoir with both the 75 HP and 50 HP pumps.

## 2.5 *Piping*

### 2.5.1 Existing Piping

There are approximately 66,000 L.F. of transmission and distribution mains in the KID service area. The pipes range in size from 1" to 12-inch in diameter. Piping materials include galvanized steel, CML and CMC steel, asbestos cement (AC), ductile iron (DI) and AWWA C-900 PVC. There are approximately 90 fire hydrants in the system ranging in size from 2 ½" to 6" x 4" x 2 ½". All of the galvanized steel piping is old and obsolete. Some of the existing pipe is old and inadequate to provide current revised requirements for fire service.

### 2.5.2 Future Piping

Traditionally, piping in the KID was sized to provide for fire flows of 750 gpm. The firestorm of October 1993 exposed this pipeline delivery capacity weaknesses. As a result, the KID Fire Preparedness Policy now requires that all new facilities, including pipe, be sized to support a fire flow of 1,250 gpm with a 20 psi minimum residual. This represents a 500 gpm increase to the original system design capacity of 750 gpm fire flow at 20 psi minimum residual pressure. Some areas of the existing system meet the new requirements; however, portions of the distribution system will provide only the minimum original system design fire flows. Additionally the County of Los Angeles has required 2000 gpm fire flow for some of the new larger homes currently being built where fire sprinklers are required. Future pipeline projects may need to sized to support this flow.

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**3.0 EXISTING SERVICE DEMANDS**

The KID services approximately 600 customers with a population of approximately 1,450. Service sizes range from 3/4" to 2". All services within the District are residential with the following exceptions:

- High Point Academy
- Magic Growers
- Los Angeles County Fire Station No. 66
- Pasadena Church of Christ
- Equestrian Center

The KID produces water from two wells and several tunnels. The 2006-2007 production from those sources is shown in Table 3-1.

**TABLE 3-1**  
**TUNNEL AND WELL PRODUCTION DELIVERED TO DISTRIBUTION SYSTEM 2006-2007**

Source	2006-2007 Production
K-3 Well	860.1 acre-feet*
Wilcox Well	70.2 acre-feet
High and Low Pressure Tunnels	131.0 acre-feet
Far Mesa Tunnel	13.1 acre-feet
House Tunnel	26.5 acre-feet
Eucalyptus Tunnel	44.6 acre-feet
Delores Tunnel	83.6 acre-feet
<b>TOTAL</b>	<b>1229.0 acre-feet</b>

\*Includes production of wholesale water sold to the City of Pasadena.

Additional production from tunnels is delivered for spreading in the Raymond Basin. Water delivered for spreading can be recovered by the District by increased pumping allotments or can be sold to other water purveyors. In 2006-2007, water delivered for spreading by the KID amounted to 202 acre-feet. The sources of this water in a particular year can include the High and Low Pressure Tunnels, the Long Tunnel, Delores Tunnel, Diversion Tunnel, Falls Tunnel, Winifred Tunnels, Tent Tunnel, and surface runoff from watershed owned by the District into the Glen Wash, Kinneloa Canyon Debris Basins and the Sierra Madre Villa Debris Basin.

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**4.0 FUTURE DEVELOPMENT**

**4.1 *General***

A report dated July 2, 1990 prepared for the KID by ASL Consulting Engineers identified a potential for 95 new dwelling units within the KID boundaries. The report identified 57 potential units which would be built by developers and another 38 units which would most probably be constructed as single units and not part of a development project. Since that time all major development work has been completed except for a potential development of 8-12 homes in the Doyne Road area as described below and the building or re-building of approximately 25 homes on individual vacant lots.

**4.2 *Doyne Road Development***

Hydraulic studies were completed for a potential development (Tract no. 44323) that is planned to be constructed in the south central area of the KID. The new tract would be served from the existing Holly/Sage Zone. The development requires the grading of 8-12 undeveloped lots ranging in size from 0.60 acres to 3.0 acres. Total area is approximately 13-18 acres depending on the final development plan. Water system improvements for this tract would include new distribution and transmission mains and a new booster pump station at the Wilcox Reservoir. The status of this project is uncertain at the present time.

**4.3 *Potential Future Well Sites***

The KID has a few potential future water source well sites within the District boundaries. The Equestrian Center north of New York Drive was acquired by Los Angeles County and incorporated into the Eaton Canyon Natural Area. The park status will allow for a well site for the District. The area of Wilcox Canyon, north or south of the Wilcox Reservoir also offers potential for a future well site.

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**5.0 CAPACITY CHARGE IMPROVEMENT FEE**

Improvements were made to the KID water system during the Dove Creek Development in 1987-1990. These improvements included improvements to the K-3 Well, Eucalyptus Reservoir, and piping in New York Drive. At the time of these improvements, the KID decided to build in reserve system capacity and redundancy beyond that required by the Dove Creek Development. Because the cost of the improvements was beyond what was required by the Dove Creek Development, the KID funded the marginal increase of the cost of the improvements beyond the Dove Creek Development requirements.

To recover the cost of the reserve capacity, the Board of Directors of the KID in 1990 instituted a Capacity Charge Improvement Fee on all future development in the District. The fee is \$3,000.00 per lot and is only charged for existing or newly created lots that do not have an existing water service. This fee is in addition to reimbursement for the cost of installing the new water service.

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**6.0 SERVICE DEMANDS**

**6.1 *Existing Service Demands***

Average day and maximum day service demands are based on water delivery records for the drought year (September 1990 – September 1991). Average day demand is the total annual water delivered as recorded by the individual customer water meters averaged over 365 days per year. Maximum day demand is the maximum day total water delivered, averaged over 24 hours. Maximum day delivery data is not available for individual customer water meters. Customer water meter demand is only recorded monthly. Individual pumping facility production and reservoir levels are recorded daily at roughly the same time each day. Individual facility records are used to determine maximum day total water delivery. To establish a comparison between average day and maximum day demands it is necessary to compare average day and maximum day demands of the same representative service area. Average day and maximum day data is available for the total Holly and East Tank service area.

The record data for this service area indicates the following:

- 237 services
- 189 total acres
- Annual delivery of 134,990 billing units
- Maximum day delivery (7/29/1990) of 1,029 billing units

Average Day Demand

$$\frac{134,990 \text{ B.U.}}{189 \text{ Acre/Year}} \times \frac{749 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Year}}{365 \text{ Days}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \frac{1.02 \text{ Gal/Min}}{\text{Acre}}$$

OR:

$$\frac{134,990 \text{ B.U.}}{237 \text{ Services}} \times \frac{749 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Year}}{365 \text{ Days}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \frac{0.81 \text{ Gal/Min}}{\text{Service}}$$

Maximum Day Demand

$$\frac{1,029 \text{ B.U.}}{189 \text{ Acre/Day}} \times \frac{749 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \frac{2.83 \text{ Gal/Min}}{\text{Acre}}$$

OR:

$$\frac{1,029 \text{ B.U.}}{237 \text{ Services}} \times \frac{749 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \frac{2.26 \text{ Gal/Min}}{\text{Service}}$$

The ratio of the maximum day demand over the average day demand is the maximum day factor. For the existing Holly and East Tank Zone, the maximum day factor is as follows:

$$\frac{2.83}{1.02} = 2.77$$

Existing service demands for the number of services in 2007 for each zone were based on the calculated average day and maximum day demand factors for the Holly and East Tank Zone and are shown in Table 6-1.

**TABLE 6-1**  
**SERVICE DEMANDS BY ZONE IN THE**  
**KINNELOA IRRIGATION DISTRICT**

Service Zone	No. of Services	Average Day Demand 0.81 gpm/service (gpm)	Maximum Day Demand 2.26 gpm/service (gpm)
Eucalyptus	62	51	141
Holly/Sage	190	154	430
East	61	49	138
West*	25	33	90
Brown/Glen	70	56	159
Vosburg	192	156	432

\*Homes in this area are newly-constructed and average day demand is based on 1.3 gpm per acre and maximum day demand of 3.6 gpm per acre.

## 6.2 *Future Service Demands*

Future service demands for various zones in the KID system were calculated based on the number of existing services, the planned additional services and the estimated future customer service demands. Planned additional services in the KID service area have a higher potential for water use than the existing customer services. Planned additional services are estimated to be comparable to the Shaw Ranch Estate type properties. Shaw Ranch record data indicates the September 1990 – September 1991 annual demand for 24 active services, serving 16.94 acres was a total of 21,984 billing units. Average day demand for planned future services is calculated as follows:

$$\frac{21,984 \text{ B.U.}}{16.94 \text{ Acre/Yr}} \times \frac{748 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Year}}{365 \text{ Days}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \frac{1.85 \text{ gpm}}{\text{Acre}}$$

OR:

$$\frac{21,984 \text{ B.U.}}{24 \text{ Services}} \times \frac{748 \text{ Gal.}}{\text{B.U.}} \times \frac{1 \text{ Year}}{365 \text{ Days}} \times \frac{1 \text{ Day}}{1,440 \text{ Min.}} = \underline{1.30 \text{ gpm}} \text{ Service}$$

Maximum day demand for planned future services is the average day demand multiplied by the developed maximum day factor as follows:

$$1.85 \text{ gpm/acre} \times 2.77 = 5.12 \text{ gpm/acre}$$

OR:

$$1.30 \text{ gpm/service} \times 2.77 = 3.60 \text{ gpm/service}$$

For master planning and calculation of future system demands, 5.12 gpm/acre or 3.60 gpm/service will be used to calculate future service demands per zone. Table 6.2 shows the future service demand of the potential new services by zone.

**TABLE 6-2**  
**FUTURE SERVICE DEMANDS BY ZONE IN THE**  
**KINNELOA IRRIGATION DISTRICT**

<b>Service Zone</b>	<b>No. of Future Services</b>	<b>Average Day Demand 1.3 gpm/service (gpm)</b>	<b>Maximum Day Demand 3.6 gpm/service (gpm)</b>
Eucalyptus	1	1.3	3.6
Holly/Sage	16	21.0	58.0
East	1	1.3	3.6
West	0	0.0	0.0
Brown/Glen	8	11.0	29.0
Vosburg	5	7.0	18.0

Table 6-3 shows the sum of the water demand for existing services and the potential new services.

**TABLE 6-3**  
**TOTAL FUTURE SERVICE DEMANDS BY ZONE**  
**IN THE KINNELOA IRRIGATION DISTRICT**

<b>Service Zone</b>	<b>Total Services</b>	<b>Average Day Demand (gpm)</b>	<b>Maximum Day Demand (gpm)</b>
Eucalyptus	63	83	227
Holly/Sage	206	269	742
East	62	81	224
West*	25	44	119
Brown/Glen	78	101	281
Vosburg	197	254	702

\*West Tank service demand based on 1.85 gpm/acre average day and 5.12 gpm/acre maximum day demands and a 23.3 acre service area.

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**7.0 SYSTEM IMPROVEMENTS**

**7.1 *General***

The KID was formed in 1953. Many of the distribution and transmission pipelines predate 1953 and are nearing the end of their useful service life. For the purposes of this plan, the useful service life of the pipelines is set at 50 years. Development of excessive numbers of leaks and/or reduced pipeline capacity are two of the indications of pipelines at the end of their useful service life.

Originally, water mains in the KID provided domestic supply plus a fire flow of 750 gpm. The existing distribution system meets the original fire flow design criteria. The firestorms of October 1993 exposed the KID pipeline delivery capacity weakness. As a result, the KID adopted a Fire Preparedness Policy which requires new water mains to be sized to provide 20 gpm per service, plus a fire flow of 1,250 gpm each at two fire hydrants simultaneously.

As the population of the KID has grown over the years, the demands placed upon the entire system, including distribution and transmission mains, water sources, reservoirs, and pump stations have encroached upon the ability of the system to meet the required demands. Population growth, plus the need for increased fire flow to provide adequate fire protection will require the KID to construct improvements to the KID water system.

**7.2 *Piping***

In April 1996, ASL Consulting Engineers conducted a study for the KID to identify water main improvements required to increase water system capabilities to deliver domestic demands plus 1,250 gpm fire flows. The results of the study are shown in Table 7-1.

All pipes that develop chronic leaks should be replaced to decrease waste of water and to achieve overall lower operational costs.

In addition, pipes which have exceeded their useful life should be replaced. It can be shown that replacing older pipelines will result in lower long-term operational costs. Pipelines which have become inaccessible due to development or are traversing private property in easements should also be replaced if practical and/or possible. Pipelines should be upsized where required to meet the fire preparedness goals. Upsizing is to be determined by hydraulic modeling and verified by field-testing.

Projects that are listed in Table 7-1 provide a remedy for the following conditions:

- Chronically leaking pipes.
- Pipe requiring upgrade to meet domestic demand and fire preparedness goals.
- Piping which has exceeded its useful service life of 50 years.
- Piping which has become inaccessible due to development or traverses private property in easements.

**TABLE 7-1  
REQUIRED WATER MAIN REPLACEMENTS  
TO MEET 1,250 GPM FIRE FLOW AND  
450 FEET VEHICULAR DISTANCE**

Main Size	Description	
	From	To
8"	1900 Windover Road	Corner of 2090 & 2060 Villa Heights Road
8"	Intersection Larmona Drive & Kinneloa Mesa Rd.	1908 N. Kinneloa Cano Rd.
12"	New Connection to Vosburg Reservoir	
16"	2014 Windover Road	Sierra Madre Villa Avenue
10"	Sierra Madre Villa Avenue and Windover Road	Vosburg Street
8"	Intersection of Sierra Madre Villa & Villa Mesa Rd.	In Front of 3336 Villa Mesa Rd.
8"	Intersection of Meyerloa & Kinneloa Mesa Rd.	In Front of 2985 Meyerloa Ln.
8"	Intersection of Kinneloa Mesa Rd. & Clarmeya Ln.	In Front of 2924 Clarmeya Ln.
8"	Intersection of Kinneloa Mesa Rd. & Lindaloe Ln.	In Front of 2925 Lindaloe Ln.
8"	Intersection of Kinneloa Mesa Rd. & Doyne Rd.	In Front of 3069 Doyne Rd.
8"	Country Lane	Southeast Corner of 1747 Country Lane
12"	Glen Reservoir	Intersection Villa Highlands & Sierra Madre Villa Includes Slope from Pasadena Glen to Barhite
8"	Kinclair Dr.	Behind 2150 Kinclair Dr.
8"	Kinclair Dr.	#4 Cricklewood Path

Main Size	Description	
	From	To
8"	Kinneloa Canyon Rd.	Behind 2044 Piccadilly Ln.
8"	Intersection of Vosburg St. & Lower Pasadena Glen Rd.	In Front of 1658 Pasadena Glen Rd.

### 7.3 *Booster Pump Stations*

#### 7.3.1 Existing Booster Pump Stations

The KID presently has sufficient booster pump capacity to provide for domestic demands. The 1,250-gpm-fire flow requires supplementing booster station flow with gravity flow from reservoirs.

There are booster pump facilities located at the Eucalyptus Reservoir, Holly Tanks, Sage Tank, Wilcox Reservoir, Glen Reservoir and at the Vosburg Reservoir. The booster pumps at the Eucalyptus Reservoir were replaced with high efficiency vertical turbine units in 2002 as part of the system improvements needed for the Kinneloa Ridge Development.

The booster pump at the Holly Tank is a horizontal, split case pump. A preferred installation would be high efficiency vertical turbine units set in cans.

The booster pump at the Vosburg Reservoir is a submersible, centrifugal pump. A preferred installation would be high efficiency vertical turbine unit, but a replacement 25 hp submersible pump that was installed in 2006 is providing increased flow and efficiency as compared to the previous 20 hp unit.

Table 7-2A compares the required booster pump station capabilities with existing booster pump station capabilities. Required booster pump station capabilities will supply maximum day demand with an off-peak 16-hour maximum pumping period.

**Required Booster Pump Capacity Calculations** -- Each booster facility must provide capacity to serve all zones in the system above the booster station.

- Eucalyptus Booster Station must provide capacity to serve Holly/Sage Zone, West Zone, and ½ of the East Zone. Flow rates required are from Table 6-3.

$$\text{Eucalyptus Booster Capacity} = \frac{24}{16} (738 + 119 + \frac{220}{2}) = 1,451 \text{ gpm}$$

- Holly Booster Station must provide ½ of the East Zone.

$$\text{Holly Booster Capacity} = \frac{24}{16} \frac{(220)}{2} = 165 \text{ gpm}$$

- Vosburg Booster capacity is 285 gpm.
- Glen Booster must supply Vosburg Zone and ½ of East Zone.

$$\text{Glen Booster Capacity} = \frac{24}{16} \frac{(702+119+220)}{2} = 1,397 \text{ gpm}$$

- Sage Booster supplies the West Zone only.

$$\text{Sage Booster Capacity} = \frac{24}{16} (119) = 179 \text{ gpm}$$

- Wilcox Booster must supply Vosburg Zone, Brown/Glen Zone and ½ of East Tank Zone.

$$\text{Wilcox Booster Capacity} = \frac{24}{16} \frac{(702+277+220)}{2} = 1,634 \text{ gpm}$$

**TABLE 7-2A**  
**COMPARISON OF REQUIRED BOOSTER PUMP CAPACITIES**

<b>Booster Station</b>	<b>Required Future Pump Capacities (gpm)</b>	<b>Existing Capacity (gpm)</b>	<b>Additional Capacity Required (gpm)</b>
Eucalyptus	1,451	1,600	0
Holly	165	400	0
Vosburg	165	285	0
Glen	1,397	345	1,052
Sage	179	400	0
Wilcox Reservoir	1,634	650	984

Table 7-2B shows the proposed concept for increasing booster pump station efficiencies and/or capacities.

**TABLE 7-2B**  
**REQUIRED BOOSTER IMPROVEMENTS**

Booster Station	Description
Glen	Increase booster pump capacity.
Holly	Replace existing pumps with vertical turbine pumps in cans.
Wilcox Reservoir*	Increase booster pump capacity.

\*Pipeline upgrades required to reduce pumping head.

### 7.3.2 Proposed Booster Pump Stations

The Doyme Road Development if constructed will require additional booster pump capacity at the Wilcox Reservoir. The cost of additional booster pump capacity will be provided by the developer. The necessary improvements have already been made at the Eucalyptus Booster Pump Station in conjunction with the Kinneloa Ridge Development. However, two new 50 HP booster pumps at the Wilcox Reservoir will be needed to supply the Holly Tanks.

## 7.4 *Tunnels*

### 7.4.1 High Pressure Tunnel

The High Pressure Tunnel pipeline is currently in service and supplies water to the Holly Tanks or the West Tank. The High Pressure Tunnel pipeline was damaged during the firestorms of October 1993. Additional damage occurred from mudslides during the rainy season of subsequent years. In 1994, the High Pressure Tunnel pipeline was repaired with FEMA funding. In the winters of 1994-95 and 2004-05, the High Pressure Tunnel pipeline was again damaged by mudslides. The KID applied for FEMA funding as a result of the disaster declaration after the 2004-2005 storms and permanent repairs were completed in 2006 using a combination FEMA funds and KID funds.

### 7.4.2 Low Pressure Tunnels

Pipelines delivering water from the Low Pressure Tunnels to the Holly Tanks have been out of service at various times since 1993. Both low pressure tunnel pipelines were damaged during the fire storms of October 1993. Further damages occurred from mudslides during the rainy seasons of subsequent years. In 1994, the lower Low Pressure Tunnel pipeline was replaced using FEMA funding. In subsequent rainy seasons, the tunnel has since been buried by mudslides. The

storms of 2004-2005 further damaged the lines. The KID applied for FEMA funding to repair the lines in order to take advantage of the low cost water supply. The upper low pressure tunnel pipeline was replaced and put back in service in 2006. The lower tunnel was excavated to the tunnel face, but further work has been suspended due to funding and safety concerns.

7.4.3 House Tunnel

The House Tunnel pipeline was also damaged in the 2004-2005 storms. The damaged section was replaced with flexible hose suspended from a cable and the rest of the pipeline was inspected and repaired at two locations. Since the majority of the pipeline is galvanized steel and was installed decades ago, it is expected that the pipeline will need to be replaced within the next 20 years even if there is no further storm damage.

7.4.4 Delores Tunnel

The Delores Tunnel was out of service between 1979 and 2001 due to rockslide and rain storm damage to the delivery pipeline. Although this pipeline was replaced in 2001 with flexible hose suspended from a cable for much of its length, it is still vulnerable to damage in the future. Therefore it is expected that portions will need to be repaired or replaced within the time frame of this master plan.

The required tunnel maintenance and improvements are listed in Table 7-3.

**TABLE 7-3  
REQUIRED TUNNEL MAINTENANCE AND IMPROVEMENTS**

Tunnel	Description
High Pressure	Periodically inspect pipeline for potential damage from landslides. Inspect for leaks and repair or replace pipeline as needed.
Low Pressure	Periodically inspect pipeline for potential damage from landslides. Continue excavation of lower tunnel and complete new tunnel face and pipeline between the tunnel and the injector if tunnel flow is significant.
House	Periodically inspect pipeline for potential damage from landslides. Inspect for leaks and repair or replace pipeline as needed.
Delores	Periodically inspect pipeline for potential damage from landslides. Inspect for leaks and repair or replace pipeline as needed.

## 7.5 *Other Improvements*

### 7.5.1 General

Within Section 7 of this master plan, necessary improvements have been identified which would connect tunnel water supplies to the system and improve system hydraulics in order to meet a 1,250 gpm fire flow for two hours. Also, improvements to reservoirs have been identified which are necessary to meet a minimum 1,250 gpm fire flow for two hours plus domestic demands. Finally, developer financed improvements have been identified which are necessary to provide fire flow and domestic supply to the proposed developments. This section will examine other necessary system improvements.

### 7.5.2 Additional Improvements

The KID has identified other capital improvements necessary to upgrade existing facilities to provide increased operational efficiency, greater margins of safety, address emergency preparedness issues and to decrease maintenance costs. Additional capital improvements are shown in Table 7-4.

**TABLE 7-4  
ADDITIONAL IMPROVEMENTS AS IDENTIFIED BY THE  
KINNELOA IRRIGATION DISTRICT**

<b>Description</b>
Upgrade SCADA hardware, software and communications radios to prevent obsolescence [OPS]
Provide power at the Brown Reservoir and install earthquake sensors and automatic shutoff valves and add telemetry equipment to the SCADA system to monitor conditions at this reservoir. [EP and OPS]
Replace Uniclor with Chortec chlorine generators. [OPS]
Purchase 50 kw trailer-mounted generator to be used at Glen Reservoir and Sage Tank [EP]
Purchase 250 kw trailer-mounted generator to be used and Wilcox and K-3 [EP]
Purchase 50 kw generator for office [EP]
<b>EP= Emergency Preparedness</b> <b>OPS= Operations Improvement</b>

**KINNELOA IRRIGATION DISTRICT**  
**WATER MASTER PLAN**

**8.0 Planned Maintenance Program**

The KID has developed a Planned Maintenance Program for the KID’s water distribution system which extends the life of existing capital improvements. These items of work include pump overhauls, motor overhauls and replacements, reservoir recoating, reservoir roof repairs, upgrade interconnections with other agencies, purchase of small tools, upgrading various facilities, and office improvements. The items of work identified in this section are typically referred to as operations and maintenance items but due to relatively high cost they need to be budgeted in the same manner as capital improvements. Planned maintenance items identified by the staff are listed in Table 8-1 and are not in priority order.

**TABLE 8-1**  
**PLANNED MAINTENANCE PROGRAM ITEMS**

Item	Description	Est. Cost
1	Install Eye Wash Stations at six locations per JPIA request	\$9,000
2	Glen Reservoir - Install Polypropylene Liner – Add protective sealer to roof to extend cap sheet	\$ 30,000
3	Upgrading of Fire Hydrant Heads (\$ 500.00 to \$2,500 ea.)	\$34,000
4	Tunnel Maintenance (avg. \$ 7,000 per year) (amount is for a 10 year period)	\$70,000
5	Valve Maintenance (replacement cost averages \$2,500 per valve)	\$25,000
6	Vosburg Reservoir – Add protective sealer to roof	\$ 15,000
7	Upgrade of Interconnections with the City of Pasadena	\$75,000
8	Office Maintenance & Improvements: 1. Replace carpet and do interior painting; 2. Add storage shed to existing concrete pad	\$40,000
9	Brown Reservoir – Roof – add protective sealer to extend cap sheet -- Install liner	\$30,000
10	Holly Tanks Erosion Control (All Phases)	\$140,000
11	Holly Boosters - Paint Booster Station	\$1,000
12	Glen Well – Remove & Replace protective wood cover with metal cap	\$ 6,000
13	Wilcox Reservoir – Pump stand/other repairs - permanent connections for portable pump	\$25,000
14	Vosburg Reservoir - Expand and repave asphalt driveway and east side of reservoir	\$40,000
15	Service Area – Emergency prep. - install or Replace “Blue Dot” Markers for Fire Hydrants	\$1,000
16	Wilcox Well – Modify dump line to dispose of water on site	\$1,000
	<b>Total</b>	<b>\$542,000</b>

**KINNELOA IRRIGATION DISTRICT**  
**WATER MASTER PLAN**

**9.0 PROJECT PRIORITIES**

Project priorities are based upon cost-benefit considerations. Projects that will realize higher revenues per unit cost are given a higher priority than projects that will realize lower revenue, or no revenue, per unit dollar spent. Priorities are also based upon increased fire protection, increased operational efficiencies and lower maintenance costs. Projects are listed in Table 9-1 in order of decreasing priority in each project category.

**TABLE 9-1**  
**CAPITAL IMPROVEMENT PROJECTS LISTED BY PRIORITY**

<b>Priority</b>	<b>Project</b>	<b>Description</b>
1	Pipeline	In Front of 3136 Mesaloe Lane to Intersection of Mesaloe Lane and Kinneloa Mesa Road
2	Pipeline	In Front of 2985 Meyerloa Lane to Intersection of Meyerloa Lane and Kinneloa Mesa Road
3	Pipeline	Intersection of Kinneloa Mesa Road and Clarmeya Lane to in Front of 2924 Clarmeya Lane
4	Pipeline	Intersection of Kinneloa Mesa Road and Lindaloe Lane to in Front of 2925 Lindaloe Lane
5	Pipeline	Intersection of Kinneloa Mesa Rd. & Doyne Road to 3069 Doyne Rd.
6	Pipeline	Replace service main in Edgecliff Lane from Villa Knolls Drive to cul-de-sac
7	Pipeline	Replace service main in East Fairpoint Street from Sierra Madre Villa Avenue to the last service
8	Pipeline	Country Lane to Southeast Corner of 1747 Country Lane
9	Pipeline	Kinclair Drive to rear of 2150 Kinclair Drive
10	Pipeline	Kinclair Drive to #4 Cricklewood Path
11	Pipeline	Kinneloa Canyon Road to rear of 2044 Piccadilly Lane
12	Pipeline	Intersection of Vosburg Street and lower Pasadena Glen Road to front of 1658 Pasadena Glen Road
13	Pipeline	1900 Windover Road to Corner of 2090 and 2060 Villa Heights Road
14	Pipeline	1908 N. Kinneloa Cyn. Rd. to intersection of Larmona Drive & Kinneloa Mesa Road (Doyne Road project)
15	Pipeline	New Connection to Vosburg Reservoir
16	Pipeline	Sierra Madre Villa Avenue to 2014 Windover Road
17	Pipeline	Windover Road in Sierra Madre Villa Avenue to Vosburg Street
18	Pipeline	Replace service main from Villa Knolls Drive to end of Hartwood Point Drive
19	Pipeline	Replace service main in Villa Mesa Drive from Sierra Madre Villa Avenue to 3336 Villa Mesa Drive

<b>Priority</b>	<b>Project</b>	<b>Description</b>
20	Pipeline	From Glen Reservoir to intersection of Villa Highlands and Sierra Madre Villa. Includes slope from Pasadena Glen to Barhite
21	Pipeline	West Tank to East Tank
22	Pipeline	Replace water main from Wilcox Well to Wilcox Reservoir
1	Tunnel	Construct permanent replacement pipeline section from High Pressure Tunnel to Holly and/or Sage Reservoir
2	Tunnel	Construct pipeline from lower Low Pressure Tunnel to junction with High Pressure Tunnel Pipeline north of Kinneloa Debris Basin
1	Booster	Replace the existing 50 HP oil lubricated booster pump at Wilcox Reservoir with a water lubricated pump
2	Booster	Install additional booster pump and new electrical (at Wilcox Reservoir). (for Doyne Road project)
3	Booster	Replace existing booster pump at Glen Reservoir with a higher capacity unit
4	Booster	Replace existing booster pumps at Holly Tank with vertical turbine pumps in a can (Not needed if West Tank to East Tank pipeline is constructed)
1	Other (Telemetry)	Provide additional telemetry to SCADA system for Brown Reservoir
2	Other (Reservoir)	Install earthquake sensor and automatic shutoff valve at Brown Reservoir
3	Other (Emergency Preparedness)	Purchase 50 kw trailer-mounted generator for Glen Reservoir
4	Other (Emergency Preparedness)	Purchase 250 kw trailer-mounted generator for Wilcox and K-3
5	Other (Emergency Preparedness)	Purchase 50 kw generator for office

**KINNELOA IRRIGATION DISTRICT  
WATER MASTER PLAN**

**10.0 COST ESTIMATES FOR REQUIRED IMPROVEMENTS**

**10.1 *Pipelines***

Cost estimates for pipeline replacements as described in Section 7.1, are taken from a study prepared by ASL Consulting Engineers for the KID in April 1996. Cost estimates were up-dated in July 2002 and adjusted for inflation and current construction costs in 2007. Nearly all of the replacement pipelines are needed to meet 1,250 gpm fire flow and 450 feet vehicular distance requirements. Category definitions are as follows: EP-Emergency Preparedness; PM-Preventive Maintenance; OPS- Operational Improvement. The estimated costs are shown in Table 10-1. All costs are in 2007 dollars. In order for the district to get the best prices for these projects, the projects should be bundled in dollar amounts not less than \$150,000.

**TABLE 10-1  
PIPING IMPROVEMENTS COST ESTIMATES**

Priority	Main Size	Description		Category	Cost
		From	To		
1	8"	Intersection of Meyerloa Ln. & Kinneloa Mesa Rd.	Front of 2985 Meyerloa Ln.	EP/PM 425 ft.	\$70,000
2	8"	Intersection of Kinneloa Mesa Rd. & Clarmeya Ln.	Front of 2924 Clarmeya Ln.	EP/PM 230 ft.	\$50,000
3	8"	Intersection of Kinneloa Mesa Rd. & Lindaloe Ln.	Front of 2925 Lindaloe Ln.	EP/PM 425 ft.	\$70,000
4	8"	Intersection of Kinneloa Mesa Rd. & Doyne Rd.	Front of 3069 Doyne Rd. (Doyne Rd. Project)	EP/PM 380 ft.	\$50,000
5	8"	Edgecliff Lane from Villa Knolls	End of Cul-de-sac	EP/PM 700 ft.	\$80,000
6	4"	Last service on Fairpoint	Sierra Madre Blvd.	PM 950 ft.	\$84,000
7	8"	Country Lane	Southeast Corner of 1747 Country Lane	EP 270 ft.	\$28,000
8	8"	Kinclair Dr.	Rear of 2150 Kinclair Dr.	EP 250 ft.	\$38,000

Priority	Main Size	Description		Category	Cost
		From	To		
9	8"	Kinclair Dr.	#4 Cricklewood Path	EP 400 ft.	\$50,000
10	8"	Kinneloa Canyon Rd.	Rear of 2044 Piccadilly Ln.	EP 250 ft.	\$38,000
11	8"	Intersection of Vosburg St. & Lower Pasadena Glen Rd.	Front of 1658 Pasadena Glen Rd.	EP/PM 350 ft.	\$48,000
12	8"	1900 Windover Road	Corner of 2090 and 2060 Villa Heights Road	EP 1840 ft.	\$188,000
13	8"	Larmona Drive & Kinneloa Mesa Road	1908 N. Kinneloa Canyon Rd.(Doyne Rd. Project)	EP	\$204,000
14	12"	New Connection at Vosburg Reservoir		EP/PM	\$26,000
15	16"	Sierra Madre Villa at Windover Road	Vosburg Reservoir	EP/PM 1000 ft.	\$184,000
16	10"	Windover Road & Sierra Madre Villa	Vosburg Street	EP/PM 1010 ft.	\$134,000
17	8"	Villa Knolls Drive	End of Harwood Point	EP/PM 1960 ft.	\$204,000
18	8"	Sierra Madre Villa	3336 Villa Mesa	EP/PM 300 ft.	\$42,000
19	12"	Glen Reservoir	Intersection Villa Highlands & Sierra Madre Villa Includes Slope from Pasadena Glen to Barbite	EP/OPS 3100 ft.	\$442,000
20	10"	West Tank	East Tank	EP/OPS 5000 ft.	\$1,150,000
21	10"	Wilcox Well	Wilcox Reservoir Line	EP/OPS/PM 500 ft.	\$60,000
<b>SUBTOTAL</b>					<b>\$2,778,000</b>
Engineering, Design, and Planning					\$200,000
Construction Management and Inspection					\$150,000
<b>SUBTOTAL</b>					<b>\$350,000</b>
<b>TOTAL PIPELINE PROJECTS</b>					<b>\$3,128,000</b>

## 10.2 *Booster Pump Station Improvements*

Cost estimates for installation of booster pump improvements required for the Doyne Road Development (Tract 44323) were developed in a report prepared by ASL Consulting Engineers for the KID and dated June 3, 1996. Cost estimates were up-dated

in February 2002 but are not included in the KID capital project budget as they will be constructed at the developer's expense if the developer proceeds with the project.

Cost estimates for installation of other booster pump improvements were developed in a report prepared by ASL Consulting Engineers for the KID and dated November 3, 1995. Cost estimates were up-dated in February 2002. Although some of these projects are being deferred because of the purchase of portable pumps, they are listed for planning purposes in the event that the portable pumps are used for other purposes. Costs for improvements to the booster pumps at the Wilcox Reservoir, Glen Reservoir, Holly Tank and the Vosburg Reservoir are included in the KID capital project budget. Costs include engineering, inspection, management and contingency. All costs were updated in 2002 and have been adjusted for inflation to 2007 dollars.

Booster Pump Station Improvements are shown in Table 10-2.

**TABLE 10-2  
BOOSTER PUMP STATION IMPROVEMENTS**

Priority	Description	Estimated Costs
N/A	Construct new 50 HP booster pump at Wilcox Reservoir (Tract 44323)	By Developer
1	Replace the existing 50 HP oil lubricated booster pump at Wilcox Reservoir with a water-lubricated pump.	\$10,000.00
2	Construct improvements to the Booster Pump at Glen Reservoir	\$60,000.00*
3	Construct improvements to the Booster Pump at Vosburg Reservoir	\$60,000.00*
4	Construct improvements to the Booster Pumps at Holly Tanks (Not needed if West Tank to East Tank pipeline is constructed)	\$60,000.00*

\*Deferred by purchase of portable pumps

### 10.3 *Tunnel Improvements*

The pipeline from the upper Low Pressure Tunnel face to the new High/Low combiner was replaced in 2006. The existing High Pressure pipeline was not replaced but the line was suspended from a new cable to the combiner to protect it from landslides. The lower Low Pressure Tunnel pipeline was not replaced since there was no water exiting that tunnel at the time of the construction work in 2006. The combined High/Low Pressure pipeline from the combiner to the Kinneloa Canyon West Debris Basin may also need to be replaced in future years. The cost estimates for the remaining pipelines are shown in Table 10-3.

**TABLE 10-3  
TUNNEL IMPROVEMENTS**

<b>Priority</b>	<b>Description</b>	<b>Cost Estimate</b>
1	Replace the combined High/Low Pressure Tunnel Pipeline from combiner to Kinneloa Canyon West Debris Basin	\$200,000.00
2	Replace the lower Low Pressure Tunnel Pipeline	\$ 61,000.00
3	Replace other tunnel pipelines as required	\$100,000.00

10.4 *Costs of Other Improvements*

Cost estimates for the construction or purchase of other improvements are based upon estimates by KID staff and are shown in Table 10-4.

**TABLE 10-4  
OTHER IMPROVEMENTS**

<b>Priority</b>	<b>Description</b>	<b>Estimated Cost</b>
1	Upgrade SCADA hardware, software and communications radios to prevent obsolescence	\$50,000
2	Install solar power, SCADA, earthquake sensor and automatic shutoff valve at Brown Reservoir.	\$50,000
3	Replace Uniclor with Chortec chlorine generators	\$13,000
4	Purchase 50 kw portable generator for Glen Reservoir	\$18,000
5	Purchase 250 kw portable generator for Wilcox and K-3	\$40,000
6	Purchase 50 kw generator for office	\$18,000

10.5 *Total Costs*

Table 10-5 shows total estimated costs for all necessary improvements as identified in this master plan. Cost estimates include design, inspection, construction management and contingency costs. Improvements identified to be installed and financed by developers are not included. Costs for the items identified as other work were developed for this master plan from cost estimates by the KID staff.

**TABLE 10-5**  
**TOTAL ESTIMATED COSTS**

<b>No.</b>	<b>Description</b>	<b>Cost Estimate</b>
1	Pipeline Improvements	\$3,128,000
2	Pump Station Improvements	\$190,000
3	Tunnels	\$321,000
4	Other Improvements	\$189,000
5	Planned Maintenance (from Section 8)	542,000
	<b>TOTAL</b>	<b>\$4,370,000</b>

# APPENDIX

**EXHIBIT I**  
**RESERVOIR IMPROVEMENTS**

## RESERVOIR IMPROVEMENTS

Cost estimates for District funded improvements to reservoirs are not included in the Water Master Plan. Should funding become available consideration of these projects will be re-evaluated.

### Existing Reservoirs

In April 1996, ASL Consulting Engineers conducted a study for the KID to identify reservoir improvements, which would have to be made to comply with the KID Fire Preparedness Policy. The results of that study indicate that additional capacity is required at the Holly Tanks, Glen Reservoir and East Tank.

Table I compares the required future reservoir storage capacity with the existing reservoir capacity for each service zone. Wilcox Reservoir is a forebay for the Wilcox Well and is not included. Required capacity is the sum of maximum day demand, operational capacity, and fire flow.

**TABLE I  
REQUIRED RESERVOIR CAPACITY**

Reservoir	Maximum Day Demand (Gal.) *	Operational Capacity (Gal.) ****	Fire Flow (Gal.) **	Required Capacity (Gal.)	Existing Capacity (Gal.)	Additional Capacity Required (Gal.)
Eucalyptus Reservoir	308,160	77,000	300,000	685,160	180,000	505,160
Holly/Sage Tanks	702,720	176,000	300,000	1,178,720	525,000	653,720
East Tank	230,400	58,000	300,000	588,400	150,000	438,400
West Tank****	135,360	0***	300,000	435,360	500,000	0
Brown/Glen Reservoir	298,080	72,000	300,000	670,080	250,000	420,080
Vosburg Reservoir	643,680	161,000	300,000	1,104,680	1,250,000	0

- \* Maximum Day Demand = 60 min. x 24 hours x max day demand (gpm/service).
- \*\* Fire Flow = 1,250 gpm for 4 hours.
- \*\*\* Operational storage not required.
- \*\*\*\* West Tank Maximum Day Demand based on (gpm/acre).
- \*\*\*\*\* 25% of maximum day demand.

The proposed reservoir improvements are shown in Table II

**TABLE II**  
**PROPOSED RESERVOIR IMPROVEMENTS**

<b>Tank</b>	<b>Description</b>
Holly Tanks*	Remove both existing reservoir in two stages. Construct new concrete reservoir in two stages and miscellaneous site improvements. Increase existing Holly Tanks to provide total 1-MG storage.
East Tank	Site has 1 existing 0.15 MG reservoir. Add two additional 0.15 MG steel reservoirs and miscellaneous site improvements. Site limitations prevent construction of total required storage. Maximum day operation will require careful management of operational levels with potential of encroaching on peak pumping Edison rate.
Glen Reservoir**	Demolish existing 0.15 MG reservoir. Construct new 0.5 MG concrete reservoir and miscellaneous site improvements.
Eucalyptus Reservoir	Emergency connections, portable pumps and tunnel supply are considered to make up storage deficit.

\* Considers moving Holly Tanks to East Tank site.

\*\* Third priority because Glen Reservoir has back up in Vosburg Reservoir.

Cost estimates for District funded improvements to reservoirs were developed in a study by ASL Consulting Engineers for the KID and dated April 1996. The Estimated cost for improvements to Holly Tanks, East tanks, and Glen Reservoir are shown in Tables III, IV, and V respectively. All costs are in 1996 dollars.

**TOTAL ESTIMATED COSTS**

<b>No.</b>	<b>Description</b>	<b>Cost Estimate</b>
1	Holly Reservoir Improvements	\$612,000
2	East Tank Improvements	\$422,000
3	Glen Reservoir Improvements	\$624,000
	<b>Total Reservoir Improvements</b>	<b>\$1,658,000</b>

**Table III  
HOLLY RESERVOIR IMPROVEMENTS COST ESTIMATE**

<b>Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>
<b>PHASE I</b>					
1	1	L.S.	Mobilization/Demobilization	\$6,750.00	\$6,750.00
2	1	L.S.	Modify Existing Inlet/Outlet and Tunnel Well Piping	\$5,000.00	\$5,000.00
3	1	L.S.	Demolish and Remove West Reservoir	\$25,000.00	\$25,000.00
4	275	L.F.	Install Excavation Shoring, Entire Site	\$30.00	\$8,250.00
5	900	C.Y.	Excavate Entire Site	\$30.00	\$27,000.00
6	1	L.S.	Install Sub drain System	\$4,000.00	\$4,000.00
7	1	L.S.	Install Inlet/Outlet Piping	\$3,000.00	\$3,000.00
8	1	L.S.	Construct West Half of New Reservoir	\$200,000.00	\$200,000.00
9	1	L.S.	Test, Disinfect, and Place West Half of Reservoir in Service	\$2,000.00	\$2,000.00
<b>PHASE II</b>					
1	1	L.S.	Demolish and Remove East Reservoir	\$25,000.00	\$25,000.00
2	1	L.S.	Install Sub drain System	\$4,000.00	\$4,000.00
3	1	L.S.	Install Inlet/Outlet Piping	\$5,000.00	\$5,000.00
4	1	L.S.	Construct East Half of New Reservoir	\$200,000.00	\$200,000.00
5	1	L.S.	Test, Disinfect, and Place East Half of Reservoir in Service	\$2,000.00	\$2,000.00
6	200	C.Y.	Backfill and Remove Shoring	\$50.00	\$10,000.00
7	1	L.S.	Construct Site Improvements, A.C. Pavement, Landscaping and Irrigation, and Site Drainage Facilities	\$15,000.00	\$15,000.00
<b>SUBTOTAL</b>					<b>\$542,000.00</b>
Engineering Design and Planning					\$30,000.00
Soils Investigation					\$10,000.00
Environmental Documents					\$10,000.00
Construction Administration and Inspection					\$20,000.00
<b>SUBTOTAL</b>					<b>\$70,000.00</b>
<b>TOTAL PROJECT</b>					<b>\$612,000.00</b>

**Table IV**  
**EAST TANK IMPROVEMENTS COST ESTIMATE**

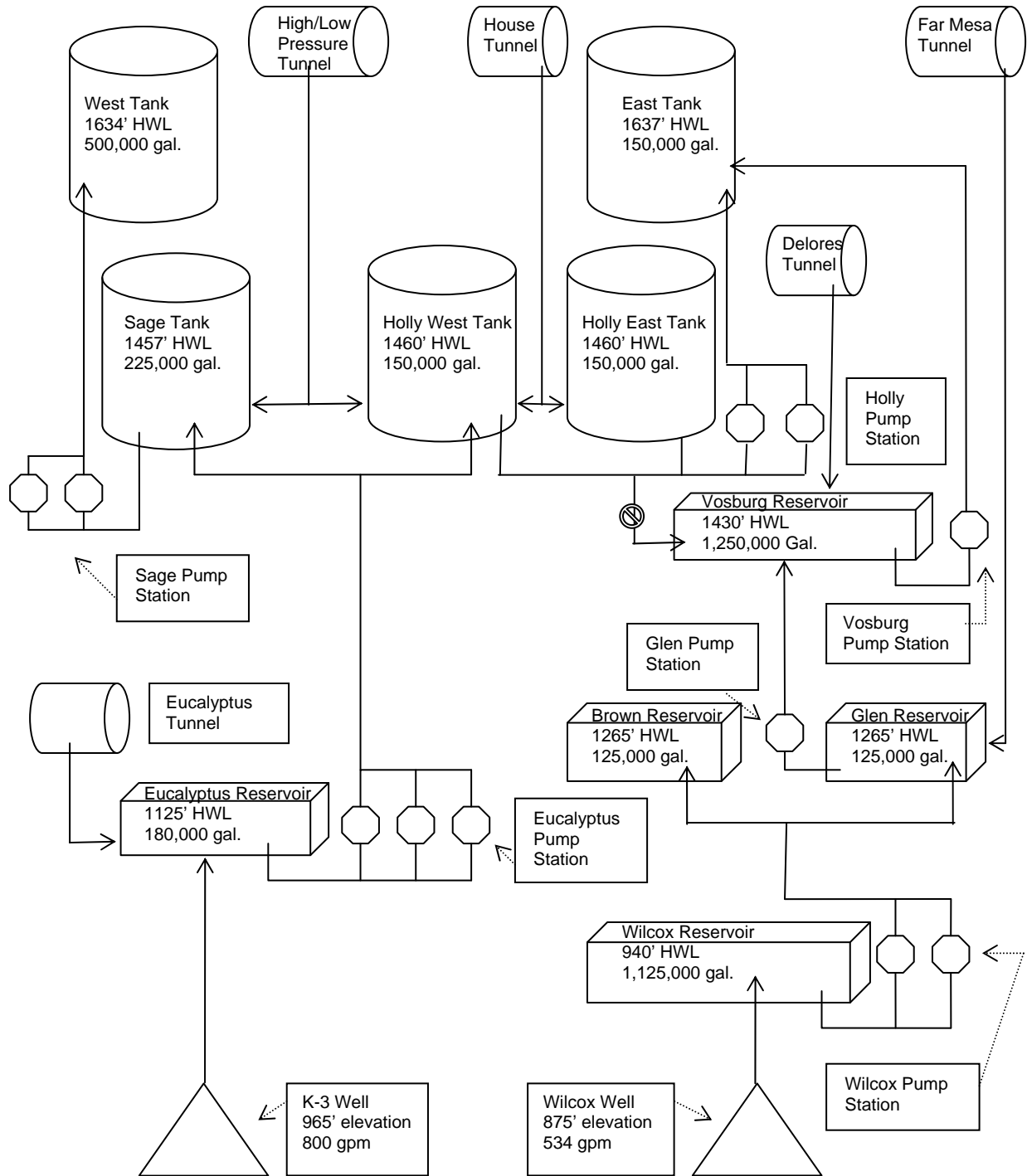
<b>Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>
1	---	L.S.	Mobilization/Demobilization	\$5,000.00	\$5,000.00
2	1,300	C.Y.	Excavation / Grading	\$50.00	\$65,000.00
3	---	L.S.	Access Road – Grading and Paving	\$22,000.00	\$22,000.00
4	2	EA.	Tank Footing and Oil Sand	\$15,000.00	\$30,000.00
5	---	L.S.	Sub drain System	\$10,000.00	\$10,000.00
6	---	L.S.	Slope Treatment	\$15,000.00	\$15,000.00
7	---	L.S.	Site Drainage	\$30,000.00	\$30,000.00
8	2	EA.	Tank Material and Construction	\$75,000.00	\$150,000.00
<b>SUBTOTAL</b>					<b>\$327,000.00</b>
Engineering Design and Planning					\$25,000.00
Soils Investigation					\$15,000.00
Environmental Documents					\$15,000.00
Construction Management and Inspection					\$40,000.00
<b>SUBTOTAL</b>					<b>\$95,000.00</b>
<b>TOTAL PROJECT</b>					<b>\$422,000.00</b>

**Table V**  
**GLEN RESERVOIR IMPROVEMENTS COST ESTIMATE**

<b>Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>
1	1	L.S.	Mobilization/Demobilization	\$6,000.00	\$6,000.00
2	1	L.S.	Temporary Relocation of Long Tunnel Pipeline	\$2,000.00	\$2,000.00
3	1	L.S.	Salvage Pump, Electrical, and Chlorination Equipment	\$6,000.00	\$6,000.00
4	1	L.S.	Demolish A.C. Pavement	\$2,000.00	\$2,000.00
5	1	L.S.	Demolish and Remove Existing Reservoir Structure and Appurtenances	\$35,000.00	\$35,000.00
6	300	L.F.	Install Excavation Shoring	\$30.00	\$9,000.00
7	1,900	C.Y.	Excavate Reservoir Pad	\$35.00	\$66,500.00
8	1	L.S.	Install Sub drain System	\$8,000.00	\$8,000.00
9	1	L.S.	Install Reservoir Inlet/Outlet and Drain Piping	\$5,000.00	\$5,000.00
10	1	L.S.	Construct Reservoir	\$350,000.00	\$350,000.00
11	1	L.S.	Test, Disinfect, and Place Reservoir in Service	\$3,000.00	\$3,000.00
12	1	L.S.	Backfill and Grade Site	\$7,000.00	\$7,000.00
13	1	L.S.	Install Chlorination, Pump, and Electrical Equipment	\$15,000.00	\$15,000.00
14	1	L.S.	Construct Site Improvements, A.C. Pavement, Landscaping, and Irrigation	\$10,000.00	\$10,000.00
<b>SUBTOTAL</b>					<b>\$524,500.00</b>
Engineering Design and Planning					\$45,000.00
Soils Investigation					\$10,000.00
Environmental Documents					\$15,000.00
Construction Management and Inspection					\$30,000.00
<b>SUBTOTAL</b>					<b>\$100,000.00</b>
<b>TOTAL PROJECT</b>					<b>\$624,500.00</b>

**EXHIBIT I I**  
**SCHEMATIC OF WATER SYSTEM**

# KINNELOA IRRIGATION DISTRICT HYDRAULIC SCHEMATIC



**EXHIBIT III**  
**FIRE PREPAREDNESS POLICY**

**FIRE PREPAREDNESS POLICY**  
**FOR**  
**THE KINNELOA IRRIGATION DISTRICT**

Prepared for

The Kinneloa Irrigation District  
1999 Kinclair Drive  
Pasadena, CA 91107  
(626) 797-6295

Prepared by:

ASL Consulting Engineers  
3280 East Foothill Boulevard  
Suite 350  
Pasadena, CA 91107

February 1997

Revised by:

Melvin L. Matthews  
General Manager

April 2005

# **KINNELOA IRRIGATION DISTRICT**

## **FIRE PREPAREDNESS POLICY**

### **INTRODUCTION**

The Kinneloa Irrigation District (KID) provides water service to approximately 500 acres of hillside customers in northeast Pasadena. The Angeles National Forest borders the District on the north. Under certain weather conditions, wild fire danger is extremely high. Santa Ana winds have the capability to drive wild fires into the District with potential to cause major damage. The 1993 Altadena wild fire was the latest example of the potential fire danger. There are many factors that contributed to the Altadena wildfire damage. These factors are as follows:

- The availability of water for fire protection.
- Fuel source availability.
- Coordination of manpower.
- Equipment deployment.
- Limited ingress and egress.
- Fire preparedness.

Complete protection from major natural disasters such as wild fires is extremely difficult to provide. Preparation for all possible contingencies is impossible. The KID has determined that there are some water issues that exceed standard fire protection measures that may reduce wild fire damage to the community. These measures as applicable to the KID are identified in the KID Fire Preparedness Policy (FPP). The FPP issues identified are not necessarily immediately achievable. The FPP measures identified are a goal to be achieved to minimize future wild fire damage to the KID community.

The existing District facilities provide the level of structure fire protection originally intended. Recent wild fire events have identified several areas where water system performance above original design standards and in some cases additional capacities above current standards would be prudent. The FPP is an attempt to identify these areas and set goals to achieve reasonable standards.

The FPP identifies goals in four areas. These areas are as follows:

- Reservoir storage to maintain gravity supply to the distribution system for each pressure zone.
- Distribution piping to deliver the water supply to all areas of the District.
- Pumping capacity to supplement reservoir storage and transfer water to higher zones when necessary.
- Operational guidelines necessary to maximize system performance and minimize water loss during a wild fire event.

Following is a detailed discussion of each goal:

## 1. Reservoir Storage

The FPP reservoir storage goal is to provide storage in each zone to supply fire flow to multiple fire hydrants simultaneously in addition to customer demand. Fire flow storage goal is to provide 1,250 gpm at two locations for duration of two hours (300,000 gallons) plus 20 gpm for each customer for two hours (2,400 gallons per customer). The following table identifies the reservoir fire flow storage goals for each zone. Total services include planned developments.

<b>Service Zone</b>	<b>Total Services</b>	<b>Customer Demand (gallons)</b>	<b>Fire Storage (gallons)</b>	<b>FPP Goal (gallons)</b>	<b>Existing Storage (gallons)</b>
Eucalyptus Zone	62	148,800	300,000	448,800	180,000
Holly/Sage Zone	205	492,600	300,000	792,600	525,000
East Tank Zone	61	146,800	300,000	446,800	150,000
West Tank Zone	25	60,000	300,000	360,000	500,000
Brown/Glen Zone	77	184,800	300,000	484,800	250,000
Vosburg Zone	195	468,000	300,000	768,000	1,250,000

Note: FPP storage goal does not include reservoir operational storage. The FPP reservoir storage goal will be accomplished through new reservoir construction resulting from development and/or replacement or reconstruction of existing reservoir facilities.

## 2. Distribution Piping

The FPP distribution piping goal is to improve the distribution piping network to increase the delivery capability to all fire hydrants and customer services. The original system design required capability of delivering 750 gallons per minute of water to a single fire hydrant. The current distribution piping has the capability to meet this requirement. Flow requirements have been increased by revisions to the County Fire Department regulations. New construction within the District requires a minimum of 1,250 gpm flow for 2 hour duration.

The FPP goal is to improve the distribution system piping within each service zone to provide 1,250 gpm flows to two fire hydrants flowing simultaneously, plus a flow of 20 gpm for each customer service within the service zone. This goal is not immediately achievable. The goal will be accomplished by adequately sizing new water mains and replacing existing mains as required due to system modifications and pipe deterioration due to age. Additional fire hydrants will be added where required to meet the revised Los Angeles County requirement of 450 feet maximum vehicular distance to structures.

## 3. Pumping Capacity

The FPP pumping capacity goal is to improve the reliability, efficiency, and capacity of the District's pumping facilities. The existing pumping facilities have adequate capacity to provide maximum day domestic demands. Tunnel well water is required to meet maximum day domestic demand for some zones. Development of additional customer services will increase demand above current pumping capacities. Additional pumping capacity is required to meet the additional demands.

The FPP pumping capacity goal is to improve pumping facilities to the following standards:

- A. Pumping capacity for each zone will be sufficient to pump maximum day demand during Edison Company off-peak demand 16-hour daily pumping period.
- B. Pumping capacity will be sufficient to replace fire flow storage within a minimum of one 24-hour period.
- C. Pump facilities for each zone will include a minimum of two pumps:
  - One (1) Duty
  - One (1) Standby

There will be an alternative for larger capacity facilities having three pumps:

- Two (2) Duty
- One (1) Standby

Pumps will be high efficiency vertical turbine pumps, with pump can manifold, aboveground discharge, and pump control valve check valves to minimize system pressure surges. Each facility will include provisions for emergency generator lug connections. Emergency generator shall provide power to a minimum of one Duty pump. Pump station piping shall include provisions for bypass valve and bypass connections for fire engine pumping equipment or portable emergency pumping equipment.

The FPP goal will be accomplished by applying the above standards to all new pumping facility designs and upgrading existing facilities to above standards when capacity modifications are required or when pumping equipment is replaced.

#### **4. System Operational Guidelines**

The FPP guidelines were developed from discussions with KID staff focusing on the 1993 wild fire incident. The goal of the operational guidelines is to make efficient use of the water supply to protect the KID customers and maximize fire department suppression capabilities. In the event of wild fire danger, the KID staff will attempt to implement the following guidelines:

- A. General Manager or Facilities Supervisor will coordinate water system operation with fire department deployment of manpower and equipment.
- B. Whenever possible, KID staff will attempt to minimize water waste by stopping visible leaks from damaged structures and/or irrigation systems. Water service to damaged structures and/or irrigation system may be turned off.
- C. Fire department pumping equipment may be deployed and connected to inter zone transfer facilities.
- D. Bypass valves or pumping facilities may be operated as required to make up reservoir storage losses. Transfers between zones will be made only when necessary and only when transfer will not deplete zone storage below levels required to provide adequate fire protection. Transfer of water between zones will be at the discretion of the General Manager or Facilities Supervisor.

- E. District emergency portable generator will be maintained and tested monthly and placed in service when required to provide emergency power for pumping when anticipated power failure is expected for a duration of more than 2 hours. Additional emergency generators will be provided at the discretion of the General Manager or Facilities Supervisor.
  
- F. District's two portable pumps will be maintained and tested monthly and placed in service when prolonged power outages and/or failure of booster pumps require the use of the pumps to maintain adequate reservoir storage levels.

# General Manager's Report

## November 20, 2007

### I. Projects

- A. Vehicle Replacement – Purchase order has been submitted. Chassis is scheduled to be manufactured by Ford during the week of November 16, 2007.
- B. Interconnections with the City of Pasadena – Both the Ranch Top and Fairpoint projects have been engineered. We are ready to do our part as soon as the projects are scheduled by the City.
- C. New York Drive 10-inch Main – Doreck has completed all but 250 feet of the 1050-foot project. Unexpectedly to all of us, the City of Pasadena claimed that a portion of the project was within the city limits and furthermore reminded us that the City has assumed maintenance of both the city and county portions of the roadway. Even though our preliminary maps did not show any portion of the project in the city, upon further investigation, we were able to validate the city's claim, although the exact location of the boundary line has not been determined in the field. Therefore the project has been halted until the requested city permits have been obtained. This is a time-consuming process, but we still hope to complete the project before the city's construction moratorium for the Tournament of Roses goes into effect.
- D. Southern California Edison Interruptible Power Controllers – Radio-controlled devices have been installed at three locations to turn off our pumps at SCE's option during power shortages. In exchange for installing these devices, we are able to take advantage of lower electrical rates. Since we already do most of our pumping at night, it would be rare that the devices if activated would affect our operations. We will initially connect the devices at two out of the three locations (Eucalyptus and Wilcox Reservoirs.) The existing generator and portable pump will provide emergency pumping at these locations. We will activate the third location (K-3 Well) as soon as SCE revises their penalty schedule and/or we secure an additional generator.

## II. Field Operations

A. Issues – None

B. Overtime Report

Date	CAUSE	CHRIS	BRIAN
7/1-7/15	Fac. Ck	1.00	4.00
	Alarms	4.00	
	Cl2 Maint.	4.00	
7/16-7/31	Fac. Ck	2.50	4.00
	Alarms	8.50	
	Projects	0.50	
	Eq. Maint.		2.50
	Cl2 Maint.	4.50	
	Cust. Ser.	1.00	
8/1-8/15	Fac. Ck.	3.50	
	Cl2 Maint.	1.50	
	Alarms	2.00	
8/16-8/31	Fac. Ck.		5.00
	Eq. Maint.	1.00	
	Projects	1.50	
	Cl2 Maint.	3.00	
	Alarms	8.00	
9/1-9/15	Fac. Ck.	4.00	
	Leaks	3.50	7.00
	Pwr. Out.	1.50	
	Eq. Maint.	4.00	1.50
	Alarms	16.00	
9/16-9/30	Fac. Ck	2.00	4.00
	Alarms	9.00	
	Cl2 Maint.	1.50	
	Eq. Maint.	1.00	
10/1-10/15	Fac. Ck	3.00	
	Cl2 Maint.	0.50	
	Alarms	5.50	
	Cust. Ser.	1.00	
10/16-10/31	Fac. Ck.		3.00
	Cust. Ser.		0.50
	Alarms	8.50	
	Projects	5.00	
	Eq. Maint.		2.50
<b>TOTALS</b>		<b>112.50</b>	<b>34.00</b>

Fac. Ck.	Sys. Ops./ Alarms	Equip. Maint.	Cl2. Maint.	Leaks	Projects	Pwr. Out.	Cust. Serv
5.00	4.00		4.00				
6.50	8.50	2.50	4.50		0.50		1.00
3.50	2.00		1.50				
5.00	8.00	1.00	3.00		1.50		
4.00	16.00	5.5		10.5		1.5	
6.00	9.00	1.00	1.50				
3.00	5.50		0.50				1.00
3.00	8.50	2.50			5.00		0.50
<b>36.00</b>	<b>61.50</b>	<b>12.50</b>	<b>15.00</b>	<b>10.50</b>	<b>7.00</b>	<b>1.50</b>	<b>2.50</b>

### III. Customer Correspondence and Service Issues for October

- A. Various Locations (3) – Customers reported high water bills. Per our normal procedures we checked for obvious leaks and offered to read the meter for 7-day period and report the usage. No problems found.
- B. Pasadena Glen Road – Customer reported leak in street. Leak was in a short piece of polyethylene pipe in service line. Service was no longer in use so it was disconnected and meter was removed.
- C. Hartwood Point – Customer reported that the relief valve on water heater was periodically opening. We measured the water pressure at 110 psi which is the normal for that location. Advised customer to replace pressure regulator which was not operating properly.

### IV. Office Operations

#### A. Delinquent Accounts

20 accounts received 10 day letters  
8 accounts received 5 day letters  
0 accounts received 24-hour shut off notice  
0 accounts shut off

### V. Meetings and Conferences

- A. Foothill Municipal Water District – Managers’ meeting
- B. Foothill Municipal Water District – Board meeting
- C. CSDA – Annual Conference
- D. RBMB – Semi-Annual Planning Retreat

### VI. Legislation

An excellent summary of the first year of the 2007-2008 State Legislative Session is given in the attached memo from Lagerlof Senecal, Gosney and Kruse to the Public Water Agencies Group of which we are a member.

M E M O R A N D U M

TO: Public Water Agencies Group Members  
FROM: Special Counsel  
DATE: October 23, 2007  
RE: State Legislation

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A large number of bills introduced during the first year of the 2007-2008 Legislative Session were of interest to public water agencies. However, deliberations regarding the budget prevented action on most substantive policy matters. The most significant legislative activity occurred during the Special Session called by the Governor to deal with health care and water matters.

The Legislators during the Special Session were faced with competing water bond proposals from Senator Perata and Governor Schwarzenegger. Both proposals were unable to secure approval and as a result, both proposals will now take the form of initiative matters to be presented to the voters, probably in the November 2008 election. The principal point of difference was the inclusion within the Governor's proposal of significant funds for water storage (namely, the Site and Temperance Flats Reservoirs) and potential conveyance improvements.

The following bills were passed and will become law January 1, 2008:

AB 715 (Laird). This bill requires that all toilets sold and installed in the State shall use no more than 1.6 gallons and urinals no more than one gallon per flush.

AB 1260 (Caballero). This bill authorizes the agency providing property related services to a parcel to provide the required notice of the increase of an existing fee or charge in the billing statement. This was a minor clarification designed to overcome some of the problems in the

Memo to Public Water Agencies Group Members

Re: State Legislation

October 23, 2007

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*Bighorn* decision. The bill was amended from its original version at the urging of the Howard Jarvis Taxpayers Association to delete the 120-day limitation period the bill originally contained.

AB 1376 (Berryhill). This bill would require any water supplier that prepares an urban water management plan to seek comments from city and county planning departments in the area the supplier serves at least 60 days prior to the public hearing on the plan.

AB 1420 (Laird). This bill conditions State funding to urban water suppliers for water management on implementation of water conservation measures and requires compliance with conservation BMP's as a condition precedent to securing funding.

SB 144 (Committee on Local Government). Part of this bill codifies a recent appellate court decision involving the Upper San Gabriel Valley Municipal Water District, in which its Board appointed Leon Garcia to fill a vacancy on the Board. This bill clarifies the existing ambiguous language in Government Code Section 1780 regarding filling of vacancies, by stating if the vacancy occurs in the first half of a term, the person filling the vacancy serves until the next general district election and the voters elect someone to serve out the balance of the unexpired four-year term. If the vacancy occurs in the second half of a term, the person filling the vacancy serves out the balance of the unexpired four-year term.

SB 220 (Corbett). This bill requires consumer confidence reports for bottle and vended water.

SB 343 (Negrete McLeod). This bill would amend the Brown Act to require a public agency, with respect to an open session at any regular board meeting, to make available for inspection by the public any non-exempt documents that are provided to the directors within 72 hours before the meeting.

SB 699 (Ducheny). This bill would amend the statutes concerning capacity charges to authorize capacity charges to include charges for the procurement of water rights and entitlements, including long-term leases for water supply.

SB 1029 (Ducheny). This bill provides a more efficient and timely process for adopting drinking water standards in California. It eliminates some of the regulatory requirements and shortens the time for action and approval of regulations.

A number of legislative proposals were defeated or held in legislative committees. Among these are the following:

AB 503 (Swanson). This bill was originally introduced to be applicable only to Metropolitan Water District, and would prohibit any employee entitled to receive overtime

Lagerlof  
Senecal  
Gosney & Kruse  
LLP

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Re: State Legislation

October 23, 2007

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compensation from performing services outside the employee's normal work schedule unless a minimum of eight hours written notice of that work assignment was provided to the employee. The author subsequently amended the bill to expand it to apply to all local public agencies. The author also amended the bill to allow for an agency to adopt a rule for "operational emergencies" in which the 8 hour notice provision would not apply, but such a rule would be subject to a meet and confer requirement with any union representing the agency's employees. The bill has been further amended and is now a "study bill" that requires the California Research Bureau to conduct a study on issues related to the requirement that state and local agencies provide eight hours' written notice to employees who are required to work overtime, including the impacts of such a requirement on both employers and employees. (In Senate Rules Committee)

AB 640 (De La Torre). Originally, this bill dealt with the reallocation of the Water Replenishment District's groundwater assessments between the Central and West Basins. It has been subsequently amended to be a study bill that requires the Department of Water Resources to conduct a study, to be completed by January 1, 2010, to determine the basin specific charges, including underflow, in the Central and West Basins. (In the Senate Appropriations Committee).

AB 817 (Maze). This bill would have required that a mutual water company have a supervisory committee to provide oversight of the activities of the mutual water company board of directors. (Still in the Senate Water Committee.)

AB 844 (Berryhill). This bill would have prohibited a junk dealer or recycler from providing payment for metal unless the payment was made by check and postdated. (Still in the Senate Environmental Quality Committee.)

AB 885 (Calderon). This bill would require the composition and number of the Board of Directors of Metropolitan Water District to be the same as existed at January 1, 2007, thereby eliminating adjustments in the future based on changes and assessed valuation. (Still in the Senate Local Government Committee.)

AB 1435 (Salas). This bill would have required public water agencies to institute a conservation rate structure based on the amount of water used. (Still in the Senate Water Committee.)

AB 1521 (Salas). This bill would have required each container of bottled water to include on the label the identity of the source from which the water was obtained. (Vetoed)

SB 619 (Migden). This bill would have reduced the percentage of retention on contracts to 5%. (In Assembly Inactive File.)

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October 23, 2007

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SB 964 (Romero) – This bill would amend the Brown Act to overturn part of a court of appeal decision concerning “serial meetings,” in which the court did not find a violation of the Brown Act where a city manager met individually with City Council members on a matter the City Council was considering. This bill would prohibit any series of communications that members of a legislative body could use, directly or indirectly, to take action on an item of business within the agency’s jurisdiction. (Vetoed)

SCA 12 (Torlakson). This constitutional amendment would have excluded fees and charges for storm water and urban run-off management from Proposition 218. (Still on Senate Floor.)

At the Legislative Planning Committee meeting on October 19<sup>th</sup>, the State Legislative Committee of ACWA agreed to sponsor the following legislation:

1. At the present time in-conduit hydro is not eligible for net metering. This interferes with the development of renewable generating resources. Energy developed by in-conduit hydro would allow for banking of excess renewable energy and enable a water agency to draw-back the energy off the grid when needed. The proposed legislation would make in-conduit hydro energy eligible for net metering. Current net metering regulations require water agencies to construct biogas generators that match the electricity load at the treatment facilities only. The legislation proposed would enable the agency to build larger biogas generators to meet the load at pumping plants and administration buildings.

Finally, it was decided ACWA will join with the Farm Bureau in an attempt to slow down metal thefts. Proposals relating to allocation based conservation rate structures were considered but deferred pending the development of further supportive information.

HJS:lj

*Lagerlof  
Senecal  
Gosney & Kruse*  
LLP

**MINUTES OF A SPECIAL MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
September 24, 2007**

**MEMBERS PRESENT:** Directors Griffith, Kilburn, Sorell and Pickard.  
Director Barkhurst was absent

**STAFF PRESENT:** Chris Burt, Facilities Supervisor  
Shirley Burt, Administrative Assistant  
Melvin Matthews, General Manager

**CALL TO ORDER:** The Meeting was called to order by the **Acting chair, Steve Sorell**, at 0850 hours and he noted that there was a quorum present. He stated that the meeting would include only discussion having to do with the proposed 2008 Budget as shown on the Agenda.

**PUBLIC COMMENT**

There were no members of the public present.

**REVIEW OF THE PROPOSED BUDGET:**

The **General Manager** referred to the documents that he had provided the committee stating that he had

- 1) Made the corrections to the proposed budget that had been requested at the last Meeting
- 2) Updated the 2007 forecasted expenditures to include the month of August "Actual Expenditures"
- 3) Provided a spread sheet showing the expenditure history over the last five years
- 4) Prepared a draft copy of proposed changes to the Master Plan.

**Director Sorell** asked for the net effect of the changes made to the proposed budget as compared to the one presented at the last meeting and the **General Manager** replied that there was an increase of approximately \$2000.

**Director Sorell** then stated that at the current rate structure this would leave a reserve account of about \$211, 000. at then end of 2008 and the General Manager agreed.

**Director Sorell** noted that the proposed budget for capital expenditures is projected to be \$325,000 for 2008 year and the **General Manager** replied that there are actually \$378,000 of worthwhile projects all of which are high priority but don't have to all be done in one year. He explained that more current estimates had been obtained and that the \$325,000 is a realistic number and that he would be providing the Board with a project list at a later date.

**Director Sorell** commented that the projected capital expenditures shown for the next five years is decreasing to \$300,000 the following year and to \$250,000 the next year. The **General Manager** stated that the reason for the reduction was due to the truck purchase which will be done next year and then no truck purchases are anticipated in the following four years which reduces the capital expenditure amount.

**MINUTES OF A SPECIAL MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
September 24, 2007**

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**Director Griffith** questioned if the \$45,000 expenditure for the truck would remain in the capital expenditure budget if the truck was leased and **Director Sorell** stated that it would be treated as a capital expenditure.

**Director Sorell** noted that the forecasted expenditure for the 2007 year had increased by \$12,000.

**Director Sorell** then requested a vote of approval for the proposed 2008 Operating Budget.

It was M/S/C –(Kilburn/Pickard-4/0) – **“That the 2008 year Proposed Operating Budget of \$1,028,050. Income and \$791,585 Expenditures be recommended to the Board for Approval”**.

**REVIEW OF THE MASTER PLAN:**

The **General Manager** explained that in the Executive Summary he had provided a summary of the costs on page four and that these were just estimates updated from the prior Engineer estimates, based on the costs of the current project, and on formal estimates that had been obtained.

**Director Griffith** questioned some of the cost estimates and wondered whether it would be worthwhile to have an Engineer review the estimates and **Director Pickard** noted that the costs would change depending upon in what year the project was done.

The **General Manager** commented that he did not think the Engineer expense was warranted since the true cost would only be known when the project was put out to bid.

**Director Sorell** noted that some of the costs involved new equipment but that for the short term decision that needed to be made regarding the 2008 budget the estimated costs should be used, and that next year the budget should included some amount of money for the engineer to go through some of projects and obtain an update on the price since it has been seven years since a responsible third party had looked at the master plan. He further stated that it behooves the Board to have current updated prices even though it is a moving target which is getting bigger and suggested spending maybe a couple thousand dollars in 2008.

The **Facilities Supervisor** explained that in the original Master Plan the pipeline projects were designed with the object of increasing Fire Flow but that in doing those pipelines today replacing service line needs to be considered since the streets will torn up.

The **General Manager** stated that in the original Master Plan the pipeline projects only went to the Fire Hydrant and not to the end of the streets which should be considered at this time also.

**Director Griffith** stated that he would like a list of all the projects condensed onto one sheet and **Director Sorell** stated that a list of projects for the next three years would be helpful knowing that priorities change from year to year and that staff can only do a certain number of projects in any one year.

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**MINUTES OF A SPECIAL MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
September 24, 2007**

**Director Sorell** commented that with the current reserve, we can fund this years projects without a rate increase and that it would probably be a better plan to have fewer rate increases but sizeable ones rather than small ones every year.

**Director Kilburn** stated that she did not think a rate increase this year was the thing to do.

**Director Sorell** asked the General Manager how he proposed to do more than an update to the numbers in the plan.

The **General Manager** replied that

- 1) Developing a new Master Plan is very expensive
- 2) The current Master Plan is a valuable plan and can be extended to include new thinking having to do with emergency preparedness such as generators which would make the District more self sufficient
- 3) Spending some engineering money on developing the whole hydraulic model of the District would be useful in identifying weak points in the system and operational problems that are not related to emergency preparedness which would be helpful in developing a new Master Plan in the future

Following a discussion regarding the current Fire Department requirement of 2000 GPM and the effect that it has on the pipeline projects and the concurrent expense to the District, the **General Manager** pointed out that one of the projects, the east to west pipeline, would benefit everyone but is at the bottom of the list because of cost.

The **Facilities Supervisor** stated that it would be simpler at this time to leave the current Master Plan in place and update as needed and consider developing a new plan in maybe 2010.

**Director Sorell** suggested that a project list be developed as a working document that would be reviewed each year by the Board and a decision made as to which projects would be funded depending upon the amount in the reserve fund, the possible need for a rate increase, and the ability of the District to handle the number of projects with the current staff. He noted that at todays prices the current lists comes to approximately Four (4) million dollars.

**Director Sorell** noted that for the 2008 year he did not see the need for a rate increase but that maybe there would be a need for a sizeable increase the following year which would make better sense than to do a 3% increase every year.

It was M/S/C – (Griffith/Kilburn -4/0) –

**“That the 2008 proposed budget of \$796,585 for Operating Expenses and \$325,000 for Capital and Planned Maintenance Expenses be submitted to the Board for approval with the recommendation that no rate increase be considered and that \$5,000 be allocated to seek consulting help to revise the Master Plan to determine the pipe sizing necessary to obtain the 2000 GPM Fire Flow.”**

Respectfully submitted,

Shirley Burt  
Secretary to the Board

**MINUTES OF THE REGULAR MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
October 16, 2007**

**MEMBERS PRESENT:** Directors Barkhurst, Sorell and Pickard.  
Directors Griffith and Kilburn had previously notified the Board that they would be unavailable for the meeting.

**STAFF PRESENT:** Chris Burt, Facilities Supervisor  
Shirley Burt, Administrative Assistant  
Melvin Matthews, General Manager

**CALL TO ORDER:** The Meeting was called to order by the Chair, **Richard Barkhurst**, at 1930 hours. The Agenda was unanimously approved as presented.

**PUBLIC COMMENT:** **No** members of the public were present.

**APPROVAL OF YEAR 2008 BUDGET**

**Director Barkhurst** requested that the minutes reflect that Directors Griffith and Kilburn, who are absent from the meeting, had actively participated in the development and approval of the budget that is being presented.

**Director Sorell** made the following comments regarding the proposed budget --

- A rate increase is not being proposed for the year 2008
- Water sales are predicted to be the same as in 2007
- No disaster assistance is being forecasted
- Expenses are forecasted to increase mainly in the areas of insurance, water master fees, salaries, PERS, Social Security, gasoline, computer maintenance, and truck purchase
- The budget committee did recommend approval of the proposed budget.

**Director Barkhurst** commented that the proposed budget is conservative as regards revenues and expenses but will leave a negative cash flow of \$88,000 and that the minutes from the budget committee meeting indicated that it was the consensus of the committee that a rate increase not be recommended this year but that the District will live within the negative cash flow as shown.

**Director Sorell** agreed with Director Barkhurst's statement but noted that the District could draw down on the reserves if needed.

The **General Manager** stated that there might be additional funds available from the 2007 year carry over to offset the projected negative cash flow due to the receipt of FEMA funds. He further stated that there will be a project list established that will indicate the priority and estimated costs for each of the capital projects and that each of the projects will be brought to the Board separately for approval.

**Director Barkhurst** commented then that the assumption is based on this budget including the capital piece and that the total capital type of expenditures for 2008 would stay within the \$325,000.

It was M/S/C- (Sorell/Pickard-3/0) - **“That the 2008 proposed budget be approved as presented.”**

**MINUTES OF THE REGULAR MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
October 16, 2007**

**Page 2**

**DEVELOPMENT OF COMMUNITY OUTREACH PLAN**

**Director Barkhurst** stated that he had requested that this item be placed on the Agenda so that it remains an agenda item because the Director who has volunteered to lead this project is not present and he recommended therefore that the discussion be continued at the November meeting.

The **General Manager** reported that Foothill Municipal Water District is going to hire a part time person to deal with conservation and community outreach and that this person would be available to Director Kilburn as a resource.

**Director Barkhurst** commented that he had observed from the ads in the local newspapers that there are a number of water districts and related entities that are holding public meetings and that the District could learn from what they have done and what proved to be most successful.

**GENERAL MANAGERS REPORT**

The General Manager highlighted the following topics from his report.

**Truck Purchase** – The District has the final quotation from Wondries which is within the budget but the District is waiting for more backup material to be sure that the utility body meets the District specifications.

**K-3 Pipeline** – The Contractor is scheduled to begin on Wednesday, October 17, 2007

**REVIEW OF THE MINUTES**

The minutes of September 16, 2007 were reviewed and unanimously approved with the following correction

Page 2, paragraph 10, last line – after the word “for” insert the words “specific capital projects or revenue generation”.

The minutes of September 24, 2007 were continued to the November meeting since the minutes were of a budget discussion and two members of that discussion were absent from the meeting.

**REVIEW OF FINANCIAL REPORTS**

The **General Manager** directed attention to the expenditures for the Hi-Lo Pressure Tunnel and noted that the District’s cost is down to \$911.47 due to FEMA payments.

**Director Barkhurst** noted that expenditures were over budget for the water treatment category and the **General Manager** explained that was due to the replacement of a chlorinator unit that had been malfunctioning and Director Sorell stated that it would be a maintenance cost.

**MINUTES OF THE REGULAR MEETING  
OF THE BOARD OF DIRECTORS OF THE  
KINNELOA IRRIGATION DISTRICT  
October 16, 2007**

**Page 3:**

**REVIEW OF FINANCIAL REPORTS (CONTINUED):**

**Director Sorell** questioned the cost for Diesel fuel and the **Facilities Supervisor** explained that during the power outage he had used that amount in three days for the auxiliary pumps.

**Director Sorell** questioned the amount spent for water meters and the **Facilities Supervisor** replied that the cost covered 6-1" meters, 2-1 ½ meters, 2- 2" meters and 6- ¾" meters which are all the radio control type which allows for drive by reading.

The Financial Reports were unanimously approved as present.

**ITEMS FOR NEXT AGENDA:**

Community Outreach Plan  
Minutes of September 24, 2007  
Presentation of Master Plan  
Review of Production Report  
Results of Election

**ADJOURNMENT:**

The meeting was adjourned at 2115 hours and the next meeting will be on November 20, 2007. Director Pickard notified the Board that he will be out of town on that date.

Respectfully submitted,

Shirley L. Burt  
Secretary to the Board

**Kinneloa Irrigation District**  
**Income Statement**  
**For the Ten Months Ending October 31, 2007**

	Current Month Actual	Current Month Budget	Year to Date Actual	Year to Date Budget
<b>Revenues</b>				
4000 Water Sales	\$ 99,816.53	\$ 90,000.00	\$ 959,117.36	\$ 857,000.00
4010 Leased Water Sales	0.00	0.00	3,627.35	0.00
4015 Wholesale Wtr.-City of Pas.	0.00	9,470.25	80,285.34	94,702.50
4020 Invoice Sales	104.82	200.00	12,518.32	2,000.00
4030 Interest-General Fund Checking	5.43	4.17	74.93	41.70
4035 Interest-General Fund Savings	7,803.29	2,500.00	27,184.66	10,000.00
4037 Interest-Bank of America	0.82	2.08	20.96	20.80
4050 Capacity Charge	3,000.00	0.00	3,000.00	0.00
4060 Disaster Assistance	0.00	0.00	189,195.00	0.00
<b>Total Revenues</b>	<b>110,730.89</b>	<b>102,176.50</b>	<b>1,275,023.92</b>	<b>963,765.00</b>
<b>Expenses</b>				
5005 Power	7,981.99	9,000.00	92,091.28	100,000.00
5010 Maintenance Supplies	2,718.21	1,666.67	10,875.09	16,666.70
5012 Safety Equipment	0.00	166.67	703.74	1,666.70
5015 Maintenance Labor	12,956.97	13,781.25	133,430.50	137,812.50
5020 Stand-by	540.00	930.00	8,130.00	9,170.00
5022 Training/Certification	87.00	200.00	1,485.70	2,000.00
5025 Water Treatment/Analysis	597.92	1,666.67	15,191.77	16,666.70
5030 Maintenance Contractors	3,229.84	4,000.00	31,573.72	40,000.00
5034 Equipment Maintenance	1,074.00	166.67	4,098.03	1,666.70
5035 Vehicle Maintenance	70.00	458.33	5,889.45	4,583.30
5036 Fuel - All Equipment	615.57	708.33	7,146.11	7,083.30
5045 Insurance-Workers Compensation	2,823.00	3,000.00	14,507.00	12,000.00
5046 Insurance-Liability	7,254.83	1,250.00	17,570.81	12,500.00
5048 Insurance-Property	186.25	208.33	1,862.50	2,083.30
5049 Insurance-Medical	2,436.66	3,583.33	29,332.66	35,833.30
6000 Project Engineering	0.00	500.00	2,937.50	5,000.00
6005 Watermaster	660.83	0.00	4,677.11	7,000.00
6010 Telemetry	66.91	70.83	672.38	708.30
6015 Administrative Salary	7,361.84	7,717.50	72,368.24	77,175.00
6017 Administrative Travel	698.43	208.33	3,606.79	2,083.30
6018 Administrative PERS	506.00	533.33	3,932.96	5,333.30
6020 BofD Compensation	300.00	500.00	5,300.00	5,600.00
6021 Administrative Exp.	667.55	208.33	2,482.15	2,083.30
6024 Customer/Public Info. Prog.	0.00	333.33	1,728.04	3,333.30
6025 PERS - KID	861.67	958.33	6,591.78	9,583.30
6030 Social Security - KID	1,923.64	2,066.67	19,642.18	20,666.70
6035 Office Supplies	118.12	750.00	4,178.47	7,500.00
6036 Postage/Delivery	256.34	458.33	2,644.48	4,583.30
6040 Professional Dues	356.04	583.33	4,563.40	5,833.30
6045 Legal	1,995.00	833.33	3,634.89	8,333.30
6050 Telephone	428.28	416.67	4,062.65	4,166.70
6051 Cellular Telephone	436.61	208.33	1,843.47	2,083.30
6052 Pagers	127.50	150.00	1,277.33	1,500.00
6053 Internet Service	69.89	83.33	674.15	833.30
6059 Computer/Software Maintenance	934.35	666.67	4,038.99	6,666.70
6061 Office Equipment Maintenance	0.00	0.00	1,184.26	1,000.00
6065 Accounting	0.00	0.00	4,800.00	7,000.00
6070 Office Labor	3,986.84	3,850.00	37,650.35	38,500.00
6075 Outside Services	1,947.55	1,333.33	15,958.03	13,333.30
6081 Permits/Fees	0.00	208.33	583.96	2,083.30
6120 Bank Service Charges	21.88	100.00	854.19	1,000.00
<b>Total Expenses</b>	<b>66,297.51</b>	<b>63,524.55</b>	<b>585,776.11</b>	<b>642,715.50</b>
<b>Net Income</b>	<b>44,433.38</b>	<b>38,651.95</b>	<b>689,247.81</b>	<b>321,049.50</b>

**Kinneloa Irrigation District**  
**Income Statement**  
**For the Ten Months Ending October 31, 2007**

	Current Month Actual	Current Month Budget	Year to Date Actual	Year to Date Budget
<b>Other Expenditures</b>				
1200 Inventory	(1.40)	416.67	4,448.04	4,166.70
1504 Mains	0.00	12,500.00	11,735.35	50,000.00
1505 Water Tunnels	0.00	0.00	224,804.59	0.00
1511 Water Treatment Plant	0.00	0.00	14,854.54	7,500.00
1512 Trans. & Dist. Plant Meters	0.00	200.00	9,120.39	2,000.00
1513 Electrical/Electronic Equip.	0.00	0.00	27,977.41	10,000.00
1514 Computer/Office Equipment	0.00	0.00	2,974.73	3,000.00
1515 Trucks and Equipment	0.00	0.00	0.00	45,000.00
1517 Hidden Valley Office	0.00	0.00	0.00	8,000.00
1523 Construction in Progress	0.00	0.00	(101,679.00)	0.00
1527 SCADA	0.00	0.00	6,809.09	7,500.00
1528 Tanks and Reservoirs	5,891.26	10,416.67	100,641.23	104,166.70
<b>Total Other Expenditures</b>	<b>5,889.86</b>	<b>23,533.34</b>	<b>301,686.37</b>	<b>241,333.40</b>
<b>Total Increase or (Drawdown)</b>	<b>\$ 38,543.52</b>	<b>\$ 15,118.61</b>	<b>\$ 387,561.44</b>	<b>\$ 79,716.10</b>

**Steven Sorell, Treasurer** \_\_\_\_\_

**Kinneloa Irrigation District**  
**Balance Sheet**  
**October 31, 2007**

**ASSETS**

**Current Assets**

1000	Checking-Bank of the West	\$	35,794.42	
1002	Checking-B of A		19,265.47	
1010	Checking-Wells Fargo Bank		149,457.99	
1012	Savings Account-LAIF		507,781.08	
1013	Savings-LAIF Reserve Fund		250,000.00	
1100	Accts. Receivable-Water Sales		185,641.63	
1101	Accts. Receivable-Invoices		1,855.54	
1190	Allowance for Bad Debts		(1,881.57)	
1200	Inventory		24,448.09	
1350	Prepaid Insurance		13,331.45	
1360	Prepaid Expenses		6,674.71	
	Total Current Assets			1,192,368.81

**Property and Equipment**

1501	Water Rights		52,060.41	
1503	Land Sites		96,700.08	
1504	Mains		1,021,912.47	
1505	Water Tunnels		765,246.75	
1506	K-3 Well		70,233.86	
1507	Improvement District #1		602,778.12	
1508	Mountain Property		6,620.00	
1509	Wilcox Well		71,312.70	
1510	Fairpoint St. Interconnect		14,203.27	
1511	Water Treatment Plant		88,494.07	
1512	Trans. & Dist. Plant Meters		63,852.98	
1513	Electrical/Electronic Equip.		205,875.97	
1514	Computer/Office Equipment		45,430.51	
1515	Trucks and Equipment		92,485.95	
1516	Water Company Facilities		36,590.26	
1517	Hidden Valley Office		51,362.92	
1518	Shaw Ranch		280,789.92	
1519	Dove Creek Project		487,383.87	
1521	Kinneloa Ridge Project		690,492.58	
1522	Eucalyptus Booster Station		471,817.81	
1526	Vosburg Booster		12,590.00	
1527	SCADA		137,214.52	
1528	Tanks and Reservoirs		183,210.48	
1529	Holly Tanks		181,113.76	
1600	Accum. Depreciation		(1,767,011.95)	
	Total Property and Equipment			3,962,761.31
	Total Assets	\$		5,155,130.12

**Kinneloa Irrigation District**  
**Balance Sheet**  
**October 31, 2007**

**LIABILITIES AND CAPITAL**

**Current Liabilities**

2000	Accounts Payable	\$ 11,561.87
2250	PERS Withholding-Employee	1,222.55
2260	Med./Dental-Withhold-Employee	480.60
2271	Deposits-Construction Meters	850.00
2272	Job Deposits	8,539.38
2273	Job Deposits-Doyne Rd.	5,497.68
2290	Accrued Vacation	13,267.70
		<hr/>
	Total Current Liabilities	41,419.78

**Long-Term Liabilities**

	Total Long-Term Liabilities	<hr/> 0.00
	Total Liabilities	41,419.78

**Capital**

3040	Fund Balance	4,424,462.53
	Net Income	689,247.81
		<hr/>
	Total Capital	5,113,710.34
	Total Liabilities & Capital	<hr/> \$ 5,155,130.12 <hr/>

**Steven Sorell, Treasurer** \_\_\_\_\_

**Kinneloa Irrigation District**  
**Statement of Cash Flow**  
**For the Ten Months Ended October 31, 2007**

	Current Month	Year to Date
<b>Cash Flows from operating activities</b>		
Net Income	\$ 44,433.38	\$ 689,247.81
<i>Adjustments to reconcile net income to net cash provided by operating activities</i>		
1100 Accts. Receivable-Water Sales	13,566.17	(49,260.94)
1101 Accts. Receivable-Invoices	545.18	912.90
1102 Accts. Receiv.-Wholesale Water	0.00	37,324.21
1200 Inventory	1.40	(4,448.04)
1350 Prepaid Insurance	1,415.25	(3,387.52)
1360 Prepaid Expenses	1,016.87	256.21
2000 Accounts Payable	(103,880.34)	(94,097.81)
2250 PERS Withholding-Employee	0.00	1,222.55
2260 Med./Dental-Withhold-Employee	(480.60)	266.14
2270 FEMA Deposits	0.00	(42,418.00)
2271 Deposits-Construction Meters	850.00	850.00
2272 Job Deposits	7,239.38	1,664.33
	(79,726.69)	(151,115.97)
<b>Net Cash provided by Operations</b>	<b>(35,293.31)</b>	<b>538,131.84</b>
 <b>Cash Flows from investing activities</b>		
<i>Used For</i>		
1504 Mains	0.00	(11,735.35)
1505 Water Tunnels	0.00	(267,222.59)
1511 WaterTreatment Plant	0.00	(14,854.54)
1512 Trans. & Dist. Plant Meters	0.00	(9,120.39)
1513 Electrical/Electronic Equip.	0.00	(27,977.41)
1514 Computer/Office Equipment	0.00	(2,974.73)
1527 SCADA	0.00	(6,809.09)
1528 Tanks and Reservoirs	(5,891.26)	(100,641.23)
	(5,891.26)	(441,335.33)
 <b>Cash Flows from financing activities</b>		
<i>Proceeds From</i>		
<i>Used For</i>		
Net cash used in financing	0.00	0.00
<b>Net increase (decrease) in cash</b>	<b>\$ (41,184.57)</b>	<b>\$ 96,796.51</b>
 <b>Summary</b>		
Cash Balance at End of Period	\$ 962,298.96	\$ 962,298.96
Cash Balance at Beg. of Period	(898,038.50)	(615,960.42)
<b>Net Increase (Decrease) in Cash</b>	<b>\$ 64,260.46</b>	<b>\$ 346,338.54</b>

**Steven Sorell, Treasurer** \_\_\_\_\_

**Kinneloa Irrigation District 2007 Financial Summary (Actual and Forecasted)**

Account	Account Description	2007 Budget	January Actual	February Actual	March Actual	April Actual	May Actual	June Actual	July Actual	August Actual	September Actual	October Actual	November Forecasted	December Forecasted	2007 FYE Forecasted	Deviation from Budget		
4000	Water Sales	990,732	75,010	58,268	74,620	78,943	96,583	100,849	144,880	106,087	124,063	99,817	76,000	57,732	1,092,849	102,117	10%	
4010	Leased Water Sales	0	0	0	0	0	0	0	2,325	0	0	0	0	0	2,325	2,325	0%	
4015	Wholesale Water Sales-Pasadena	113,643	25,653	28,265	26,367	0	0	0	0	0	0	0	9,470	9,470	99,226	-14,417	0%	
4020	Invoice Sales	2,400	2,163	714	380	7,076	0	0	2,683	700	0	105	200	200	14,221	11,821	493%	
4030	Interest-General Fund	50	8	28	7	4	3	3	6	5	5	5	4	4	83	33	66%	
4035	Interest-LAIF	10,000	7,076	0	0	6,141	0	0	6,165	0	0	7,803	0	0	27,185	17,185	172%	
4037	Interest-Bank of America	25	2	2	2	2	3	4	3	1	1	1	1	1	23	-2	-9%	
4050	Capacity Charge	3,000	0	0	0	0	0	0	0	0	0	3,000	0	3,000	6,000	3,000	100%	
4060	Disaster Assistance	0	0	0	9,940	38,930	0	89,785	0	47,227	3,313	0	0	0	189,195	189,195	0%	
	<b>Total Income</b>	<b>1,119,850</b>	<b>109,912</b>	<b>87,276</b>	<b>111,315</b>	<b>131,096</b>	<b>96,589</b>	<b>190,641</b>	<b>156,062</b>	<b>154,020</b>	<b>127,382</b>	<b>110,731</b>	<b>85,675</b>	<b>70,407</b>	<b>1,431,107</b>	<b>311,257</b>	<b>28%</b>	
	<b>Expenditures</b>																	
5005	Power	110,000	10,391	9,228	9,715	8,279	7,277	8,265	10,197	9,882	10,875	7,982	9,000	9,000	110,091	91	0%	
5010	Maintenance Supplies	20,000	939	831	904	434	811	1,396	1,021	590	1,229	2,718	1,667	1,667	14,208	-5,792	-29%	
5012	Safety Equipment	2,000	0	117	0	587	0	0	0	0	0	0	167	167	1,037	-963	-48%	
5015	Maintenance Labor	165,375	14,008	12,927	13,503	14,003	13,951	12,950	13,563	12,358	13,210	12,957	13,781	13,781	160,993	-4,382	-3%	
5020	Stand-by	11,000	930	870	930	900	930	900	930	510	690	540	480	510	9,120	-1,880	-17%	
5022	Training/Certification	2,400	0	160	150	263	265	250	0	0	311	87	200	200	1,886	-514	-21%	
5025	Water Treatment/Analysis	20,000	1,862	1,986	652	2,873	502	1,165	391	1,320	3,842	598	1,667	1,667	18,525	-1,475	-7%	
5030	Maintenance Contractors	48,000	0	5,450	6,562	206	5,255	18,546	-12,323	1,124	3,525	3,230	4,000	4,000	39,574	-8,426	-18%	
5034	Equipment Maintenance	2,000	0	800	0	0	0	926	0	465	834	1,074	167	167	4,431	2,431	122%	
5035	Vehicle Maintenance	5,500	466	240	136	393	930	2,671	984	0	0	70	458	458	6,806	1,306	24%	
5036	Fuel - All Equipment	8,500	533	763	437	290	628	818	632	614	1,815	616	708	708	8,563	63	1%	
5040	Equipment Rental	500	0	0	0	0	0	0	0	0	0	0	0	500	500	0	0%	
5045	Insurance-Workers Comp.	12,000	0	3,790	3,903	0	0	0	3,991	0	0	2,823	0	0	14,507	2,507	21%	
5046	Insurance-Liability	15,000	1,105	1,105	1,105	1,105	1,105	1,105	1,229	1,229	1,229	7,255	1,250	1,250	20,071	5,071	34%	
5048	Insurance-Property	2,500	186	186	186	186	186	186	186	186	186	186	208	208	2,279	-221	-9%	
5049	Insurance-Medical	43,000	3,261	2,742	2,912	3,391	2,438	2,915	2,921	2,918	3,398	2,437	2,917	2,917	35,167	-7,833	-18%	
6000	Project Engineering	6,000	0	680	340	1,408	0	0	10,010	-9,500	0	0	500	500	3,938	-2,063	-34%	
6005	Watermaster	7,500	0	0	51	661	661	661	661	661	661	661	1,150	1,150	6,977	-523	-7%	
6010	Telemetry	850	68	68	0	135	67	67	67	67	67	67	71	71	814	-36	-4%	
6015	Administrative Salary	92,610	6,945	6,945	6,945	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	7,362	87,092	-5,518	-6%	
6017	Administrative Travel	2,500	663	113	328	642	191	0	356	328	287	698	208	208	4,023	1,523	61%	
6018	Administrative PERS	6,400	449	449	477	506	0	534	506	506	0	506	533	533	5,000	-1,400	-22%	
6020	BofD Compensation	7,000	500	500	700	500	500	400	500	500	900	300	500	900	6,700	-300	-4%	
6021	Administrative Exp.	2,500	0	0	0	0	545	805	0	465	0	668	208	208	2,899	399	16%	
6024	Customer/Public Info. Prog.	4,000	0	163	0	0	15	1,300	250	0	0	0	333	333	2,395	-1,605	-40%	
6025	PERS - KID	11,500	854	786	829	719	0	872	829	840	0	862	958	958	8,508	-2,992	-26%	
6030	Social Security - KID	24,800	2,017	1,891	1,981	2,016	2,040	1,932	1,951	1,943	1,948	1,924	2,067	2,067	23,775	-1,025	-4%	
6035	Office Supplies	9,000	342	287	705	648	1,244	0	217	356	261	118	750	750	5,678	-3,322	-37%	
6036	Postage/Delivery	5,500	235	293	237	105	279	305	337	257	338	256	458	458	3,561	-1,939	-35%	
6040	Professional Dues	7,000	383	427	356	356	856	661	356	356	456	356	583	583	5,730	-1,270	-18%	
6045	Legal	10,000	0	116	0	961	0	63	0	500	0	1,995	833	833	5,302	-4,698	-47%	
6050	Telephone	5,000	415	382	91	665	414	416	421	406	425	428	417	417	4,896	-104	-2%	
6051	Cellular Telephone	2,500	214	118	136	268	135	133	133	140	130	437	208	208	2,260	-240	-10%	

**Kinneloa Irrigation District 2007 Financial Summary (Actual and Forecasted)**

Account	Account Description	2007 Budget	January Actual	February Actual	March Actual	April Actual	May Actual	June Actual	July Actual	August Actual	September Actual	October Actual	November Forecasted	December Forecasted	2007 FYE Forecasted	Budget Amount	
6052	Pagers	1,800	126	126	126	126	128	126	126	142	126	128	150	150	1,577	-223	-12%
6053	Internet Service	1,000	65	65	65	70	65	65	70	70	70	70	83	83	841	-159	-16%
6059	Computer/Software Maintenance	8,000	437	879	732	826	185	0	0	-198	244	934	667	667	5,372	-2,628	-33%
6061	Office Equipment Maintenance	1,000	0	0	0	1,184	0	0	0	0	0	0	83	83	1,351	351	35%
6065	Accounting	7,000	0	4,800	0	0	0	0	0	0	0	0	0	0	4,800	-2,200	-31%
6070	Office Labor	46,200	3,987	3,475	3,816	3,582	3,923	3,646	3,816	4,003	3,416	3,987	3,850	3,850	45,350	-850	-2%
6075	Outside Services	16,000	747	768	687	4,099	4,542	650	1,243	603	671	1,948	1,333	1,333	18,625	2,625	16%
6081	Permits/Fees	2,500	0	225	0	0	0	359	0	0	0	0	208	208	1,001	-1,499	-60%
6120	Bank Service Charges	1,200	0	0	109	65	171	378	-25	43	91	22	100	100	1,054	-146	-12%
	<b>Total Expenses</b>	<b>757,135</b>	<b>52,128</b>	<b>64,753</b>	<b>59,806</b>	<b>59,814</b>	<b>57,601</b>	<b>72,827</b>	<b>52,910</b>	<b>41,045</b>	<b>58,595</b>	<b>66,298</b>	<b>60,286</b>	<b>61,216</b>	<b>707,279</b>	<b>-49,856</b>	<b>-7%</b>
	<b>NET REVENUES</b>	<b>362,715</b>	<b>57,783</b>	<b>22,523</b>	<b>51,509</b>	<b>71,282</b>	<b>38,988</b>	<b>117,814</b>	<b>103,152</b>	<b>112,975</b>	<b>68,787</b>	<b>44,433</b>	<b>25,389</b>	<b>9,191</b>	<b>723,828</b>	<b>361,113</b>	<b>100%</b>

**Other Expenditures and Adjustments**

1200	Inventory	5,000	387	0	0	0	791	2,554	762	0	-45	-1	417	417	5,281	281	6%
1504	Replacement Mains	75,000	0	0	0	0	0	0	0	10,077	1,658	0	12,500	12,500	36,735	-38,265	-51%
1505	Tunnels	0	102,578	5,697	57,268	0	0	0	0	-42,418	0	0	0	0	123,126	123,126	0%
1511	Water Treatment Plant	7,500	0	0	5,038	438	0	0	0	0	9,378	0	0	0	14,855	7,355	98%
1512	Meter Replacement	2,400	0	0	405	925	3,411	0	0	0	4,379	0	200	200	9,520	7,120	297%
1513	Electrical/Electronic Equipment	10,000	27,977	0	0	0	0	0	0	0	0	0	0	0	27,977	17,977	180%
1514	Computer/Office Equipment	3,000	2,763	0	212	0	0	0	0	0	0	0	0	0	2,975	-25	-1%
1515	Truck Equipment	45,000	0	0	0	0	0	0	0	0	0	0	0	0	0	-45,000	-100%
1517	Office	10,000	0	0	0	0	0	0	0	0	0	0	0	2,000	2,000	-8,000	-80%
1527	SCADA	7,500	5,134	0	0	0	0	1,675	0	0	0	0	0	0	6,809	-691	-9%
1528	Tanks and Reservoirs	125,000	19,454	5,891	5,891	18,636	10,596	10,644	11,854	5,891	5,891	5,891	10,417	10,417	121,474	-3,526	-3%
	<b>Total Other Expenditures</b>	<b>290,400</b>	<b>158,295</b>	<b>11,589</b>	<b>68,814</b>	<b>20,000</b>	<b>14,799</b>	<b>14,872</b>	<b>12,616</b>	<b>-26,449</b>	<b>21,260</b>	<b>5,890</b>	<b>23,533</b>	<b>25,533</b>	<b>350,753</b>	<b>60,353</b>	<b>21%</b>

**NET CASH FLOW**

	<b>NET CASH FLOW</b>	<b>72,315</b>	<b>-100,511</b>	<b>10,934</b>	<b>-17,305</b>	<b>51,282</b>	<b>24,189</b>	<b>102,942</b>	<b>90,536</b>	<b>139,425</b>	<b>47,526</b>	<b>38,544</b>	<b>1,856</b>	<b>-16,342</b>	<b>373,075</b>	<b>300,760</b>	<b>416%</b>
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**Kinneloa Irrigation District**  
**Check Register**  
For the Period From October 1, 2007 to October 31, 2007

<b>Date</b>	<b>Check #</b>	<b>Payee</b>	<b>Amount</b>	<b>Description</b>
10/8/07	5181	ACWA/JPIA	12.00	training class
10/8/07	5182	Athens Services	115.51	trash pickup
10/8/07	5183	Charter Communicatic	59.99	Internet service
10/8/07	5184	Perry Thomas Constru	1,436.00	leak repair, Larmona, Villa Knolls
10/8/07	5185	Specialty Services	250.00	janitorial service
10/8/07	5186	Underground Service .	38.00	dig alerts
10/8/07	5187	Utility Service Co., In	5,891.26	tank maintenance
10/8/07	5188	Western Water Works	35.07	maintenance supplies
10/10/07	5190	Markham & Boling Bo	6,025.83	99 accident repair
10/10/07	EFT000	ADP	-84.87	payroll processing credit
10/10/07	EFT001	Arco Gaspro Plus	603.57	truck gas
10/22/07	5191	ACWA Services Corp	4,668.96	medical/dental insurance
10/22/07	5192	Bank of America Busi	1,098.88	office supplies, postage, Peachtree software upgrade, '89 back window repair, AWWA seminar, replace 3 cell phones
10/22/07	5193	Byrd Industrial Electrc	1,074.00	Holly, Vosburg radio telemetry repair
10/22/07	5194	Clinical Laboratory, S	154.00	water analysis
10/22/07	5195	Lagerlof,Senecal,Brad	795.00	review Doreck documents
10/22/07	5196	Melvin L. Matthews	799.60	expense reimbursement
10/22/07	5197	McMaster Carr	797.64	maintenance supplies
10/22/07	5198	Monrovia Mailing Coi	301.42	billing statements and postage
10/22/07	5199	MWH Laboratories	132.00	water analysis
10/22/07	5200	Perry Thomas Constru	1,793.84	repaving at various locations
10/22/07	5201	Southern California Ec	9,786.75	power
10/22/07	5202	Lagerlof,Senecal,Brad	1,200.00	Sage/West property matters
10/22/07	5203	McMaster Carr	85.13	water analysis
10/22/07	5204	MWH Laboratories	118.80	water analysis
10/22/07	EFT002	Earthlink Network	4.95	Internet service
10/22/07	EFT010	ADP	85.17	payroll processing
10/22/07	EFT005	AT&T	46.37	telephone
10/22/07	EFT006	AT&T	93.84	telephone
10/22/07	EFT007	AT&T	139.77	telephone
10/22/07	EFT008	AT&T	66.91	telemetry line
10/22/07	EFT009	AT&T	70.30	telephone
10/23/07	5205	Kinneloa Irrigation Di	100,000.00	transfer to LAIF
10/23/07	5206	Melvin L. Matthews	1,190.42	expense reimbursement
10/23/07	EFT014	Shirley L. Burt	1,361.80	payroll
10/23/07	62621437	Brian Fry	1,335.45	payroll
10/23/07	62621438	Felix Galindo	461.97	payroll
10/23/07	EFT015	Melvin L. Matthews	2,817.83	payroll

**Kinneloa Irrigation District**  
**Check Register**  
For the Period From October 1, 2007 to October 31, 2007

10/23/07	62621439	Chris Mellinger	440.58	payroll
10/23/07	EFT011	Christopher A. Burt	125.00	payroll
10/23/07	EFT013	Christopher A. Burt	2,127.66	payroll
10/23/07	EFT012	ADP	3,658.02	payroll taxes
10/24/07	5205V	Kinneloa Irrigation Di	-100,000.00	transfer to LAIF -void check
10/24/07	5207	KINNELOA IRRIG. I	100,000.00	transfer to Bank of the West
10/24/07	EFT016	Kinneloa Irrigation Di	100,000.00	transfer to LAIF
10/24/07	5208	Kinneloa Mesa Associ	750.00	net deposit refund for construction meter
10/24/07	5209	ACWA/JPIA	2,823.00	workers' compensation
10/24/07	5210	Aramark	287.11	shop rag service
10/26/07	5211	Phillips 66-Conoco-76	21.00	truck gas
10/31/07	EFT025	Richard L. Barkhurst	92.35	payroll
10/31/07	EFT020	Christopher A. Burt	2,388.78	payroll
10/31/07	EFT023	Shirley L. Burt	1,498.94	payroll
10/31/07	62667111	Brian Fry	1,611.44	payroll
10/31/07	62667112	Felix Galindo	499.43	payroll
10/31/07	EFT021	Melvin L. Matthews	2,817.83	payroll
10/31/07	62667113	Chris Mellinger	256.01	payroll
10/31/07	EFT022	Maurice Pickard	92.35	payroll
10/31/07	EFT024	Steve Sorell	57.35	payroll
10/31/07	EFT017	ADP	90.65	payroll processing
10/31/07	EFT018	Christopher A. Burt	125.00	payroll
10/31/07	EFT019	ADP	<u>4,166.69</u>	payroll taxes
	<b>Total</b>		<b><u><u>268,792.35</u></u></b>	

**Kinneloa Irrigation District**  
**CAPITAL PROJECTS**  
**For the Period From Jan 1, 2006 to Dec 31, 2007**

Filter Criteria includes: 1) IDs from 2006 Chlorine Analyz to 2007 Office. Report order is by ID. Report is printed with Accounts having Zero Amounts and including Balance Forward.

Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals	Est Expenses
2006 Chlorine Analyz	WaterTreatment Plan	7/27/06	A&B Electric - K-3 Chlorine Analyzer and feed pump install	3,320.25		
		12/15/06	Matt Chlor Inc. - Cl2 analyzer for wilcox well	2,516.15		
		3/12/07	Matt Chlor Inc. - Chlorine Residual Analyzer	2,519.15		
		3/27/07	Matt Chlor Inc. - Chlorine Analyzer	2,519.15		
		4/13/07	A&B Electric - install receptacle for Chorine Analyzer at Glen Reservoir	296.45		
	Electrical/Electronic E	1/24/07	A&B Electric - Wilcox Well electrical	1,630.00		
		1/24/07	A&B Electric - Wilcox Well electrical	234.23		
	SCADA	4/3/06	Matt Chlor Inc. - chlorine analyzer	2,511.17		
		7/20/06	Matt Chlor Inc. - Chlorine Analyzer in NEMA 4X enclosure	3,613.85		
		10/9/06	Matt Chlor Inc. - Chlorine residual anlyzer	2,519.15		
		6/21/07	Byrd Industrial Electronics - Eucalyptus SCADA upgrade for Cl2 installation	1,674.63		
	Outside Services	9/15/06	A&B Electric - Chlorine tank level hookup to SCADA	644.07		
					<b>23,998.25</b>	
	<b>2006 Chlorine Analyz</b>				<b>23,998.25</b>	<b>15,000.00</b>
	2006 Electrical	Electrical/Electronic E	1/24/07	A&B Electric - East Tank electrical	8,124.00	
1/25/07			A&B Electric - East Tank Electrical	3,336.30		
Tanks and Reservoirs		8/17/06	A&B Electric - East Tank Power Pole	3,650.00		
		6/15/07	A&B Electric - eucalyptus electrical upgrade for flo-loc and chlorine analyzer	3,078.00		
					<b>18,188.30</b>	
<b>2006 Electrical</b>				<b>18,188.30</b>	<b>20,000.00</b>	
2006 Flo-Loc	Electrical/Electronic E	10/25/06	A&B Electric - Holly Tank electrical work	8,176.12		
		1/1/07	A&B Electric - vosburg electrical	8,184.36		
		1/1/07	A&B Electric - Vosburg electrical (continued) upgrades	6,468.52		
	Tanks and Reservoirs	7/12/06	Flo-Loc, Inc. - Holly East Tank	23,078.00		
		7/12/06	Flo-Loc, Inc. - Holly West Tank	13,528.00		
		9/22/06	Flo-Loc, Inc. - Valve for Vosburg Reservoir	18,741.00		
		12/1/06	Flo-Loc, Inc. - East Tank	12,855.00		
		1/18/07	Flo-Loc, Inc. - Flo-Loc for Glen Reservoir	13,563.00		
		4/9/07	Flo-Loc, Inc. - valve for Eucalyptus	12,745.00		
		5/3/07	Flo-Loc, Inc. - brackets and vandal proof enclosure for Eucalyptus	1,702.00		
		5/25/07	Byrd Industrial Electronics - SCADA install at eucalyptus for Flo Loc and Chlorine Analyzer	3,003.00		
		6/21/07	Byrd Industrial Electronics - Eucalyptus SCADA upgrade for flo-loc installation	1,674.63		
		7/27/07	A&B Electric - Eucalyptus Reservoir electrical work for Flo-Loc install	5,963.00		

**Kinneloa Irrigation District**  
**CAPITAL PROJECTS**  
**For the Period From Jan 1, 2006 to Dec 31, 2007**

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Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals	Est Expenses
	Maintenance Contrac	10/25/06	A&B Electric - Holly Tank electrical work	4,991.00		
		6/8/07	Perry Thomas Construction Co., - Eucalyptus concrete pad for flo-loc	2,567.35		
	Outside Services	9/15/06	A&B Electric - Hook up Flo-Loc to SCADA	560.55		
					<b>137,800.53</b>	
<b>2006 Flo-Loc</b>					<b>137,800.53</b>	<b>118,000.00</b>
2006 Hi/Low Pressure	Water Tunnels	6/1/06	Civiltec Engineering, Inc. - FEMA tunnel repair engineering	320.00		
		11/7/06	Doty Bros. Equipment Co. - Hi-Low progress payment less retention	68,215.50		
		1/1/07	Doty Bros. Equipment Co. - Hi/Lo FEMA OES Project	79,428.09		
		3/29/07	Doty Bros. Equipment Co. - Hi/Lo tunnels final invoice less retention	36,776.73		
	Disaster Assistance	3/29/07	Doty Bros. Equipment Co. - Hi/Lo Tunnel retention	20,491.15		
		2/1/06	State of California-OES - FEMA/OES Disaster Assistance	-5,770.00		
		3/26/07	State of California-OES - FEMA/OES reimbursement	-9,940.00		
		3/31/07	Hi/Lo Tunnel- to post previous FEMA/OES Disaster Assistance to Job	-24,615.00		
		4/23/07	State of California-OES - Hi/Lo tunnel reimbursement	-38,930.00		
		6/1/07	State of California-OES - FEMA/OES reimbursement	-2,740.00		
		6/1/07	State of California-OES - FEMA/OES reimbursement	-87,045.00		
		8/22/07	State of California-OES - FEMA/OES reimbursement	-12,977.00		
		8/22/07	State of California-OES - FEMA/OES reimbursement	-3,425.00		
		8/22/07	State of California-OES - FEMA/OES reimbursement	-30,825.00		
	Project Engineering	9/1/07	State of California-OES - Disaster Assistance	-3,313.00		
		3/13/06	Civiltec Engineering, Inc. - High/Low Pressure Tunnel Plans	2,752.50		
		4/6/06	Civiltec Engineering, Inc. - FEMA project engineering-Hi-Lo tunnel	712.50		
		5/5/06	Civiltec Engineering, Inc. - Hi/Lo pressure tunnel repair engineering	640.00		
		5/5/06	Civiltec Engineering, Inc. - Hi/Lo pressure tunnel engineering	320.00		
		7/6/06	Civiltec Engineering, Inc. - FEMA tunnel project engineering	4,040.00		
		7/6/06	Civiltec Engineering, Inc. - Hi/Lo tunnel engineering	6,795.00		
					<b>911.47</b>	

**Kinneloa Irrigation District**  
**CAPITAL PROJECTS**  
**For the Period From Jan 1, 2006 to Dec 31, 2007**

Filter Criteria includes: 1) IDs from 2006 Chlorine Analyz to 2007 Office. Report order is by ID. Report is printed with Accounts having Zero Amounts and including Balance Forward.

Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals	Est Expenses
<b>2006 Hi/Low Pressure</b>					<b>911.47</b>	<b>220,491.47</b>
2006 House Tunnel	Water Tunnels	6/1/06	Civiltec Engineering, Inc. - House Tunnel FEMA project engineering	160.00		
		6/1/06	Civiltec Engineering, Inc. - house tunnel engineering	712.50		
		11/7/06	Doty Bros. Equipment Co. - House Tunnel progress payment less retention	29,025.00		
		1/1/07	Doty Bros. Equipment Co. - House Tunnel FEM/OES Project	22,250.65		
		2/1/07	Doty Bros. Equipment Co. - Retention billing for House Tunnel Project	5,697.29		
	Disaster Assistance	3/31/07	House Tunnel- to post previous FEMA/OES Disaster Assistance to Job	-43,350.00		
		3/31/07	House Tunnel- to post previous FEMA/OES Disaster Assistance to Job	-17,313.00		
	Project Engineering	3/13/06	Civiltec Engineering, Inc. - House Tunnel Plans	2,005.00		
		8/7/06	Civiltec Engineering, Inc. - House Tunnel plans	1,334.20		
		9/6/06	Civiltec Engineering, Inc. - House Tunnel FEMA Project Engineering	320.00		
					<b>841.64</b>	
<b>2006 House Tunnel</b>					<b>841.64</b>	<b>61,504.64</b>
2007 New York Main	Mains	8/17/07	Bank of America Business Card - duplicating of plans and specifications	424.20		
		8/17/07	Bank of America Business Card - postage for sending plans and specifications to contractors	153.15		
		9/28/07	SA Associates - Attendance at bid opening and evaluation	1,658.00		
	Project Engineering	7/20/07	SA Associates - Design of New York Drive Water Main	9,500.00		
	Office Supplies	9/13/07	Bank of America Business Card - office supplies-K-3	112.70		
	Postage/Delivery	9/13/07	Bank of America Business Card - postage- k-3	54.88		
					<b>11,902.93</b>	
<b>2007 New York Main</b>					<b>11,902.93</b>	<b>75,000.00</b>
2007 Office	Hidden Valley Office	5/19/06	D&G Roofing - Office Roof	5,880.00		
	Outside Services	4/10/07	Barbara Simon - consultation	150.00		
		5/8/07	Barbara Simon - Office renovation consultation	450.00		
					<b>6,480.00</b>	
<b>2007 Office</b>					<b>6,480.00</b>	<b>20,000.00</b>

**Kinneloa Irrigation District**  
**CAPITAL PROJECTS**  
**For the Period From Jan 1, 2006 to Dec 31, 2007**

Filter Criteria includes: 1) IDs from 2006 Chlorine Analyz to 2007 Office. Report order is by ID. Report is printed with Accounts having Zero Amounts and including Balance Forward.

<b>Job ID</b>	<b>GL Acct Description</b>	<b>Trx Date</b>	<b>Trans Description</b>	<b>Amount</b>	<b>Totals</b>	<b>Est Expenses</b>
<b>Report</b>					<u><u>200,123.12</u></u>	<u><u>529,996.11</u></u>

**Kinneloa Irrigation District**  
**FACILITY MAINTENANCE AND REPAIR**  
**For the Period From Jan 1, 2007 to Dec 31, 2007**

Filter Criteria includes: 1) IDs from to ; 2) Types from Facility to Facility. Report order is by ID. Report is printed with Accounts having Zero Amounts and including Balance Forward.

Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals
Delores Tunnel					
<b>Delores Tunnel</b>					
Eucalyptus Reservoir	Maintenance Contrac	2/5/07	Aqua Video Engineering - Clean and inspect Eucalyptus Reservoir	2,725.00	
	Outside Services	10/26/07	A&B Electric - Install SCE Radio TOU switch	1,395.60	
					<b>4,120.60</b>
<b>Eucalyptus Reservoir</b>					<b>4,120.60</b>
Eucalyptus Tunnel	Trans. & Dist. Plant M	4/20/07	Measurement Control Systems, I - Meter for Eucalytus Tunnel	405.24	
					<b>405.24</b>
<b>Eucalyptus Tunnel</b>					<b>405.24</b>
Glen Reservoir	Outside Services	7/17/07	Business Card - Roto Rooter- unlog area and long tunnel drain pipe to glen wash	462.50	
					<b>462.50</b>
<b>Glen Reservoir</b>					<b>462.50</b>
Hidden Valley Office					
<b>Hidden Valley Office</b>					
High/Low Pressure					
<b>High/Low Pressure</b>					
Holly Reservoir	Equipment Maintena	10/5/07	Byrd Industrial Electronics - solve holly and vosburg radio problems	1,074.00	
					<b>1,074.00</b>
<b>Holly Reservoir</b>					<b>1,074.00</b>
House Tunnel	Water Tunnels	1/5/07	Byrd Industrial Electronics - House Tunnel Meter SCADA upgrade	899.68	

**Kinneloa Irrigation District**  
**FACILITY MAINTENANCE AND REPAIR**  
**For the Period From Jan 1, 2007 to Dec 31, 2007**

Filter Criteria includes: 1) IDs from to ; 2) Types from Facility to Facility. Report order is by ID. Report is printed with Accounts having Zero Amounts and including Balance Forward.

Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals
					<b>899.68</b>
<b>House Tunnel</b>					<b>899.68</b>
K-3 Well	Maintenance Supplie	1/11/07	McMaster Carr - supplies for eyewash install at K-3	436.23	
		1/11/07	Ferguson Enterprises, Inc. - fitting for eyewash install at K03	38.81	
		6/23/07	Stanley Security Solutions, In - locks	21.52	
		6/23/07	Stanley Security Solutions, In - k-3 door handle	96.82	
		8/17/07	Bank of America Business Card - maintenance supplies	437.98	
		1/12/07	Water Treatment/Ana Matt Chlor Inc. - Replacement Cl2 tubing for K-3	111.61	
		3/14/07	McMaster Carr - misc fitting for K-3 chlorinator	72.81	
					<b>1,215.78</b>
<b>K-3 Well</b>					<b>1,215.78</b>
Long Tunnel					
<b>Long Tunnel</b>					
Sage Tank	Maintenance Supplie	3/13/07	Western Water Works - Air release valve for sage	143.32	
					<b>143.32</b>
<b>Sage Tank</b>					<b>143.32</b>
Tent Tunnel					
<b>Tent Tunnel</b>					
Vosburg Reservoir	Equipment Maintena	2/16/07	Byrd Industrial Electronics - SCADA radio and SCADAPack repair	800.00	
					<b>800.00</b>
<b>Vosburg Reservoir</b>					<b>800.00</b>
West Tank					
<b>West Tank</b>					
Wilcox Reservoir	Maintenance Contrac	2/5/07	Aqua Video Engineering - Clean and Inspect	2,725.00	

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Job ID	GL Acct Description	Trx Date	Trans Description	Amount	Totals
			Wilcox Reservoir		<b>2,725.00</b>
<b>Wilcox Reservoir</b>					<b>2,725.00</b>
Wilcox Well	SCADA	1/26/07	Byrd Industrial Electronics - Wilcox Well SCADA Upgrade	2,288.88	
	Maintenance Supplie	3/8/07	McMaster Carr - Vinyl Tarp for Wilcox Well oil drum	151.77	
	Water Treatment/Ana	2/22/07	Matt Chlor Inc. - Chlorine Analyzer repair-membrane caps	356.69	
					<b>2,797.34</b>
<b>Wilcox Well</b>					<b>2,797.34</b>
<b>Report</b>					<b>14,643.46</b>