

# 2016 Demand Forecast

*Presentation to the Board of Commissioners*

**August 26, 2015**



# Agenda

- **New 2015 and 2016 Demand (Usage) Forecasts**
- **Impact to 2015 and 2016 Revenues**
- **Long-term Rate Forecast Scenarios**
- **Conservation Message to Customers**

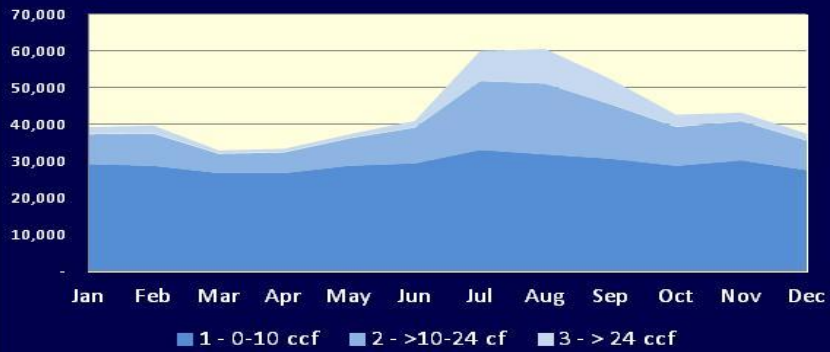


# 2015-2016 Demand (Usage) Forecasts

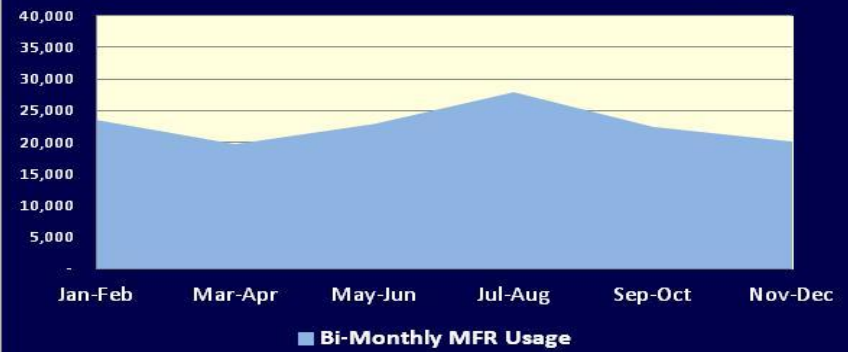
## Single Family

## Multi-Family

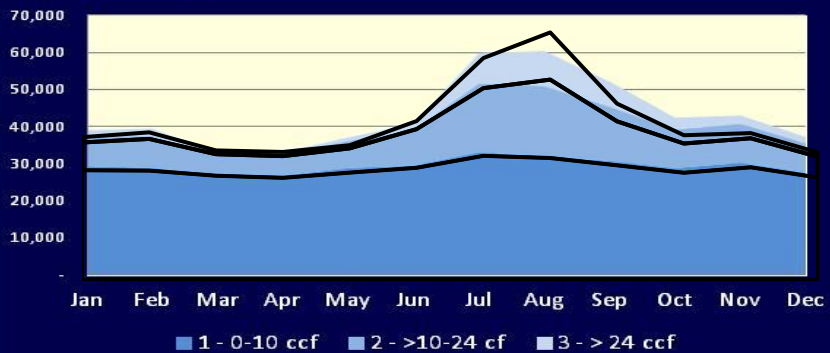
2015-2016 Projected Single Family Usage



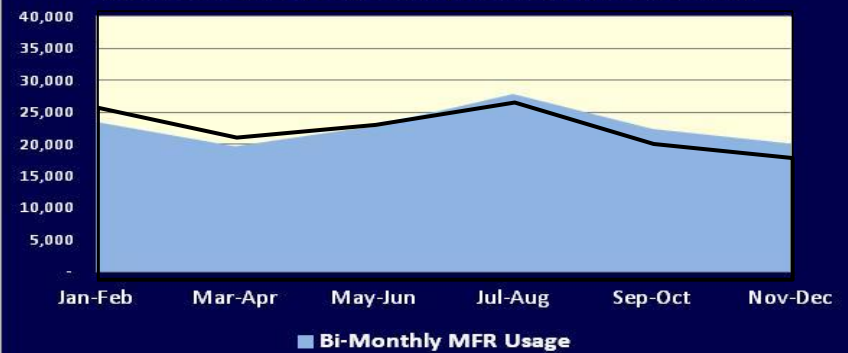
2015-2016 Projected Multi-Family Usage



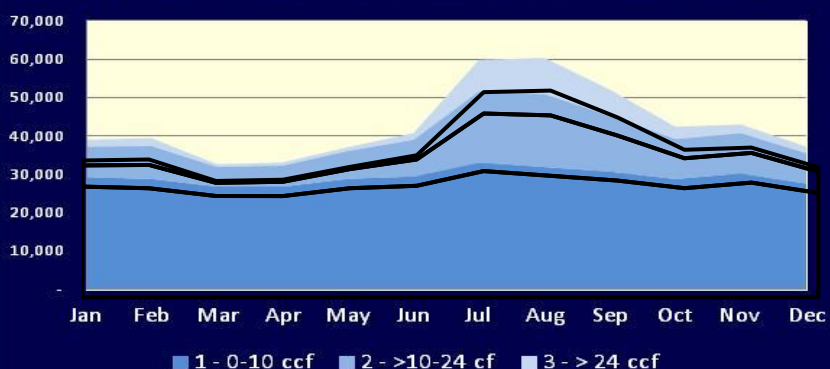
Reduced 2015 Usage Compared to Forecast Usage



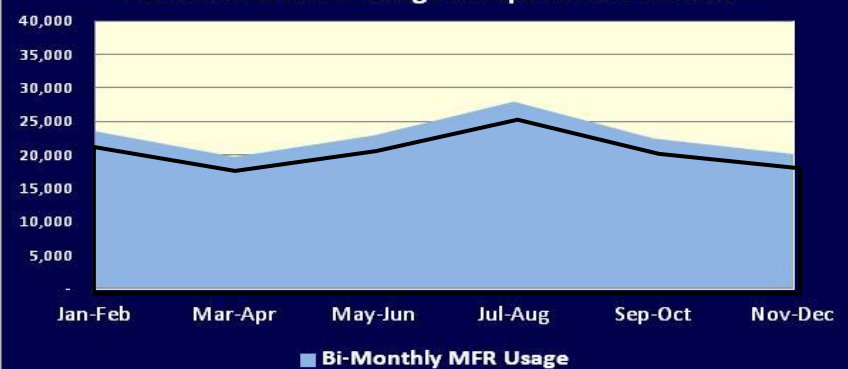
Reduced 2015 Usage Compared to Forecast Usage



Reduced 2016 Usage Compared to Forecast Usage



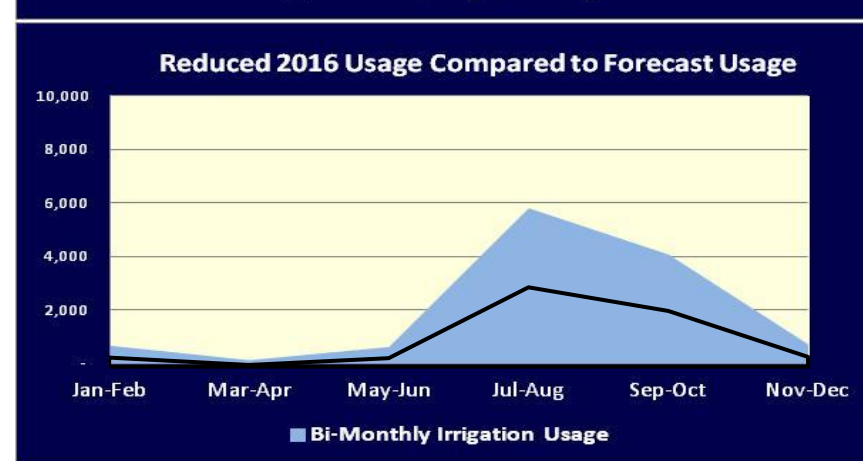
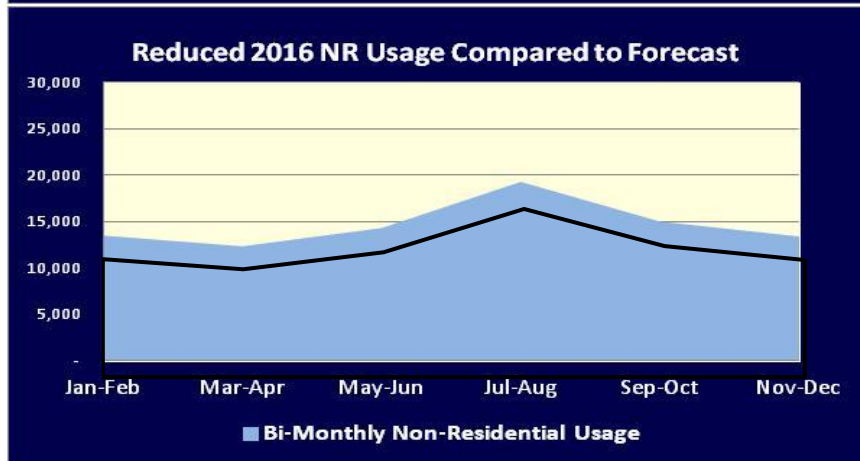
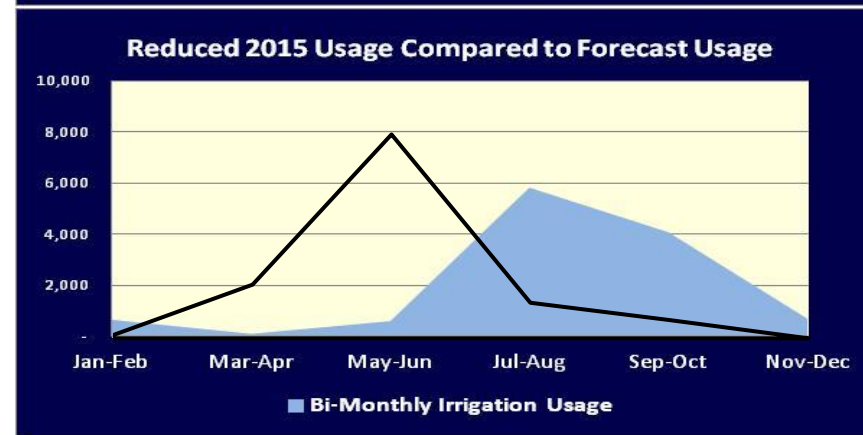
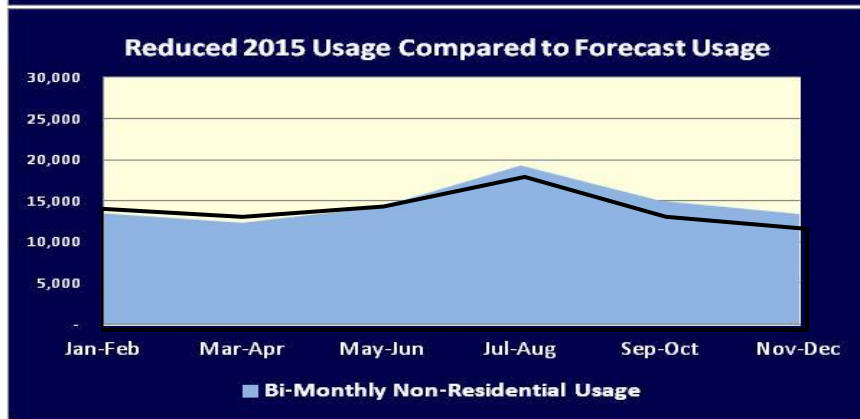
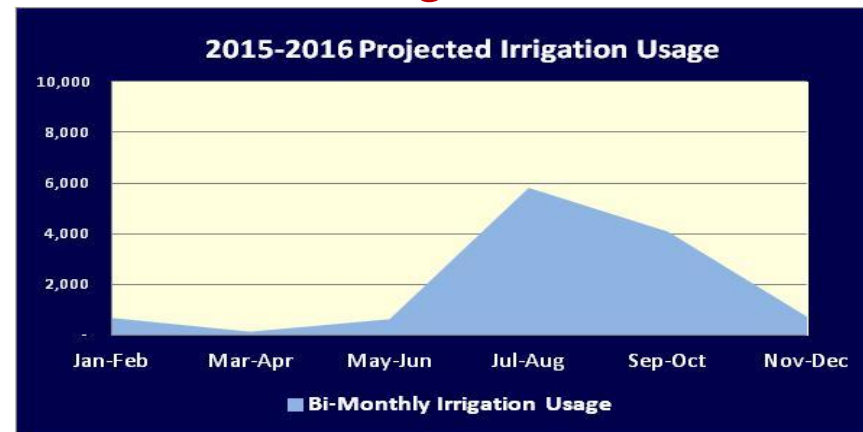
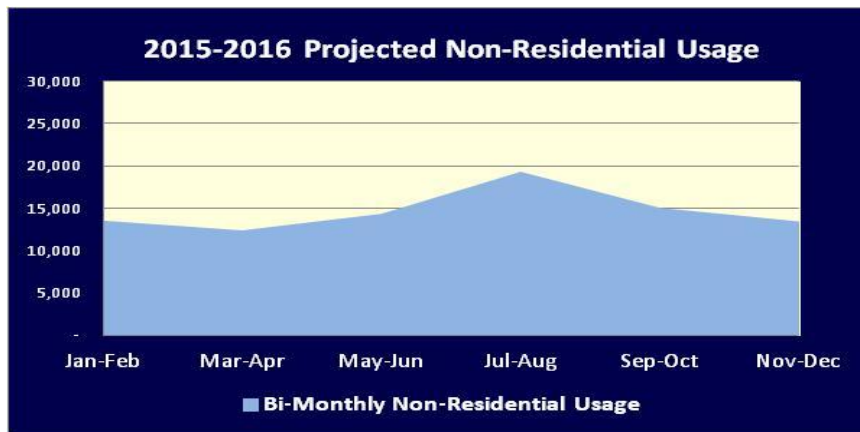
Reduced 2016 MF Usage Compared to Forecast



# 2015-2016 Demand (Usage) Forecasts

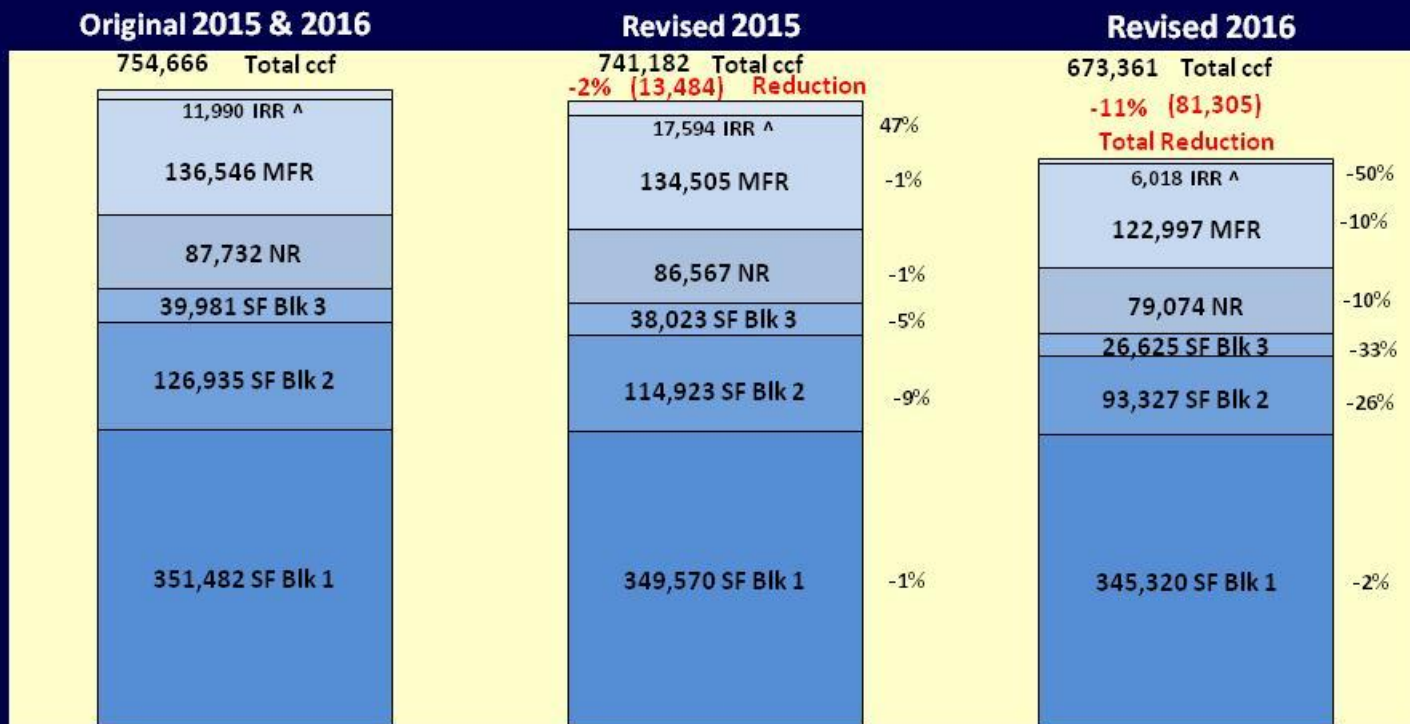
## Non-Residential

## Irrigation



# Revised 2015-2016 Usage Compared to Previous Forecast

## Total Usage Demand Forecasts for 2015 and 2016





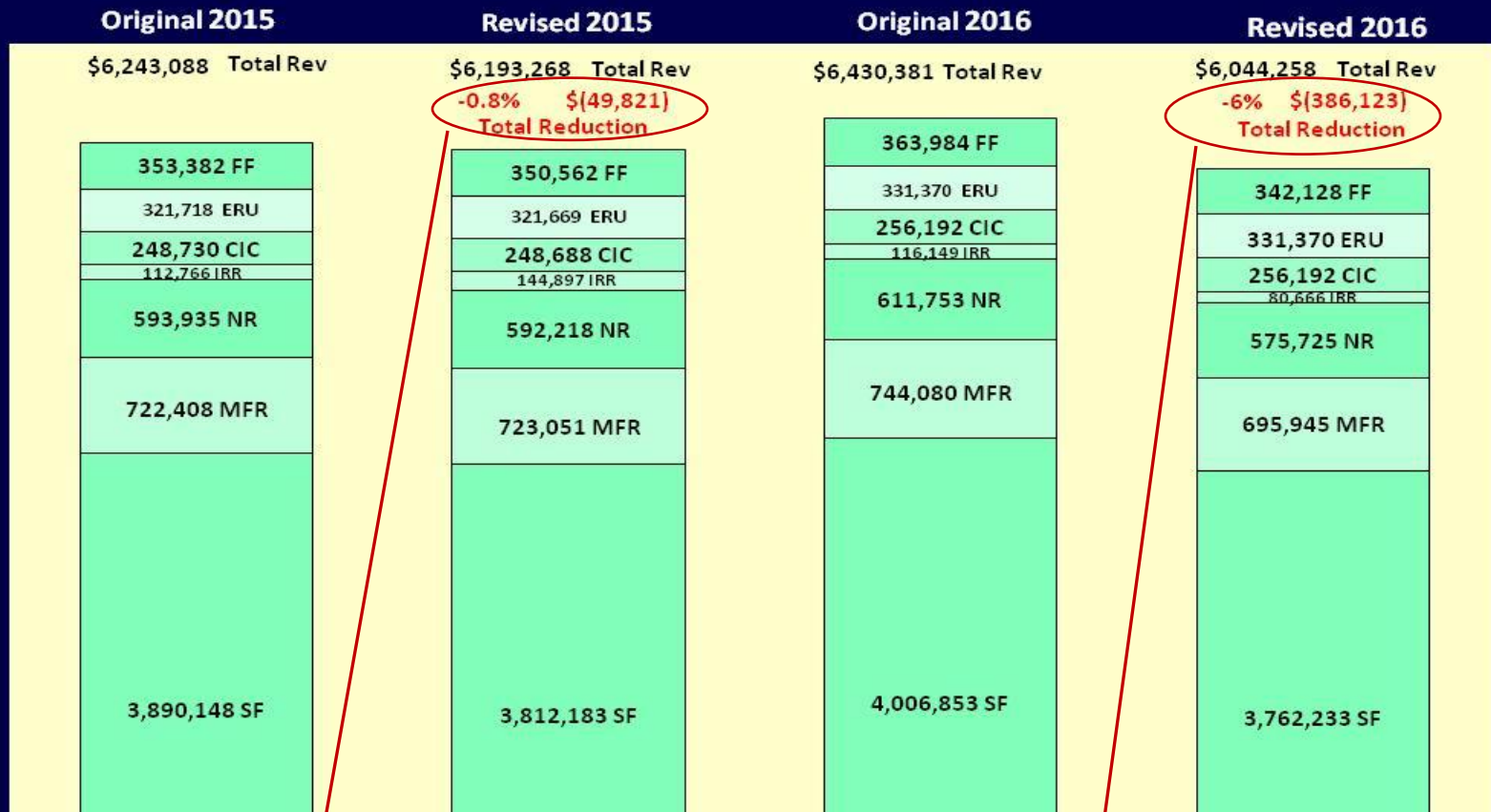
# Revised 2015-2016 Usage Revenue Compared to Previous Forecast

## Total Usage Revenue Forecasts for 2015 and 2016

Original 2015	Revised 2015	Original 2016	Revised 2016
\$2,641,660 Total Rev	\$2,593,655 Total Rev -2% (49,821) Reduction	\$2,720,909 Total Rev	\$2,356,640 Total Rev -13% \$(364,269) Total Reduction
69,062 IRR ^	101,193 IRR ^ 47%	71,134 IRR ^	35,651 IRR ^ -50%
465,622 MFR	458,078 MFR -1%	479,591 MFR	431,452 MFR -10%
354,437 NR	349,731 NR -1%	365,070 NR	329,043 NR -10%
980,635 SF Blk 3	975,300 SF Blk 3 -5%	1,010,054 SF Blk 3	992,346 SF Blk 3 -33%
542,012 SF Blk 2	490,721 SF Blk 2 -9%	558,273 SF Blk 2	410,461 SF Blk 2 -26%
229,891 SF Blk 1	218,632 SF Blk 1 -1%	236,787 SF Blk 1	157,687 SF Blk 1 -2%

# Revised 2015-2016 Total Revenue Compared to Previous Forecast

## Total Revenue Forecasts for 2015 and 2016




In 2015, even with a 50% reduction in usage for the irrigation class, and a 10% for all other classes for the Sept-Dec billing periods, the total reduction in revenue is less than \$50k, which can easily be covered by the use of reserves.

In 2016, if irrigation goes down by 50% and all other classes by 10% for the entire year, the impact to services rates could be 6% or nearly \$400k. If this should happen, the future forecast needs to be adjusted to prevent revenue shortfalls – this could be in the form of higher rate increases, lowering costs or both.

# Impact of Usage Reductions on Future Forecast

## Scenario 1

	Cash Flow Forecast - Scenario 1 - Maintain Costs and Rate Increases as Proposed in 2015 Budget							
	2014-2020							
OPERATING ACCOUNT	2014	2015	2016	2017	2018	2019	2020	2015-2020
<u>Sources:</u>								
BEGINNING BALANCE	\$ 789,669	\$ 828,870	\$ 828,724	\$ 587,004	\$ 355,566	\$ 66,515	\$ (260,078)	\$ 828,870
Rate Revenue Increase	0.0%	3.0%	3.0%	3.0%	4.7%	4.7%	4.7%	
Cumulative Rate Increase	0.0%	3.0%	6.1%	9.3%	14.4%	19.8%	25.4%	
REVENUE								
Net Interest Earnings	2,990	12,433	16,574	14,675	10,667	2,328	(10,403)	46,275
Total Service Revenues	6,065,938	6,310,688	6,165,201	6,350,157	6,648,615	6,961,100	7,288,271	39,724,032
Total Other Revenues	253,065	261,679	253,168	261,423	272,032	283,085	294,601	1,625,989
TOTAL REVENUE	6,321,993	6,584,800	6,434,944	6,626,255	6,931,314	7,246,513	7,572,469	41,396,296
Total Sources	\$ 7,111,662	\$ 7,413,670	\$ 7,263,668	\$ 7,213,260	\$ 7,286,880	\$ 7,313,028	\$ 7,312,391	\$ 42,225,166
<u>Uses:</u>								
OPERATING COSTS								
Total Admin/Planning/Cust Service/Tax	1,998,989	\$ 1,979,711	\$ 2,023,918	\$ 2,090,078	\$ 2,209,836	\$ 2,277,628	\$ 2,379,838	12,961,008
SPU Rate Increase	0% SPU Inc	-6% SPU Inc	0% SPU Inc	0% SPU Inc	20% SPU Inc	0% SPU Inc	0% SPU Inc	
Water Purchases	1,534,077	1,446,194	1,446,194	1,446,194	1,735,433	1,735,433	1,735,433	9,544,883
All other O&M costs	986,993	1,003,681	1,053,204	1,052,187	1,289,560	1,352,825	1,353,283	7,104,740
TOTAL OPERATING COSTS	4,520,059	4,429,587	4,523,316	4,588,460	5,234,829	5,365,886	5,468,554	29,610,631
CAPITAL COSTS								
Transfer CIC Revenues to Capital	241,486	248,688	256,192	263,878	276,280	289,265	302,861	1,637,164
Transfer to Vehicle Replacement Acco	120,000	122,000	125,000	129,000	134,000	139,000	145,000	794,000
Transfer to Capital in Lieu of Depreciat	800,000	1,100,000	500,000	600,000	300,000	500,000	800,000	3,800,000
Total Debt Service (Net of Capitalization)	651,280	621,711	1,272,156	1,276,356	1,275,256	1,278,956	1,080,906	6,805,340
Transfer in from PWTf Account	(50,032)	62,960	-	-	-	-	-	62,960
TOTAL CAPITAL COSTS	1,762,734	2,155,359	2,153,348	2,269,234	1,985,536	2,207,221	2,328,766	13,099,464
Total Uses	\$ 6,282,792	\$ 6,584,945	\$ 6,676,664	\$ 6,857,694	\$ 7,220,365	\$ 7,573,107	\$ 7,797,320	\$ 42,710,095
ENDING BALANCE - OPERATING ACCOUNT	\$ 828,870	\$ 828,724	\$ 587,004	\$ 355,566	\$ 66,515	\$ (260,078)	\$ (484,929)	\$ (484,929)

Rate Increases maintained at 2015 Budget level projections.

Maintenance building started in 2015, with bond issue in 2016.

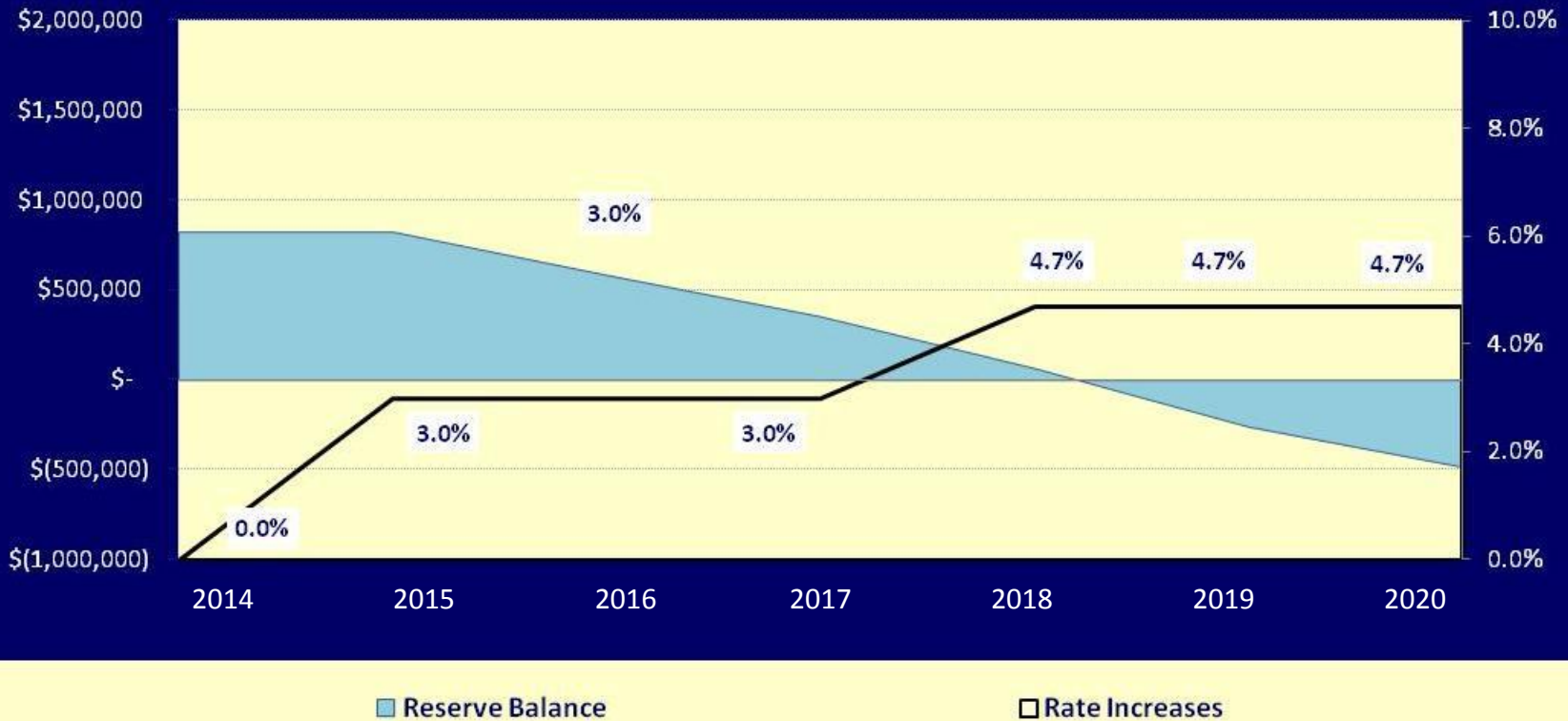
Note declining reserve levels.



# Impact of Usage Reductions on Future Forecast


## Scenario 1

**2014-2020 Rate Increases and Operating Reserve Balance with Reduced Usage**  
*Scenario 1: Costs and Rate increases Projected in 2015 Budget*



# Impact of Usage Reductions on Future Forecast

## Scenario 2

	Cash Flow Forecast - Scenario 2 - Maintain Costs & Rate Increases from 2015 Budget - One Large Rate Adjustment							
	2014-2020							
OPERATING ACCOUNT	2014	2015	2016	2017	2018	2019	2020	2015-2020
<b>Sources:</b>								
BEGINNING BALANCE	\$ 789,669	\$ 828,870	\$ 828,724	\$ 907,722	\$ 1,014,642	\$ 1,091,230	\$ 1,162,623	\$ 828,870
Rate Revenue Increase	0.0%	3.0%	9.0%	3.0%	4.7%	4.7%	4.7%	
Cumulative Rate Increase	0.0%	3.0%	12.3%	15.6%	21.1%	26.8%	32.7%	
REVENUE								
Net Interest Earnings	2,990	12,433	16,574	22,693	30,439	38,193	46,505	166,838
Total Service Revenues	6,065,938	6,310,688	6,519,530	6,715,116	7,030,727	7,361,171	7,707,146	41,644,379
Total Other Revenues	253,065	261,679	260,089	268,552	279,496	290,900	302,783	1,663,498
TOTAL REVENUE	6,321,993	6,584,800	6,796,194	7,006,361	7,340,662	7,690,264	8,056,434	43,474,715
Total Sources	\$ 7,111,662	\$ 7,413,670	\$ 7,624,919	\$ 7,914,083	\$ 8,355,304	\$ 8,781,494	\$ 9,219,057	\$ 44,303,585
<b>Uses:</b>								
OPERATING COSTS								
Total Adm in/Planning/Cust Service/Tax	1,998,989	\$ 1,979,711	\$ 2,064,450	\$ 2,131,826	\$ 2,253,546	\$ 2,323,392	\$ 2,427,753	13,180,677
SPU Rate Increase	0% SPU Inc	-6% SPU Inc	0% SPU Inc	0% SPU Inc	20% SPU Inc	0% SPU Inc	0% SPU Inc	
Water Purchases	1,534,077	1,446,194	1,446,194	1,446,194	1,735,433	1,735,433	1,735,433	9,544,883
All other O&M costs	986,993	1,003,681	1,053,204	1,052,187	1,289,560	1,352,825	1,353,283	7,104,740
TOTAL OPERATING COSTS	4,520,059	4,429,587	4,563,848	4,630,207	5,278,539	5,411,650	5,516,469	29,830,300
CAPITAL COSTS								
Transfer CIC Revenues to Capital	241,486	248,688	256,192	263,878	276,280	289,265	302,861	1,637,164
Transfer to Vehicle Replacement Account	120,000	122,000	125,000	129,000	134,000	139,000	145,000	794,000
Transfer to Capital in Lieu of Depreciation	800,000	1,100,000	500,000	600,000	300,000	500,000	800,000	3,800,000
Total Debt Service (Net of Capitalization)	651,280	621,711	1,272,156	1,276,356	1,275,256	1,278,956	1,080,906	6,805,340
Transfer in from PWT Account	(50,032)	62,960	-	-	-	-	-	62,960
TOTAL CAPITAL COSTS	1,762,734	2,155,359	2,153,348	2,269,234	1,985,536	2,207,221	2,328,766	13,099,464
Total Uses	\$ 6,282,792	\$ 6,584,945	\$ 6,717,196	\$ 6,899,441	\$ 7,264,075	\$ 7,618,871	\$ 7,845,236	\$ 42,929,763
ENDING BALANCE - OPERATING ACCOUNT	\$ 828,870	\$ 828,724	\$ 907,722	\$ 1,014,642	\$ 1,091,230	\$ 1,162,623	\$ 1,373,821	\$ 1,373,821

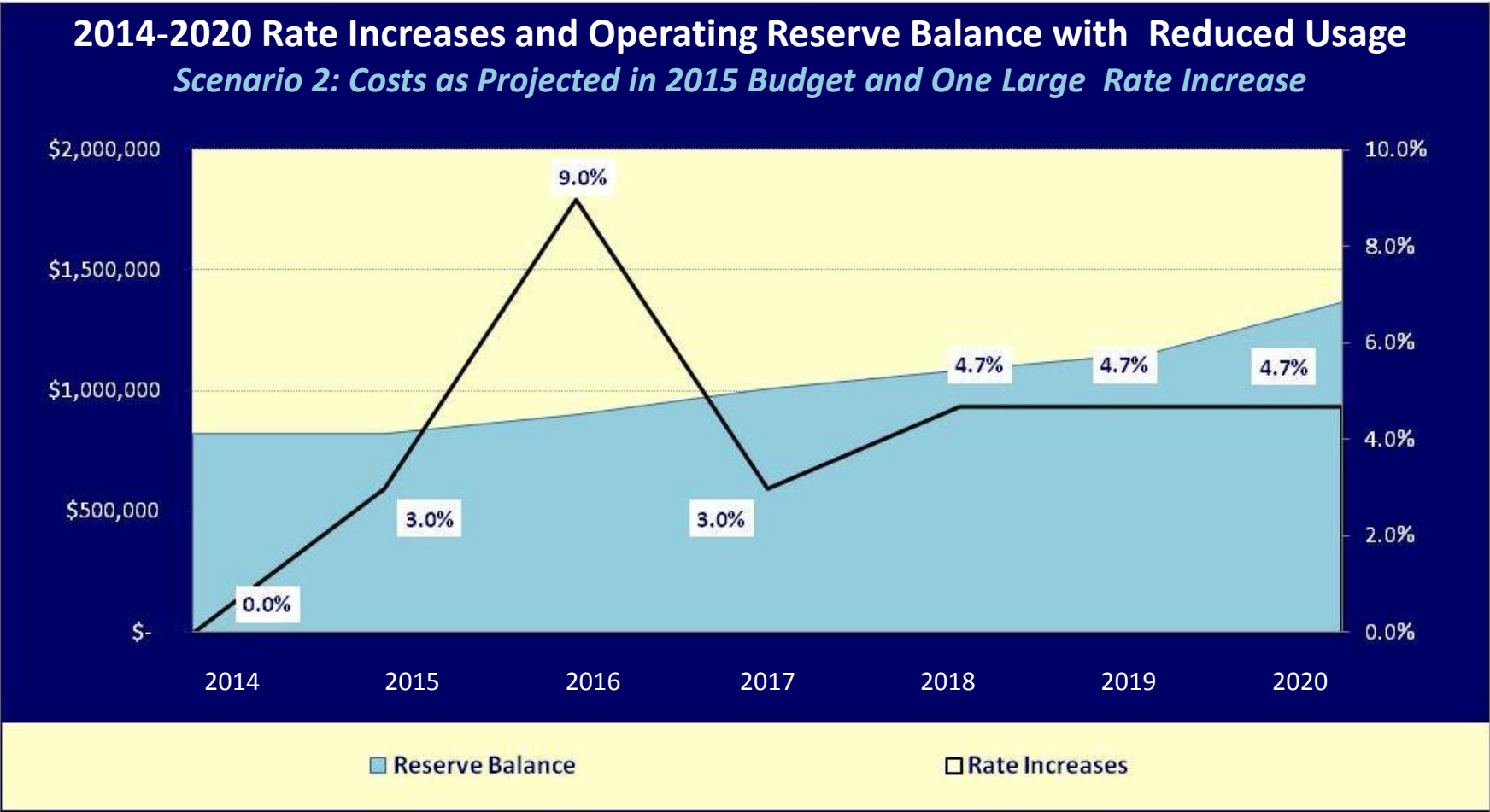
One-time large rate adjustment of 9% in 2016. This is a cumulative increase of 32.7% from 2015-2020.

Maintenance building started in 2015, with bond issue in 2016.

Note reserves levels are maintained – even slightly above required level by 2020.

# Impact of Usage Reductions on Future Forecast


## Scenario 2





# Impact of Usage Reductions on Future Forecast

## Scenario 3

	Cash Flow Forecast - Scenario 3 - Delay Debt Service - Progressively Higher Rate Increases							
	2014-2020							
OPERATING ACCOUNT	2014	2015	2016	2017	2018	2019	2020	2015-2020
<b>Sources:</b>								
BEGINNING BALANCE	\$ 789,669	\$ 828,870	\$ 828,724	\$ 1,081,468	\$ 1,301,374	\$ 1,284,980	\$ 1,274,814	\$ 828,870
Rate Revenue Increase	0.0%	3.0%	4.0%	5.0%	6.0%	5.0%	5.0%	
Cumulative Rate Increase	0.0%	3.0%	7.1%	12.5%	19.2%	25.2%	31.4%	
REVENUE								
Net Interest Earnings	2,990	12,433	16,574	27,037	39,041	44,974	50,993	191,052
Total Service Revenues	6,065,938	6,310,688	6,256,886	6,569,730	6,963,914	7,312,110	7,677,715	41,091,043
Total Other Revenues	253,065	261,679	254,322	265,010	277,426	289,133	301,354	1,648,923
TOTAL REVENUE	6,321,993	6,584,800	6,527,782	6,861,777	7,280,381	7,646,217	8,030,061	42,931,018
Total Sources	\$ 7,111,662	\$ 7,413,670	\$ 7,356,506	\$ 7,943,245	\$ 8,581,755	\$ 8,931,197	\$ 9,304,875	\$ 43,759,888
<b>Uses:</b>								
OPERATING COSTS								
Total Admin/Planning/Cust Service/Tax	1,998,989	\$ 1,979,711	\$ 2,052,748	\$ 2,134,060	\$ 2,265,636	\$ 2,338,436	\$ 2,446,008	13,216,599
SPU Rate Increase	0% SPU Inc	-6% SPU Inc	0% SPU Inc	0% SPU Inc	20% SPU Inc	0% SPU Inc	0% SPU Inc	
Water Purchases	1,534,077	1,446,194	1,446,194	1,446,194	1,735,433	1,735,433	1,735,433	9,544,883
All other O&M costs	986,993	1,003,681	1,053,204	1,052,187	1,289,560	1,352,825	1,353,283	7,104,740
TOTAL OPERATING COSTS	4,520,059	4,429,587	4,552,146	4,632,442	5,290,629	5,426,694	5,534,725	29,866,222
CAPITAL COSTS								
Transfer CIC Revenues to Capital	241,486	248,688	266,747	280,085	296,890	311,734	327,321	1,731,464
Transfer to Vehicle Replacement Account	120,000	122,000	125,000	129,000	134,000	139,000	145,000	794,000
Transfer to Capital in Lieu of Depreciation	800,000	1,100,000	500,000	600,000	300,000	500,000	800,000	3,800,000
Total Debt Service (Net of Capitalization)	651,280	621,711	831,145	1,000,345	1,275,256	1,278,956	1,080,906	6,088,318
Transfer in from PWTFA Account	(50,032)	62,960	-	-	-	-	-	62,960
TOTAL CAPITAL COSTS	1,762,734	2,155,359	1,722,892	2,009,430	2,006,145	2,229,690	2,353,226	12,476,742
Total Uses	\$ 6,282,792	\$ 6,584,945	\$ 6,275,038	\$ 6,641,871	\$ 7,296,774	\$ 7,656,383	\$ 7,887,951	\$ 42,342,964
ENDING BALANCE - OPERATING ACCOUNT	\$ 828,870	\$ 828,724	\$ 1,081,468	\$ 1,301,374	\$ 1,284,980	\$ 1,274,814	\$ 1,416,924	\$ 1,416,924

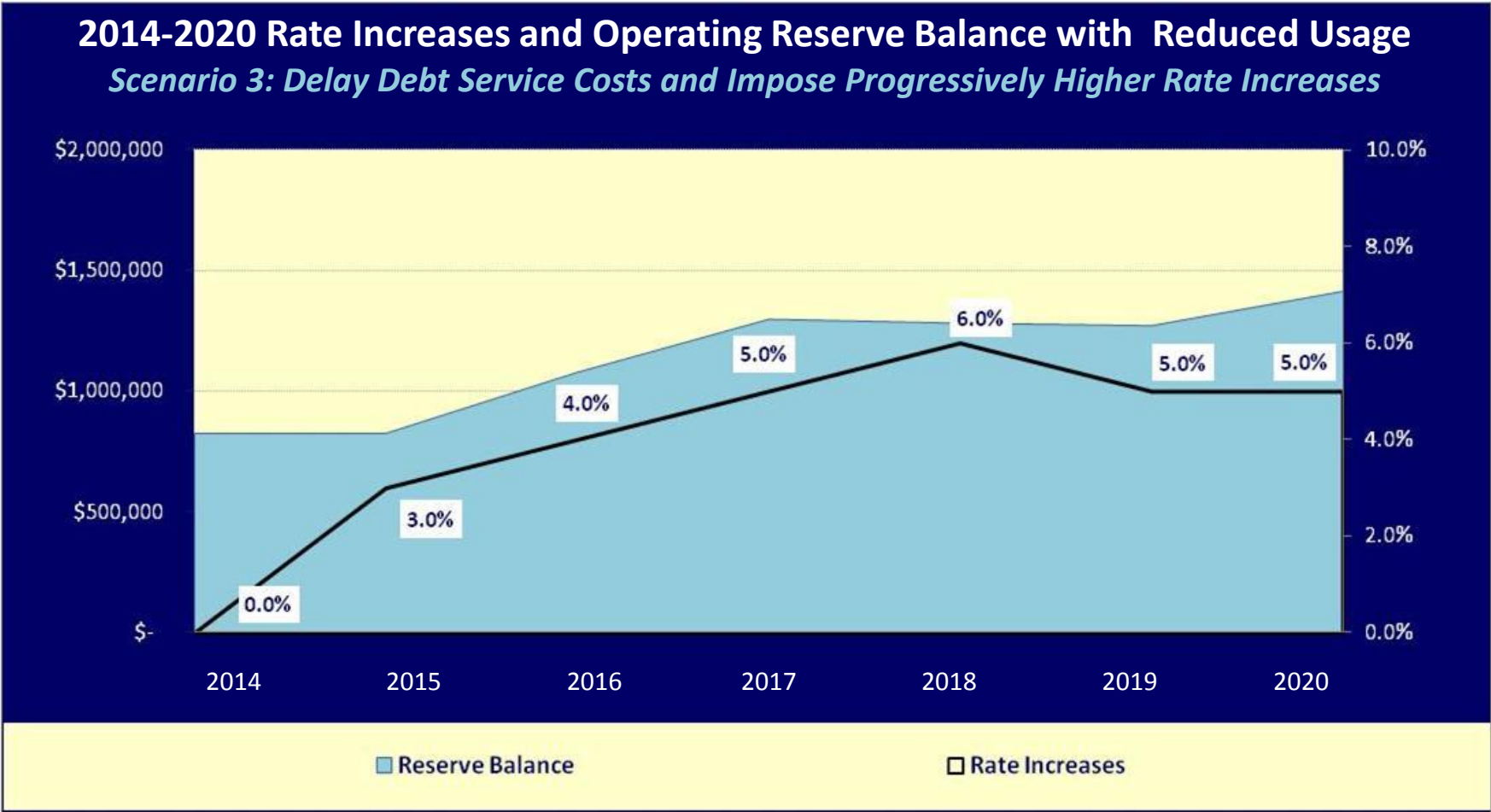
Progressively higher rate increases. This is a cumulative increase of 31.4% from 2015-2020, which is nearly the same as with one large increase.

Maintenance building started in 2018, with bond issue in 2018. Note the \$400k delay in debt service costs.

Note reserves levels are maintained.

# Impact of Usage Reductions on Future Forecast

## Scenario 3



Note, these rate increases would only be needed if usage was reduced by the full 10% (50% for irrigation) for the entire year of 2016 and maintained at that lower level through 2020, and operating and capital costs were maintained at the same level as proposed in the 2015 operating and capital forecasts, except for the postponement of the debt service costs related to the bond issue that will be required when the maintenance building is constructed in 2018 instead of 2016.



Table 2.4

Single Family Residential Consumption per Household by Wholesale Customer: 1994-2013  
(in CCF per Household per Month)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bellevue*	10.4	10.0	9.8	9.4	10.0	9.6	9.7	8.9	9.1	9.7	10.4	8.5	NA	8.5	7.5	8.6	7.6	NA	7.7	7.6
Bothell	8.5	7.9	8.1	7.9	8.4	7.6	8.0	7.5	7.6	8.0	NA	5.7	5.7	9.1	7.2	7.3	7.2	6.1	6.3	6.4
BrynMawr	NA	NA	NA	NA	NA	7.5	Merged with Skyway													
Cedar River	9.9	9.7	9.7	9.1	9.6	8.9	9.5	8.0	8.6	9.1	8.6	7.8	8.5	7.9	7.4	8.3	7.1	6.8	7.2	7.1
Coal Creek	10.1	9.5	9.4	9.2	9.9	9.1	9.1	8.0	8.6	9.3	9.4	8.2	8.9	7.9	7.7	8.5	7.1	7.0	7.2	7.3
Duvall	NA	8.6	8.3	8.9	9.7	8.1	8.8	7.1	7.2	8.4	7.6	6.8	7.4	6.4	6.9	7.6	6.6	6.7	6.1	6.1
Highline	9.2	9.0	8.6	9.0	8.8	8.3	8.5	7.6	8.1	8.2	7.9	7.5	7.6	7.3	7.0	7.5	6.6	6.5	6.5	6.4
Issaquah*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	6.1	5.5	5.4	5.7	5.2
Kirkland*	8.8	8.6	8.5	8.5	8.6	8.2	9.3	7.5	8.0	8.9	7.8	10.4	7.8	7.8	7.3	7.8	6.8	NA	6.9	7.0
Lake Forest Park	NA	NA	11.4	12.8	10.7	12.2	12.2	9.9	10.4	11.3	10.3	9.8	10.2	9.2	8.8	10.2	8.9	9.2	7.3	7.4
Mercer Island	NA	10.7	9.9	9.8	11.0	10.0	10.5	9.2	10.0	10.6	10.5	9.9	9.8	8.9	8.5	9.0	7.8	8.0	8.0	7.9
North City	8.3	7.9	7.8	7.5	7.9	NA	7.7	6.7	7.0	7.4	7.0	6.5	6.5	6.3	6.8	6.7	5.8	5.7	5.7	5.8
Northshore	9.6	9.2	9.0	8.6	9.8	8.7	8.5	8.1	8.4	8.9	8.4	NA	8.4	7.6	6.9	7.4	6.8	6.5	6.8	6.7
Olympic View	9.9	9.8	9.5	8.9	9.5	9.0	9.3	8.1	9.0	9.7	9.2	8.3	9.0	8.4	7.0	8.7	7.5	7.5	7.3	7.6
Redmond*	9.4	9.0	9.1	8.7	9.1	8.6	8.3	7.7	7.7	8.2	NA	NA	NA	NA	6.5	6.6	6.4	6.1	6.3	6.2
Renton	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.8	7.0	6.4	6.6	6.4	6.5
Sammamish Plateau*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.7	9.7	8.2	8.1	8.3	8.1
Skyway*	7.5	7.2	7.3	7.0	7.2	6.8	7.8	6.3	7.0	7.1	6.7	6.0	6.3	6.0	5.9	5.9	5.4	5.3	5.2	5.1
Soos Creek	8.7	8.4	8.4	7.7	8.2	7.8	7.8	7.0	7.5	8.5	8.1	6.8	6.9	7.2	7.0	7.2	6.5	6.6	7.1	7.1
Tukwila*	7.5	6.4	7.7	7.4	7.4	7.2	7.0	6.7	6.9	7.2	6.2	5.8	NA	6.6	6.2	6.7	6.1	5.8	5.9	6.0
Woodinville	12.0	11.1	11.3	10.5	11.7	10.7	11.1	10.8	10.4	11.6	10.4	9.1	10.2	8.9	8.6	9.5	7.9	7.9	8.1	8.2
W.D. 20	8.3	8.2	8.0	7.7	8.5	8.1	7.9	7.0	7.1	7.7	7.4	6.9	7.2	6.8	6.7	6.8	6.3	6.0	6.1	6.0
W.D. 45	NA	8.9	NA	NA	NA	6.8	7.5	6.8	7.6	6.9	6.4	6.2	6.4	6.3	6.0	6.2	5.9	5.7	5.7	5.5
W.D. 49	9.1	9.6	8.7	8.5	8.4	8.2	7.9	7.2	7.7	8.1	7.7	7.2	8.0	7.1	6.8	7.3	6.6	6.5	6.5	6.2
W.D. 85	NA	NA	NA	NA	NA	9.9	9.7	6.9	7.2	Merged with WD 20										
W.D. 90	NA	NA	NA	NA	NA	8.4	9.5	8.5	8.8	8.7	8.5	7.5	8.2	7.7	7.4	8.0	6.8	6.9	7.0	7.1
W.D. 119	NA	NA	NA	NA	NA	8.1	8.2	7.7	8.1	9.1	8.2	7.5	9.0	7.6	7.6	8.1	7.1	NA	7.9	7.8
W.D. 125	8.4	8.3	8.3	8.2	8.3	8.1	8.3	8.5	9.4	8.5	8.1	7.8	8.0	8.0	7.5	7.9	7.1	7.0	7.0	6.9
Wholesale Average	9.7	9.4	9.2	8.9	9.5	8.9	9.1	8.1	8.4	9.0	8.7	7.9	8.0	7.8	7.3	7.9	6.9	7.0	7.0	7.0
Seattle	7.9	7.6	7.4	7.1	7.1	7.1	7.3	6.5	6.7	6.6	6.4	6.0	6.2	5.9	5.7	5.9	5.4	5.2	5.3	5.3

Lower than NCWD

4<sup>th</sup> Lowest in region

Lower than NCWD

Lower than NCWD

Members of Cascade Water Alliance. No history is available for Issaquah, and Sammamish Plateau prior to 2008.  
No history is available for Renton prior to 2008. Bellevue, Kirkland, and WD 119 did not provide data for 2011.

North City Water District Customers currently are some of the lowest water users in the region. Therefore, we are not asking you to use even less for your year round base level in-door needs. But, by limiting your summer usage for irrigation and recreation, you will continue in your example of using water wisely.

**End**

