

## City of Calistoga

## 2009 Water Rate Study

## Water System Costs

## Cost Assumptions (control)

Labor- to FY 11	3.5%	Serv/Sup to FY15	3.0%
Labor- FY 12 on	2.0%	Energy	5.0%
Serv/Sup to FY12	0.0%	NBA Water	3.5%
Serv/Sup to FY13	1.0%	Depreciation	Flat - non Cash
Serv/Sup to FY14	2.0%	Water Use	Development Projections

	FY 09-10 Budget	FY 10-11 Projected	FY 11-12 Projected	FY 12-13 Projected	FY 13-14 Projected	FY 14-15 Projected
		1	2	3	4	5
<b>Summary</b>						
Operations (less Depreciation)	1,920,300	1,969,738	2,013,658	2,094,696	2,157,316	2,228,873
Special Projects	51,250	101,565	112,588	134,005	146,073	148,568
Debt Service	572,126	657,572	736,659	731,673	771,378	823,339
Equipment - Funded from Connection Revenues	42,000	50,000	50,000	50,000	50,000	50,000
Capital Improvements - Funded from Connections & Debt	2,056,000	4,801,971	560,000	725,000	570,000	125,000
<b>Total Costs</b>	<b>4,641,676</b>	<b>7,580,847</b>	<b>3,472,905</b>	<b>3,735,373</b>	<b>3,694,767</b>	<b>3,375,780</b>

Allocation of Operations and Debt Costs  
between fixed Monthly Service Charges and  
variable Volume Charges

Operations & Special Projects	1,971,550	2,071,304	2,126,246	2,228,701	2,303,388	2,377,442
Est Percent Fixed - from flat Monthly Service Charges	30%	35%	35%	35%	35%	36%
Est Percent Variable - from use of water	70%	65%	65%	65%	65%	64%
Debt Service - 100% Fixed	572,126	657,572	736,659	731,673	771,378	823,339
<b>Total to be recovered from User Charges</b>	<b>2,543,676</b>	<b>2,728,876</b>	<b>2,862,905</b>	<b>2,960,373</b>	<b>3,074,767</b>	<b>3,200,780</b>
	3%	7%	5%	3%	4%	4%

## Allocation of Costs

Fixed	1,163,591	1,378,795	1,477,012	1,507,701	1,573,413	1,675,939
Variable	1,380,085	1,350,081	1,385,892	1,452,673	1,501,354	1,524,841
<b>Total to be recovered from User Charges</b>	<b>2,543,676</b>	<b>2,728,876</b>	<b>2,862,905</b>	<b>2,960,373</b>	<b>3,074,767</b>	<b>3,200,780</b>

## Fixed Costs

Fixed Costs	1,163,591	1,378,795	1,477,012	1,507,701	1,573,413	1,675,939
Less Portion of Est. Connection Fees [1]	(98,175)	(22,778)	(56,200)	(300,807)	(300,686)	(338,570)
Less Other Sources of Revenues [2]	(379,850)	(368,994)	(359,094)	(348,106)	(337,075)	(326,000)

Net Fixed Costs to be recovered from Mthly  
Service Charges

<b>Net Fixed Costs to be recovered from Mthly Service Charges</b>	<b>685,566</b>	<b>987,023</b>	<b>1,061,718</b>	<b>858,788</b>	<b>935,652</b>	<b>1,011,369</b>
Revenues from Fixed Charges						
Fixed Monthly Service Charges	735,201	690,916	743,203	601,151	654,956	707,958
% of Fixed Costs from Monthly Service Charges	107%	70%	70%	70%	70%	70%
% of All Costs recovered from Monthly Service Charge	29%	25%	26%	20%	21%	22%

-6% 8% -19% 9% 8%

## Variable Costs

Variable Costs	1,380,085	1,350,081	1,385,892	1,452,673	1,501,354	1,524,841
Remainder of Fixed Costs	(49,635)	296,107	318,516	257,636	280,696	303,411
<b>Total</b>	<b>1,330,450</b>	<b>1,646,188</b>	<b>1,704,408</b>	<b>1,710,309</b>	<b>1,782,050</b>	<b>1,828,252</b>

## Less Other Sources of Revenues [2]

Less Other Sources of Revenues [2]	(157,000)	(157,000)	(157,000)	(157,000)	(157,000)	(157,000)
<b>Net Costs to be recovered from Variable Use Charges</b>	<b>1,173,450</b>	<b>1,489,188</b>	<b>1,547,408</b>	<b>1,553,309</b>	<b>1,625,050</b>	<b>1,671,252</b>

% of Net Costs from Variable Charges	88%	90%	91%	91%	91%	91%
% of All Costs recovered from Variable Charges	46%	55%	54%	52%	53%	52%

Table \_\_\_\_\_  
**Water System Costs**

**Cost Assumptions (control)**

Labor- to FY 11	3.5%	Serv/Sup to FY15	3.0%
Labor- FY 12 on	2.0%	Energy	5.0%
Serv/Sup to FY12	0.0%	NBA Water	3.5%
Serv/Sup to FY13	1.0%	Depreciation	Flat - non Cash
Serv/Sup to FY14	2.0%	Water Use	Development Projections

**Allocation of Operating Cost by Sources of Revenue**

	FY 09-10 Budget	FY 10-11 Projected	FY 11-12 Projected	FY 12-13 Projected	FY 13-14 Projected	FY 14-15 Projected
User Fees						
Fixed	735,201	690,916	743,203	601,151	654,956	707,958
Variable	1,173,450	1,489,188	1,547,408	1,553,309	1,625,050	1,671,252
Grants for Debt Service	379,850	368,994	359,094	348,106	337,075	326,000
Other Sources	157,000	157,000	157,000	157,000	157,000	157,000
Portion of Connection Fees	98,175	22,778	56,200	300,807	300,686	338,570
<b>Total</b>	<b>2,543,676</b>	<b>2,728,876</b>	<b>2,862,905</b>	<b>2,960,373</b>	<b>3,074,767</b>	<b>3,200,780</b>

User Fees						
Fixed	29%	25%	26%	20%	21%	22%
Variable	46%	55%	54%	52%	53%	52%
Grants for Debt Service	15%	14%	13%	12%	11%	10%
Other Sources	6%	6%	5%	5%	5%	5%
Portion of Connection Fees	4%	1%	2%	10%	10%	11%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**North Bay Aqueduct Wholesale Cost of Water**

Projection of Water Purchase (in acre feet)	527	524	525	553	561	572
Fixed Charges from State	209,583	215,422	223,625	243,805	256,099	270,215
Volume Charges From State, County and Napa City	377,217	387,726	402,490	438,811	460,937	486,345
One Time						
<b>Total Cost of Purchased Water</b>	<b>586,800</b>	<b>603,148</b>	<b>626,116</b>	<b>682,617</b>	<b>717,036</b>	<b>756,560</b>
Cost per af						
Fixed	397.58	411.49	425.90	440.80	456.23	472.20
Variable	715.58	740.62	766.55	793.37	821.14	849.88
Total	1,113.16	1,152.12	1,192.44	1,234.18	1,277.37	1,322.08
Cost per hcf						
Fixed	0.91	0.94	0.98	1.01	1.05	1.08
Variable	1.64	1.70	1.76	1.82	1.89	1.95
Total	2.56	2.64	2.74	2.83	2.93	3.04



Water System Costs

Cost Assumptions (control)			
Labor- to FY 11	3.5%	Serv/Sup to FY15	3.0%
Labor- FY 12 on	2.0%	Energy	5.0%
Serv/Sup to FY12	0.0%	NBA Water	3.5%
Serv/Sup to FY13	1.0%	Depreciation	Flat - non Cash
Serv/Sup to FY14	2.0%	Water Use	Development Projections

FY 09-10 Budget	FY 10-11 Projected	FY 11-12 Projected	FY 12-13 Projected	FY 13-14 Projected	FY 14-15 Projected
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Costs Details

Operations

Water Distribution

Personnel Costs	382,150	395,525	403,436	411,504	419,735	428,129
Services & Supplies	103,200	103,200	103,200	103,991	105,589	108,033
Depreciation	176,200	176,200	176,200	176,200	176,200	176,200
Other	-	-	-	-	-	-
<b>Total</b>	<b>661,550</b>	<b>674,925</b>	<b>682,836</b>	<b>691,695</b>	<b>701,523</b>	<b>712,363</b>
	7%	2%	1%	1%	1%	2%

Water Treatment

Personnel Costs	477,300	494,006	503,886	513,963	524,243	534,727
Services & Supplies	310,650	310,650	310,650	312,932	317,540	324,591
Energy	60,200	63,210	66,371	69,689	73,173	76,832
Wholesale Water	586,800	603,148	626,116	682,617	717,036	756,560
Depreciation	173,000	173,000	173,000	173,000	173,000	173,000
Other	-	-	-	-	-	-
<b>Total</b>	<b>1,607,950</b>	<b>1,644,013</b>	<b>1,680,022</b>	<b>1,752,201</b>	<b>1,804,992</b>	<b>1,865,711</b>
	0%	2%	2%	4%	3%	3%

Total Operations

Total Operations	2,269,500	2,318,938	2,362,858	2,443,896	2,506,516	2,578,073
Less Depreciation	(349,200)	(349,200)	(349,200)	(349,200)	(349,200)	(349,200)
<b>Net Operations</b>	<b>1,920,300</b>	<b>1,969,738</b>	<b>2,013,658</b>	<b>2,094,696</b>	<b>2,157,316</b>	<b>2,228,873</b>
	2%	3%	2%	4%	3%	3%

Special Projects

Flood Emergency	-	-	-	-	-	-
Water Conservation	35,350	55,268	55,633	56,376	57,503	59,035
Water Studies	15,900	46,298	56,955	77,629	88,570	89,534
<b>Total Special Projects</b>	<b>51,250</b>	<b>101,565</b>	<b>112,588</b>	<b>134,005</b>	<b>146,073</b>	<b>148,568</b>
	-41%	98%	11%	19%	9%	2%

Debt Service

Debt Service	572,126	657,572	736,659	731,673	771,378	823,339
	13%	15%	12%	-1%	5%	7%

Equipment

Equipment	42,000	50,000	50,000	50,000	50,000	50,000
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Capital Projects

Distribution	2,031,000	4,787,971	540,000	725,000	250,000	125,000
Treatment	25,000	14,000	20,000	-	320,000	-
<b>Total Capital Projects</b>	<b>2,056,000</b>	<b>4,801,971</b>	<b>560,000</b>	<b>725,000</b>	<b>570,000</b>	<b>125,000</b>

<b>Total</b>	<b>4,641,676</b>	<b>7,580,847</b>	<b>3,472,905</b>	<b>3,735,373</b>	<b>3,694,767</b>	<b>3,375,780</b>
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Table \_\_\_\_\_  
**Water System Costs**

<b>Cost Assumptions (control)</b>			
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FY 09-10 Budget	FY 10-11 Projected	FY 11-12 Projected	FY 12-13 Projected	FY 13-14 Projected	FY 14-15 Projected
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1] Estimate of projected Connection fees from new/expanded development that are allocated to retire portion of debt issued for improvements that proportionally benefit new/expanded development.

2] The other revenues include Measure A Grant funding of Kimball Pipeline/Reservoir debt Service, sale of property, interest earnings and miscellaneous revenues.

PRELIMINARY DRAFT

Table \_\_\_\_\_  
**Capital Improvement Projects**

Fd	Proj	Description	Revised FY 09-10	Projected FY 10-11	Projected FY 11-12	Projected FY 12-13	Projected FY 13-14	Projected FY 14-15
				1	2	3	4	5
<b>Distribution</b>								
12	5227	Pipeline-Myrtledeale/Grant/Kimball Main	10,000	75,000	-	-	-	-
12	5232	Mt. Washington Water Tank	1,946,000	4,127,971	-	-	-	-
12	5418	NBA Pump Station (Dwyer Road)	75,000	400,000	100,000	-	-	-
12	5491	Replacement Mains Various Loc	-	-	-	150,000	200,000	-
12	5416	Polybutylene Service Replacement	-	50,000	-	75,000	-	75,000
12	5419	Repair Fiege Tank	-	-	60,000	300,000	-	-
12	5201	Silverado Trail Valves / Shut Off Valves	-	60,000	30,000	-	-	-
12	5220	2nd St Water Main	-	-	-	-	-	-
12	5476	Automatic Meter Read Program	-	50,000	50,000	50,000	50,000	50,000
12	5476	NBA Cathodic Protection Survey	-	25,000	150,000	-	-	-
	Proj	Water Master Plan	-	-	150,000	150,000	-	-
<b>Subtotal Water Distribution</b>			<b>2,031,000</b>	<b>4,787,971</b>	<b>540,000</b>	<b>725,000</b>	<b>250,000</b>	<b>125,000</b>
<b>Treatment</b>								
	5411	Dredge Kimball Reservoir	-	-	-	-	200,000	-
	5424	Kimball Spillway Safety Impv & WTP Upgrades	-	-	-	-	-	-
12	5426	Storage Building - Kimball	-	-	-	-	-	-
12	5429	Pump Protection - Kimball	-	-	20,000	-	-	-
12	5457	Chemical Tank Cover	-	-	-	-	-	-
12	5459	Treatment System Security Improvements	-	-	-	-	120,000	-
12	5491	SCADA Conversion to Radio Telemetry	-	-	-	-	-	-
12	5492	Pope St Pump Station Telemetry Update	-	14,000	-	-	-	-
	Proj	Kimball Inflow Measurement	25,000	-	-	-	-	-
<b>Subtotal Water Treatment</b>			<b>25,000</b>	<b>14,000</b>	<b>20,000</b>	<b>-</b>	<b>320,000</b>	<b>-</b>
<b>Total Water Capital Improvements</b>			<b>2,056,000</b>	<b>4,801,971</b>	<b>560,000</b>	<b>725,000</b>	<b>570,000</b>	<b>125,000</b>

**Project costs for Financing Option A - \$1,250,000**



Table \_\_\_\_\_

Water Debt Issues - Current and Proposed

Debt Issues	Adopted FY 09-10	Projected FY 10-11	Projected FY 11-12	Projected FY 12-13	Projected FY 13-14	Projected FY 14-15
<b>Existing Debt</b>						
<b>1972 Revenue Bond - USDA (Water System Improvements) -Balance paid in advance of January 1, 2012 maturity</b>						
Total Annual Payments						
<b>1983 Revenue Bond - USDA (Water System Improvements) -Balance paid off and refinanced October 2005</b>						
Total Annual Payments						
<b>CSCDA 2005D Water Revenue Bond (Refinanced 1983 USDA Bonds and \$1.5 million for Water Tank</b>						
Original Amount - \$5,290,000						
Matures - October 1, 2036; Interest Rate - 2.75 to 4.625%						
Outstanding Balance at 6/30	4,700,000	4,550,000	4,395,000	4,240,000	4,085,000	3,930,000
Total Annual Payments	357,566	358,397	358,897	354,150	354,150	354,150
<b>USDA Phase 1 Loan (Kimball Pipeline and Water Treatment Plant Improvements)</b>						
Original Amount - \$2,511,170						
Matures - March 1, 2048; Interest Rate -4.375%						
Outstanding Balance at 6/30	2,463,000	2,437,000	2,409,000	2,380,000	2,350,000	2,319,000
Total Annual Payments	133,484	133,375	134,208	133,969	133,684	133,358
<b>Equipment Lease - SunTrust Master Lease Schedule #2 - Vehicles</b>						
Original Amount - \$41,000						
Matures - May 31, 2010; Interest Rate - 5%						
Outstanding Balance at 6/30	(0)					
Total Annual Payments	17,376					
<b>Existing Outstanding Balance at 6/30</b>	7,163,000	6,987,000	6,804,000	6,620,000	6,435,000	6,249,000
<b>Existing Annual Debt Payments</b>	508,426	491,772	493,105	488,119	487,834	487,508

Table \_\_\_\_\_

Water Debt Issues - Current and Proposed

Debt Issues	Adopted FY 09-10	Projected FY 10-11	Projected FY 11-12	Projected FY 12-13	Projected FY 13-14	Projected FY 14-15
<b>New Debt</b>						
<b>Water Tank Improvements - USDA</b>						
Assumed Years Maturity	40					
Assumed Interest Rate %	2.63%					
Net Proceeds for Project Costs	3,700,000	-	-	-	-	-
Cost of Issuance	50,000	-	-	-	-	-
Assumed Outstanding Balance at 6/30	3,750,000	3,750,000	3,696,098	3,640,772	3,583,984	3,525,695
Total Assumed Annual Payments	12,200	134,300	152,985	152,985	152,985	152,985
<b>Finance Option A - NBA Related &amp; Fiege Tank Improvements</b>						
Assumed Years Maturity	20					
Assumed Interest Rate %	5.00%					
Net Proceeds for Project Costs		1,110,000	-	-	-	-
Cost of Issuance		-	-	-	-	-
Assumed Outstanding Balance at 6/30		1,110,000	1,076,431	1,041,183	1,004,183	965,323
Total Assumed Annual Payments		-	89,069	89,069	89,059	89,068
<b>Finance Option B - Main Replacement and Polybutylene Line Replacements</b>						
Assumed Years Maturity	20					
Assumed Interest Rate %	5.00%					
Net Proceeds for Project Costs						
Cost of Issuance						
Assumed Outstanding Balance at 6/30						
Total Assumed Annual Payments						
<b>Proposed Outstanding Balance at 6/30</b>	3,750,000	4,860,000	4,772,529	4,681,955	4,588,167	4,491,018
<b>Proposed Annual Debt Payments</b>	12,200	134,300	242,054	242,054	242,044	242,053
<b>Total Debt - Existing and Proposed</b>						
<b>Outstanding Balance at 6/30</b>	10,913,000	11,847,000	11,576,529	11,301,955	12,173,167	11,832,518
<b>Total Annual Debt Payments</b>	520,626	626,072	735,159	730,173	729,878	821,839
<b>USDA Reserve Requirement</b>	30,783	57,550	86,269	114,965	143,632	172,266

Table 3  
Water Production in Acre Feet [1]

	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	Average of Five Years
<b>Sources</b>						
<b>Kimball Reservoir &amp; Treatment Plant</b>	358.03	474.38	385.34	256.94	246.33	344.20
% Annual Change		32%	-19%	-33%	-4%	
% of Total Production	48%	54%	47%	32%	31%	43%
<b>North Bay Aqueduct</b>	393.67	397.19	426.60	550.46	554.95	464.57
% Annual Change		1%	7%	29%	1%	
% of Total Production	52%	46%	53%	68%	69%	57%
<b>Total Water Production</b>	751.70	871.57	811.94	807.40	801.28	808.78
% Annual Change		16%	-7%	-1%	-1%	

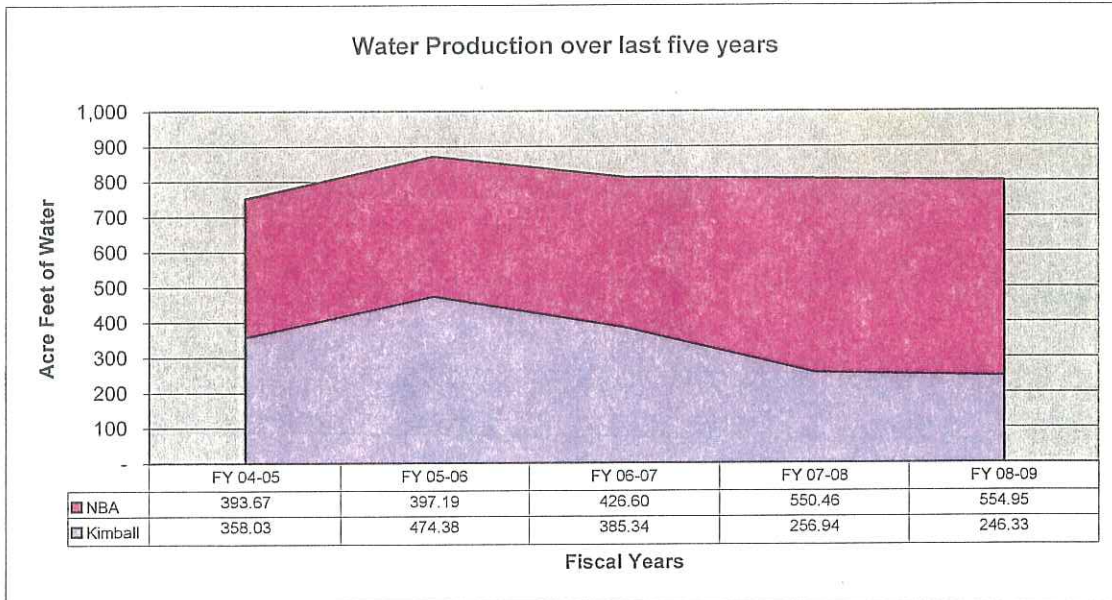
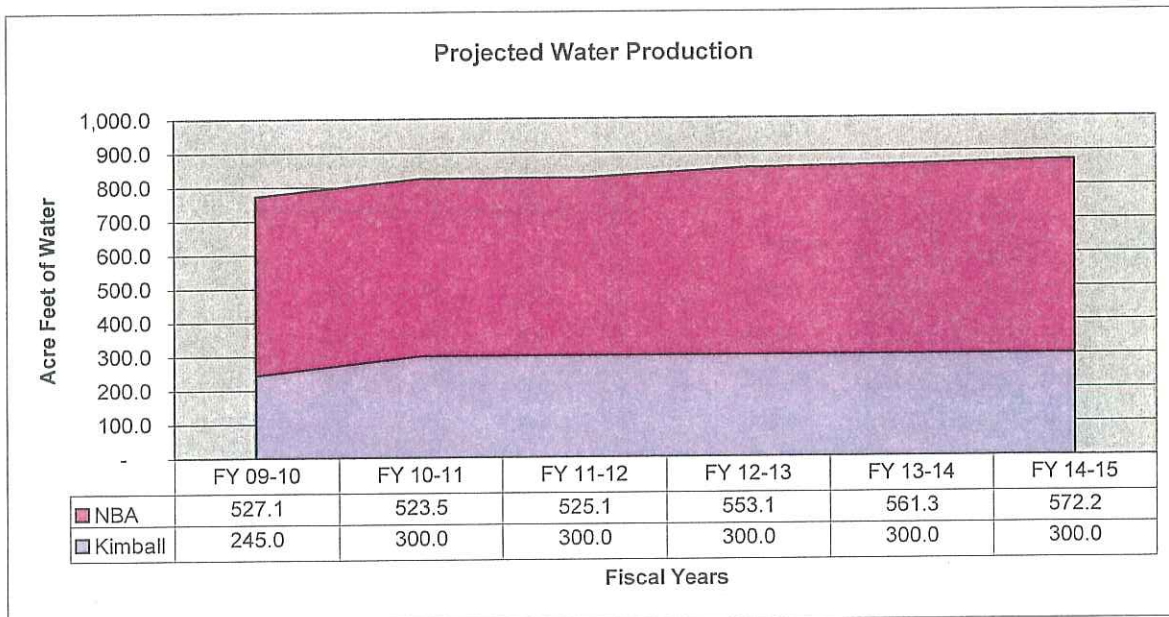




Table 3  
Water Production in Acre Feet [1]

	Projection of Water Production					
	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15
		1	2	3	4	5
<b>Projection Assumptions</b>						
From Prior Year	770.0	822.8	823.5	825.1	853.1	861.3
New or Expanded Development Projections at % of Development Estimates [2]	75% 2.15	0.66	1.56	28.02	8.24	10.91
Conservation Reduction Est		-	-	-	-	-
<b>Total Projected Use</b>	<b>772.1</b>	<b>823.5</b>	<b>825.1</b>	<b>853.1</b>	<b>861.3</b>	<b>872.2</b>

<b>Sources</b>							
<b>Kimball Reservoir &amp; Treatment Plant</b>		245.0	300.0	300.0	300.0	300.0	300.0
% Annual Change		-1%	22%	0%	0%	0%	0%
% of Total Production		32%	36%	36%	35%	35%	34%
<b>North Bay Aqueduct</b>		527.1	523.5	525.1	553.1	561.3	572.2
% Annual Change		-5%	-1%	0%	5%	1%	2%
% of Total Production		68%	64%	64%	65%	65%	66%
<b>Total Water Production</b>		<b>772.1</b>	<b>823.5</b>	<b>825.1</b>	<b>853.1</b>	<b>861.3</b>	<b>872.2</b>
% Annual Change		-4%	7%	0%	3%	1%	1%



[1] An acre foot (af) is a typical method of measuring water production. An acre foot of water is equal to 43,560 square feet of water 12" deep, or 325,829 gallons or 435.6 hcf. The volume of water would generate 893 gallons per day for one year.

[2] Projections based on percent of new development projections of acre feet required for connection to water system. See Table

Table 3a  
Development Projections and Water Service Demand

PROJECTS						FISCAL YEARS						
Type of Development	# of Projects	Accounts/Units			Estimated Additional Water Capacity Needs (in af) [1]	Development Probability Estimate (Avg)	09-10	10-11	11-12	12-13	13-14	14-15
		SFR	Trans	Non Res			Wtr (af)	Wtr (af)	Wtr (af)	Wtr (af)	Wtr (af)	Wtr (af)
Executed Memorandums of Understanding (MOU)	3		28	0	17.06	50%	0.00	0.00	0.00	2.40	5.35	0.00
Development Agreements (DA)	5	48	362		97.25	79%	0.00	0.00	0.00	40.17	8.08	21.90
MOU to be executed/required	2	15	66		40.95	63%	0.00	0.00	0.00	22.91	0.00	0.00
Partial Implementation	4	6		3	4.81	63%	1.80	0.00	0.43	0.00	0.00	0.00
Growth Management Applications (GMA) Granted	18	80			48.86	53%	0.00	0.43	0.91	8.25	7.55	6.20
Residential	5		6	5	5.71	80%	1.40	0.34	1.82	0.00	0.00	0.00
Commercial	8	1		7	1.53	100%	1.53	0.00	0.00	0.00	0.00	0.00
Deferred Agreements					6.00	100%	1.00	1.00	1.00	1.00	1.00	1.00
Miscellaneous	45	150	462	15	216.17		5.73	1.77	4.15	74.73	21.98	29.10
<b>Totals</b>					137.46	64%	4.2%	1.3%	3.0%	54.4%	16.0%	21.2%

Added Accounts	Est	Prob %	Use %	In hcf
Residential	150	150	47.7	Assume 5/8" at Meter Capacity 1.00
Transient	10	462	3.2	Assume 2" at Meter Capacity 8.00
Commercial	15	net	4.8	Assume 1.5" at Meter Capacity 5.00

Meter Capacity Equivalents						
Residential	2	1	1	26	8	10
Transient	-	-	-	16	8	8
Commercial	-	-	-	15	5	5
<b>Total Accounts with est of meter size and use</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>57</b>	<b>21</b>	<b>23</b>
	<b>2</b>	<b>3</b>	<b>4</b>	<b>61</b>	<b>82</b>	<b>105</b>

Added Annual Consumption	af	Prob % Use %		In hcf
		32%	75%	
Residential Units X .428	64.20	20.41	15.31	6,669
Transient Units X .17	78.54	24.97	18.729	8,158
Commercial - net	73.43	23.35	17.511	7,628
<b>Total</b>	<b>216.17</b>	<b>68.73</b>	<b>51.549</b>	<b>22,455</b>
<b>Est Added Consumption in hcf</b>				<b>22,455</b>
<b>Est Added Consumption in af</b>				<b>51.55</b>

Residential	278	86	202	3,625	1,065	1,412
Transient	340	105	247	4,435	1,304	1,727
Commercial	318	98	231	4,147	1,219	1,615
<b>Total</b>	<b>936</b>	<b>289</b>	<b>679</b>	<b>12,207</b>	<b>3,590</b>	<b>4,754</b>
<b>Est Added Consumption in hcf</b>	<b>936</b>	<b>289</b>	<b>679</b>	<b>12,207</b>	<b>3,590</b>	<b>4,754</b>
<b>Est Added Consumption in af</b>	<b>2.15</b>	<b>0.66</b>	<b>1.56</b>	<b>28.02</b>	<b>8.24</b>	<b>10.91</b>

[1] The annual acre feet (af) of Water need or Wastewater treatment capacity is based on size and type of development. An acre foot of water is the equivalent of one acre of land (43,560 square feet) with water 1 foot deep, or 325,829 gallons or 435.6 hcf