

# **Oak Ridge Waste Water Depart.**

## **Rate Design Update**

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Chris Mitchell Management Consultants (CMMC)

**8/26/2013**

# Summary of Discussion Analysis

- **Waste Water Summary:**

- Retail Rate Increases (each implemented in the month of January in each listed year)
  - 2014: 15% 2015: 10% 2016: 6% 2017: 6% 2018: 6% 2019: 6%
  - Applied equally to all non-Doe customers except 10" meter who has a larger impact in year 2014
  - First year impact to most common user meter size (5/8") \$2.78 monthly for 2,000 and under usage
- Borrow funds (\$30.942 million through FY14-19 of which \$8.55 million is new) to support capital spend plan of \$33.042 million with the difference being funded through retail rates

- **Water Summary:**

- Retail Rate Increases (each implemented in the month of January in each listed year)
  - 2014: 10% 2015: 8% 2016: 6% 2017: 4% 2018: 4% 2019: 4%
  - Applied equally to all non-Doe customers except 10" meter who has a larger impact in year 2014
  - First year impact to most common user meter size (5/8"): \$1.35 monthly for 2,000 and under usage
- Borrow funds (\$7.2 million through FY14-19 of which \$6.6 million is new), DOE contribution of 6.1 million) to support capital spend plan (\$21.25 million) along with rate increases

- **Electric Summary:**

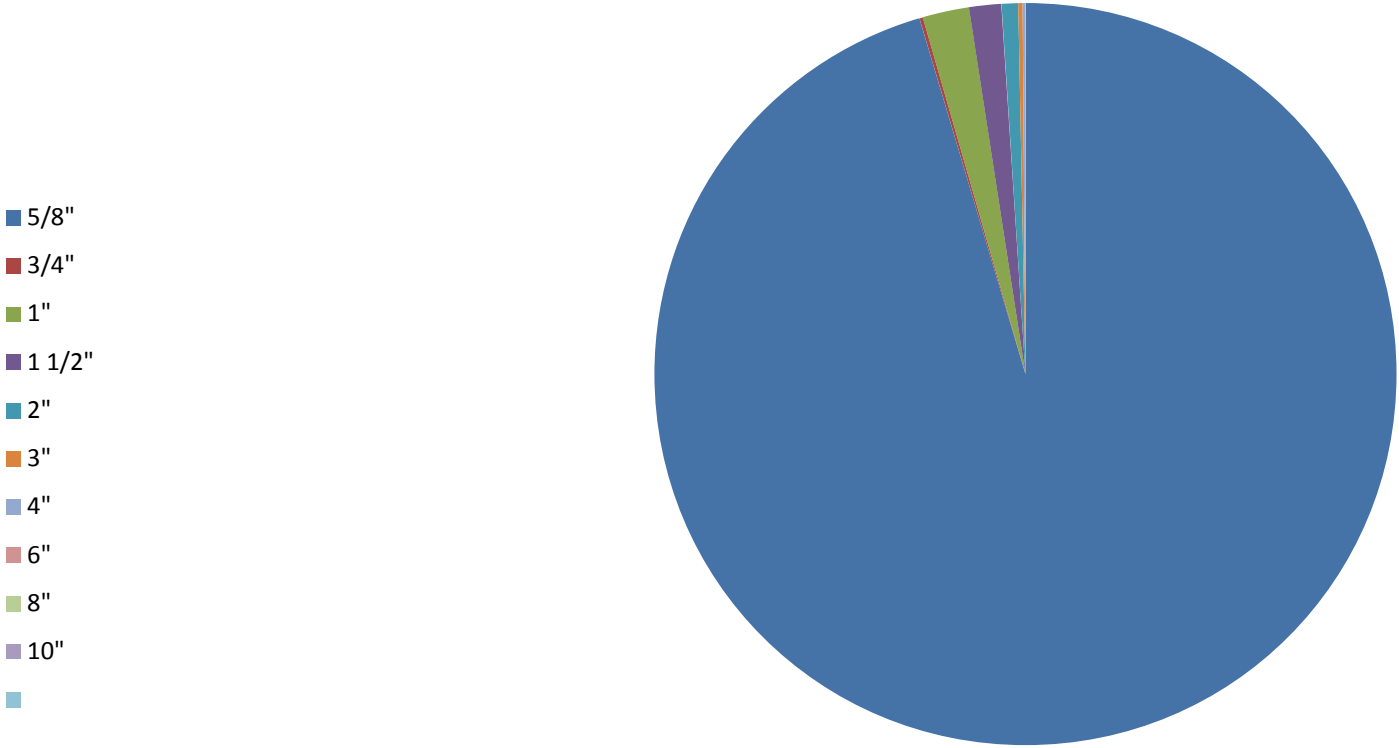
- Retail Rate Increases (both implemented on October 2013 with no future year increases approved)
  - TVA 1.5% + Distributor 1.2% = 2.7% Total
  - Impact to Average Residential Customer: \$2.74 monthly

- **Estimated total impact (January 2014) to Residential Customer (5/8" meter 2,000 gallons and under usage) \$6.87 monthly**

- **Estimated total impact to commercial customer is equal percentage as residential customer but dollar estimate is unique to each customer because usage of customers vary greatly**

# Billing Unit Analysis – Graph

FY2013 Customer Count  
by Meter Size



# Waste Water Department Analysis – Bill Impacts

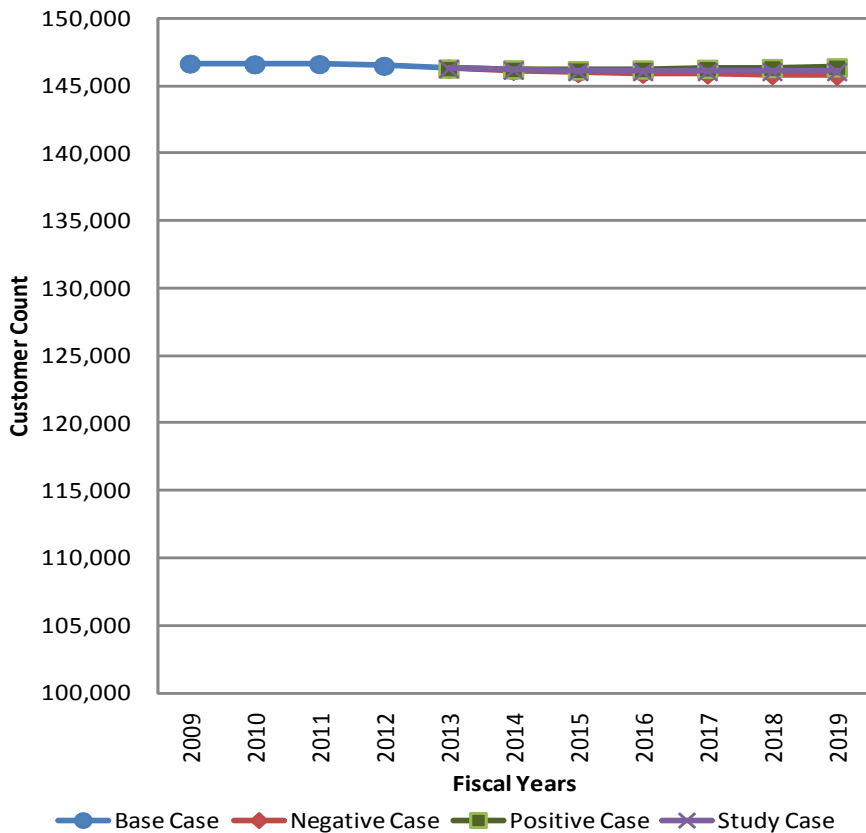
## Summary of Waste Water Bill Impacts

Description	Retail Rates (starting January of each year)							Dollar Impacts (starting January of each year)					
	2013	2014	2015	2016	2017	2018	2019	2014	2015	2016	2017	2018	2019
<b>Retail Rates for 1st 2,000 Gallons</b>													
5/8"	18.50	21.28	23.41	24.81	26.30	27.88	29.55	2.78	2.13	1.40	1.49	1.58	1.67
3/4"	22.00	25.30	27.83	29.50	31.27	33.15	35.14	3.30	2.53	1.67	1.77	1.88	1.99
1"	35.00	40.25	44.28	46.94	49.76	52.75	55.92	5.25	4.03	2.66	2.82	2.99	3.17
1 1/2"	70.00	80.50	88.55	93.86	99.49	105.46	111.79	10.50	8.05	5.31	5.63	5.97	6.33
2'	130.00	149.50	164.45	174.32	184.78	195.87	207.62	19.50	14.95	9.87	10.46	11.09	11.75
3"	225.00	258.75	284.63	301.71	319.81	339.00	359.34	33.75	25.88	17.08	18.10	19.19	20.34
4"	295.00	339.25	373.18	395.57	419.30	444.46	471.13	44.25	33.93	22.39	23.73	25.16	26.67
6"	-	479.25	527.18	558.81	592.33	627.87	665.55		47.93	31.63	33.53	35.54	37.67
8"	-	619.25	681.18	722.05	765.37	811.29	859.97		61.93	40.87	43.32	45.92	48.68
10"	295.00	759.25	835.18	885.29	938.40	994.71	1,054.39	464.25	75.93	50.11	53.12	56.30	59.68
<b>Over 3,000 Gallons</b>	7.75	8.91	9.80	10.39	11.01	11.67	12.37						
<b>DOE Rate for 1st 10M Gallons - fixed</b>	0.162	0.162	0.162	0.162	0.162	0.162	0.162						
<b>DOE over 10M Gallons</b>	7.75	8.91	9.80	10.39	11.01	11.67	12.37						

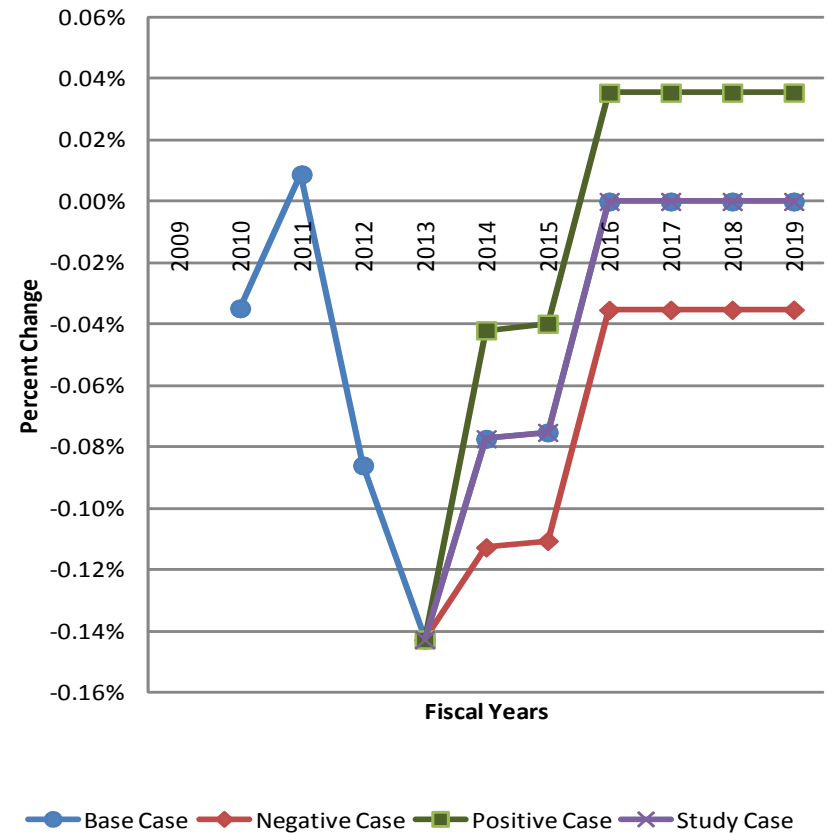
# Billing Unit Analysis – Graph

## Analysis of Billing Units -- Residential & Commercial

### Customer Count - Total Customers

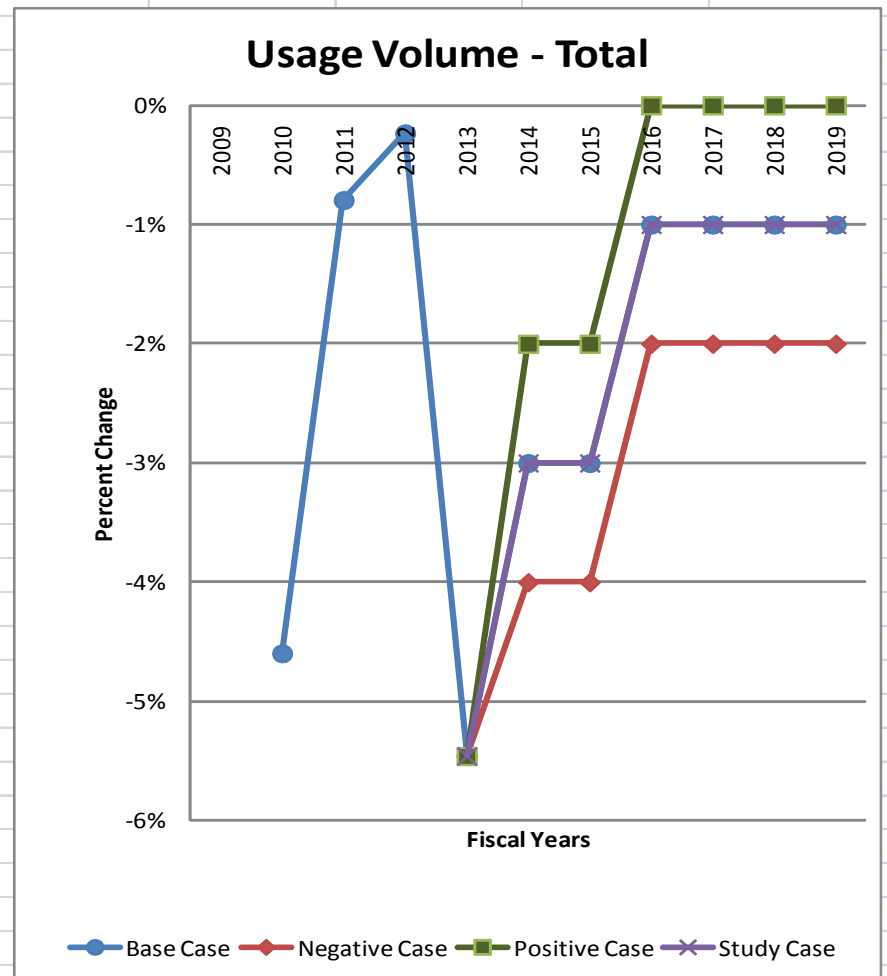
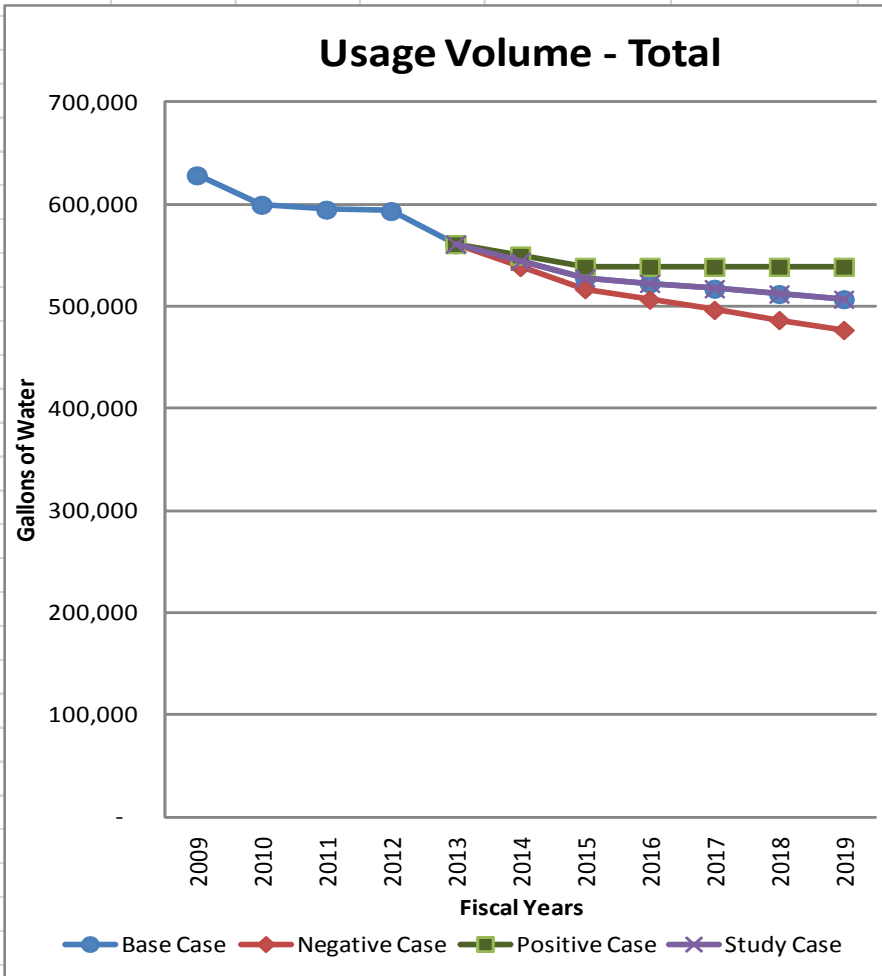


### Customer Count - Total Customers



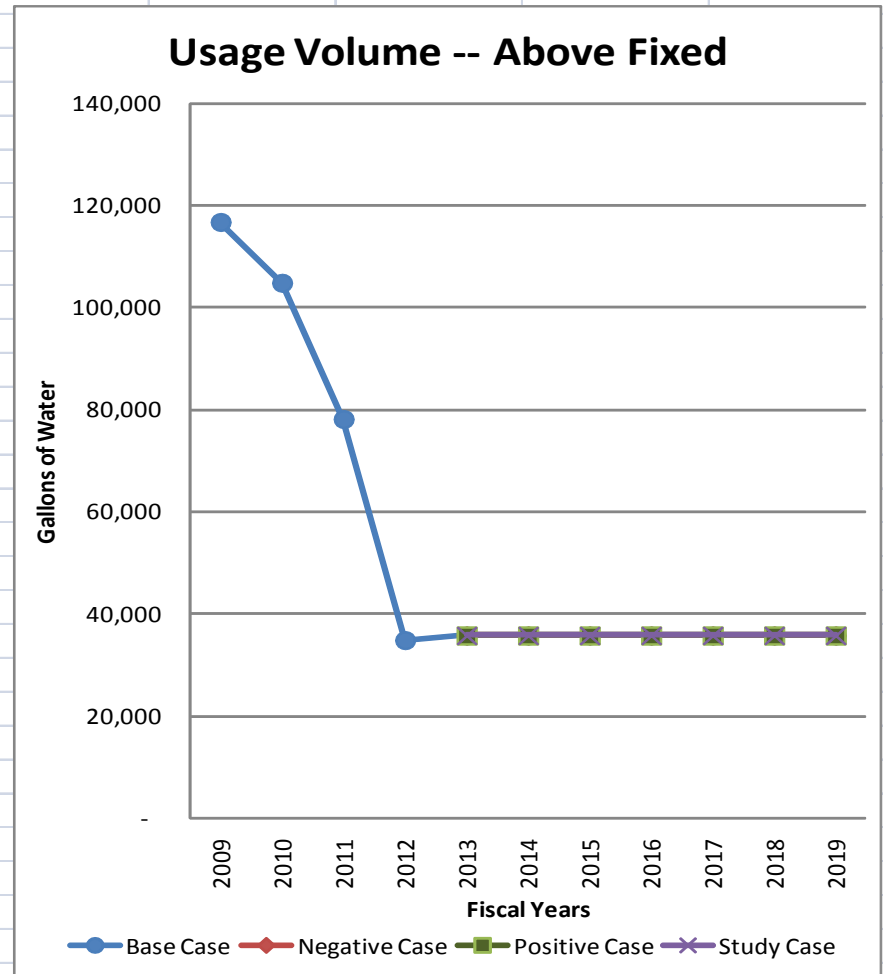
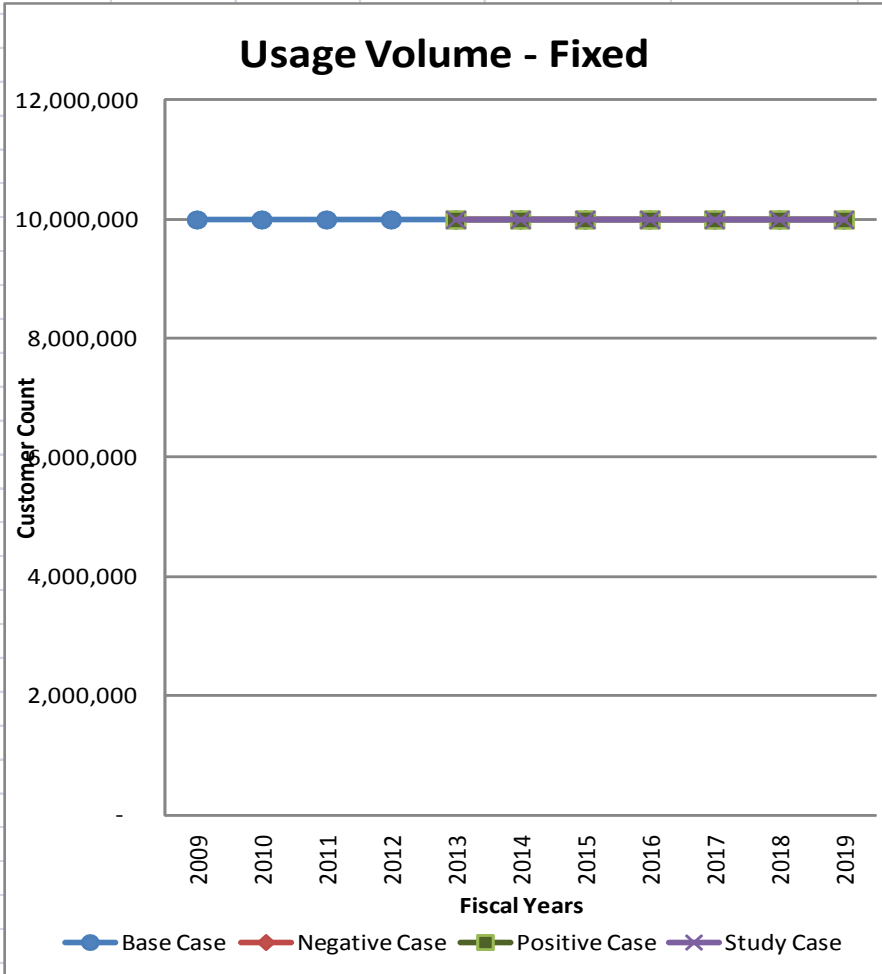
# Billing Unit Analysis – Graph

## Analysis of Billing Units -- Residential & Commercial



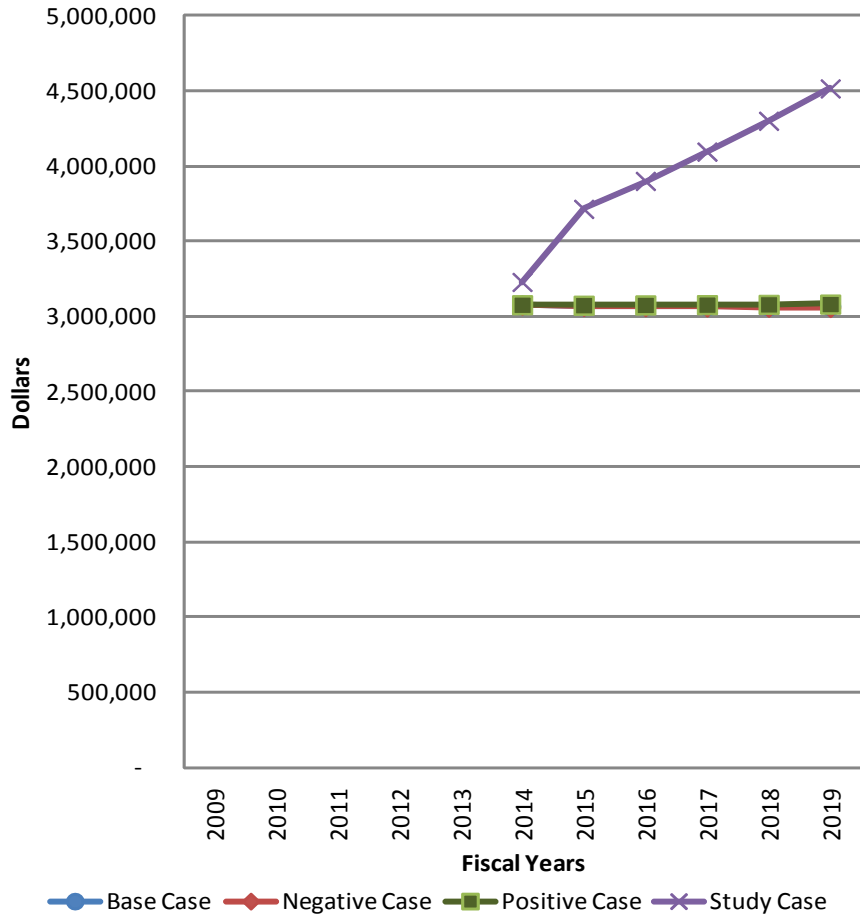
# Billing Unit Analysis – Graph

Analysis of Billing Units -- DOE

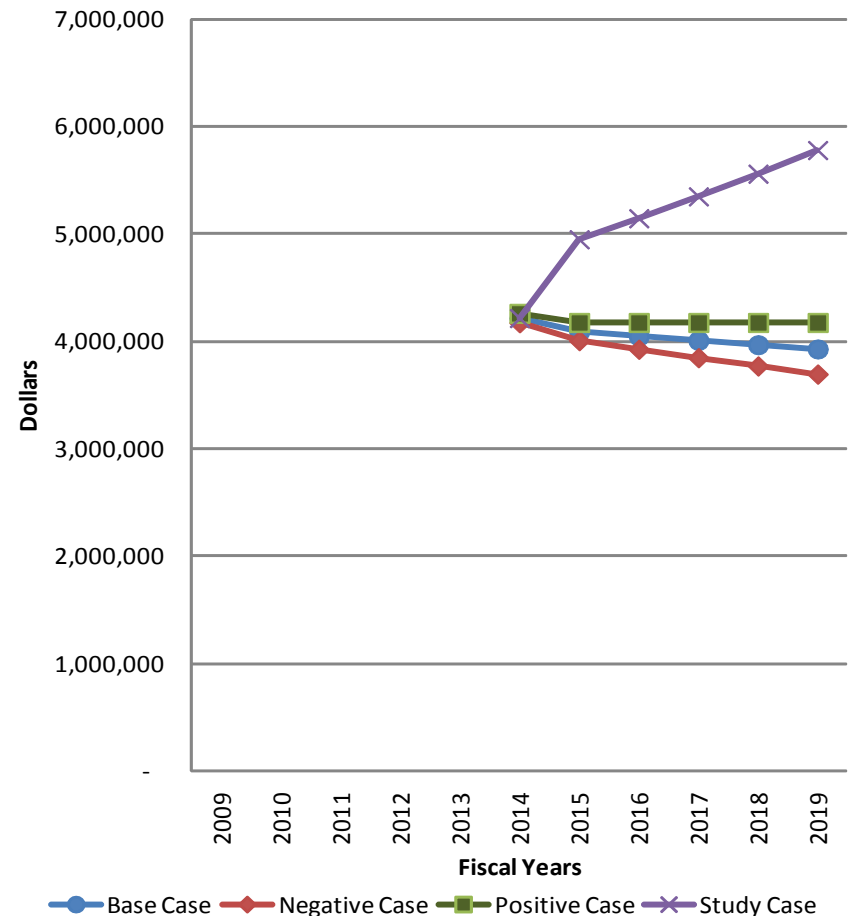


# Billing Unit Analysis – Graph

## Minimum Bill



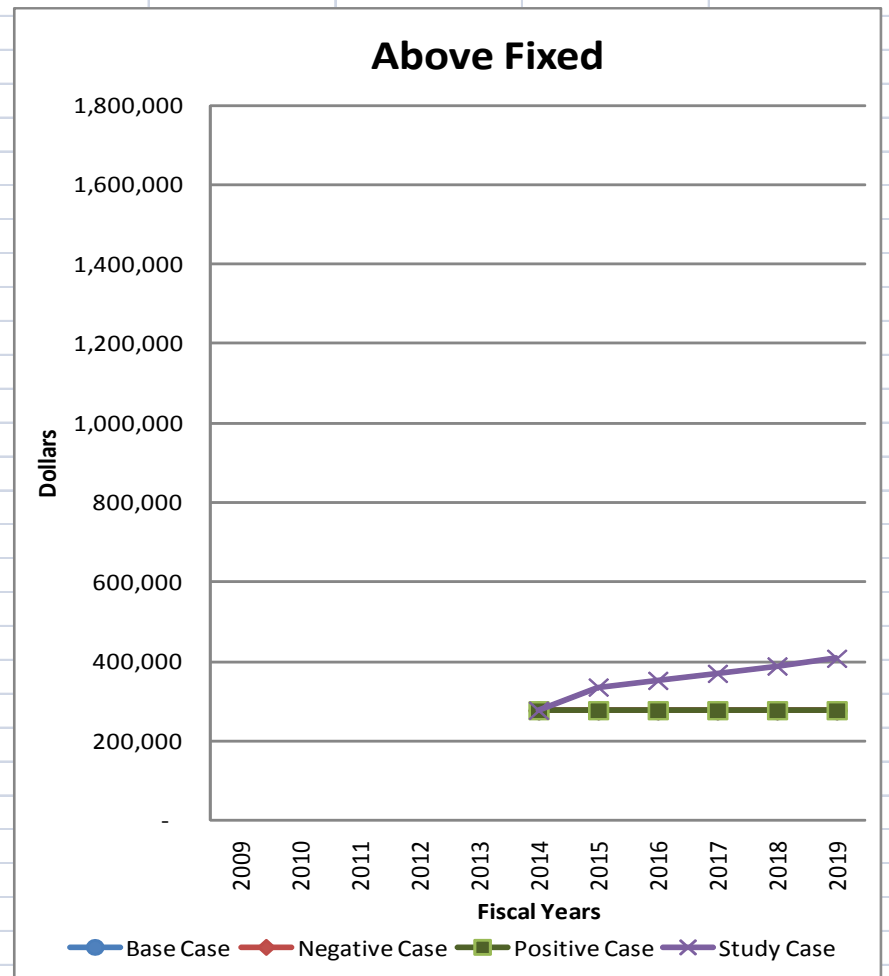
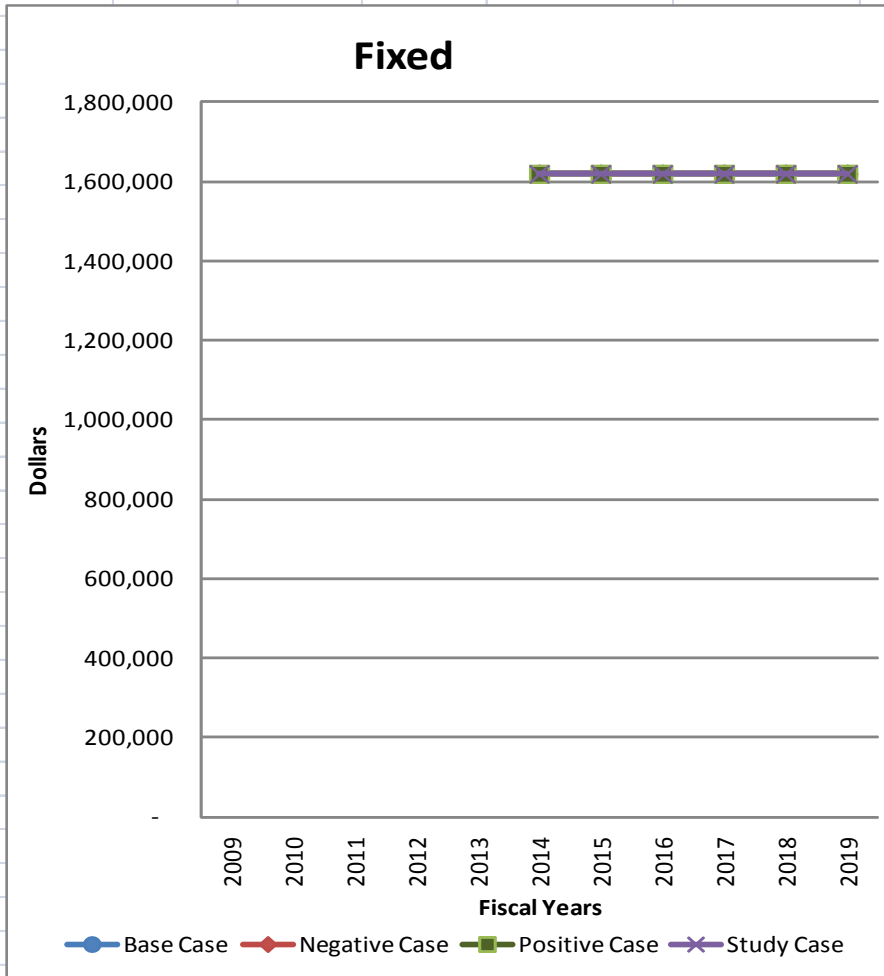
## For Volume above 2,000 Gallons





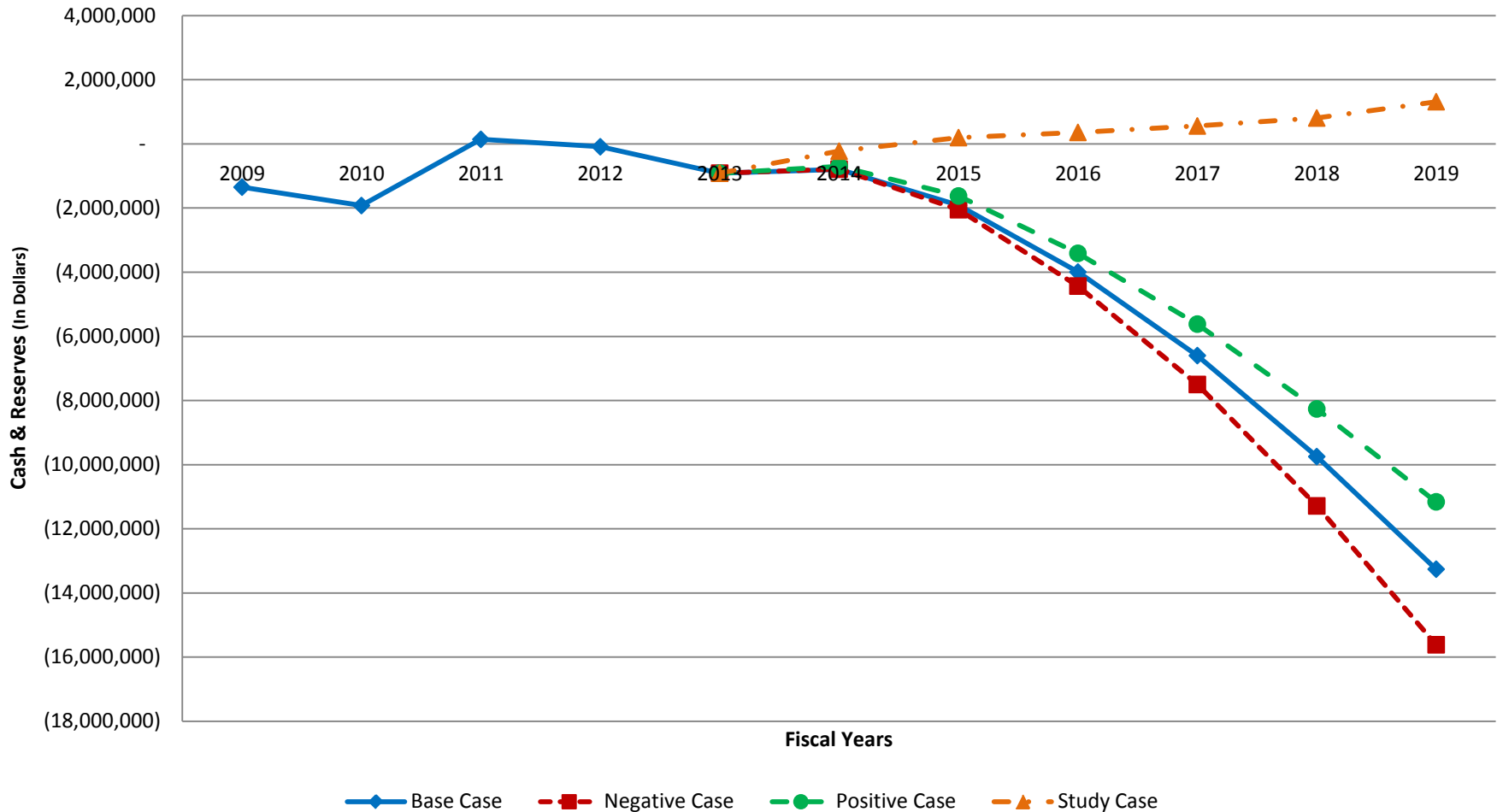
# Billing Unit Analysis – Graph

## Analysis of Revenue -- DOE



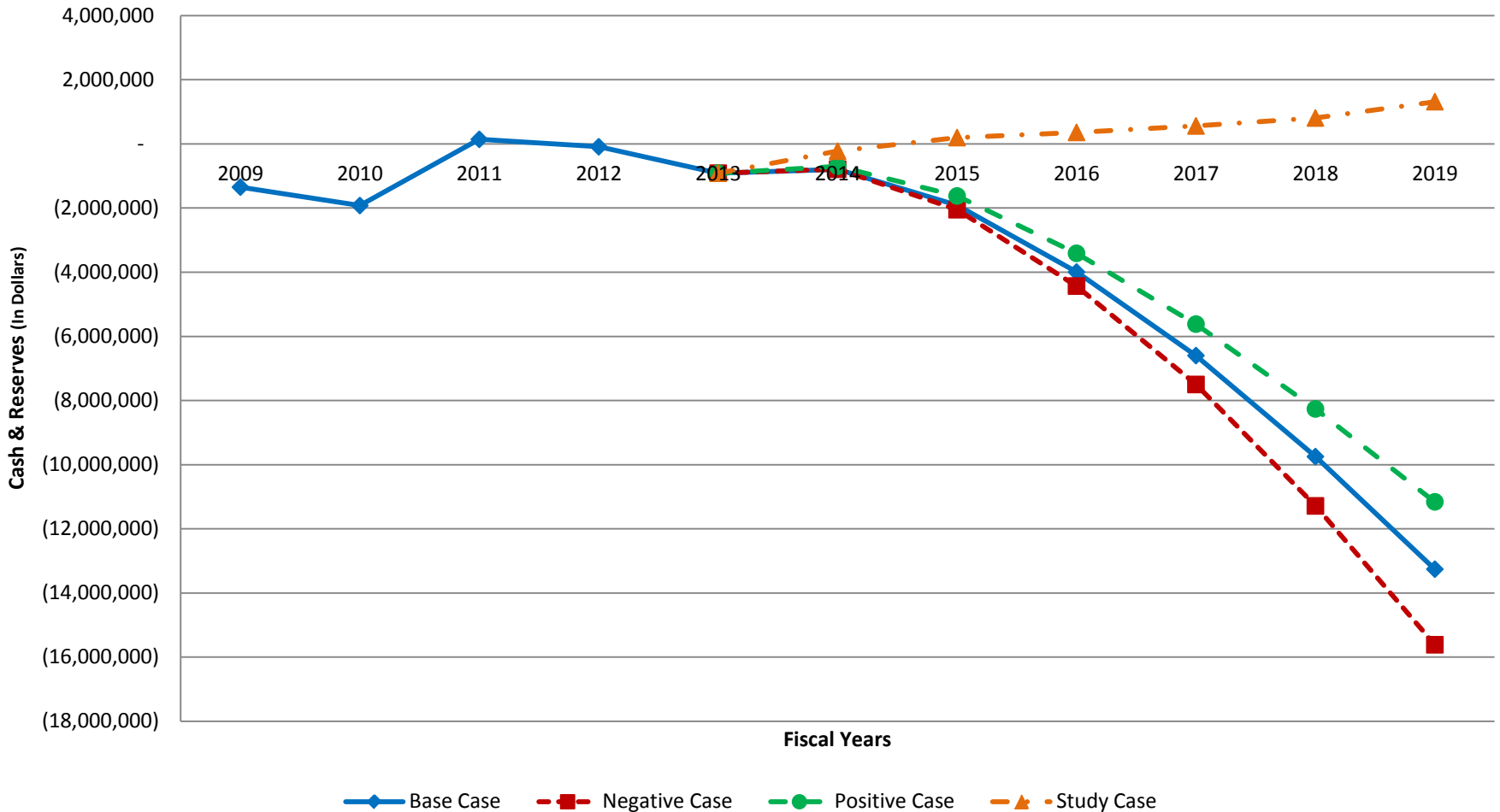
# Income Statement Analysis – Graph

## Analysis of Unrestricted Cash



# Cash Flow Analysis – Graph

## Analysis of Unrestricted Cash



# Income Statement Analysis – Base Case

## STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS

For the years ended June 30

(Base Case)

	Actual					Forecast Assumption	FORECAST					
	2009	2010	2011	2012	2013		2014	2015	2016	2017	2018	2019
<b>OPERATING REVENUES:</b>												
Waste Water Residential & Commercial Sales (non-DOE)	5,247,916	5,195,146	5,146,241	5,479,834	6,782,585		7,303,100	7,171,628	7,130,712	7,090,205	7,050,104	7,010,403
DOE Commercial Sales	2,193,276	2,116,528	1,960,109	1,654,887	1,911,524		1,897,869	1,897,869	1,897,869	1,897,869	1,897,869	1,897,869
Other Income and Revenue	65,652	65,881	50,774	57,959	74,442	0.0%	74,442	74,442	74,442	74,442	74,442	74,442
<b>Total Operating Revenues</b>	<b>7,506,844</b>	<b>7,377,555</b>	<b>7,157,124</b>	<b>7,192,680</b>	<b>8,768,551</b>		<b>9,275,410</b>	<b>9,143,939</b>	<b>9,103,023</b>	<b>9,062,516</b>	<b>9,022,414</b>	<b>8,982,714</b>
<b>OPERATING and MAINTENANCE EXPENSES:</b>												
Salaries and Wages	973,736	1,041,543	1,076,716	1,063,078	1,142,916	3.0%	1,327,203	1,517,020	1,562,530	1,609,406	1,657,688	1,707,419
Fringe Benefit Contributions	382,617	391,610	435,031	436,273	458,571	3.0%	472,328	486,498	501,093	516,126	531,609	547,558
Other Expenses	1,902,557	1,972,963	2,060,920	2,315,145	2,736,373	3.0%	2,818,464	2,903,018	2,990,109	3,079,812	3,172,206	3,267,372
Economic Development	66,000	66,000	66,000	66,000	66,000	0.0%	18,000	18,000	18,000	18,000	18,000	18,000
<b>TOTAL OPERATING AND MAINTENANCE EXPENSE</b>	<b>3,324,910</b>	<b>3,472,116</b>	<b>3,638,667</b>	<b>3,880,496</b>	<b>4,403,860</b>		<b>4,635,996</b>	<b>4,924,536</b>	<b>5,071,732</b>	<b>5,223,344</b>	<b>5,379,504</b>	<b>5,540,349</b>
<b>OTHER OPERATING EXPENSE</b>												
Depreciation Expense	1,503,807	1,546,835	1,615,188	1,874,028	1,967,058		2,067,058	2,267,058	2,367,058	2,467,058	2,567,058	2,667,058
Services from General Fund	622,196	619,078	656,753	690,370	689,638	3.0%	710,327	731,637	753,586	776,194	799,479	823,464
Tax Equivalent	682,050	668,646	713,058	745,604	785,966	2.0%	801,685	817,719	834,073	850,755	867,770	885,125
Bad Debts	18,000	18,000	36,000	15,500	18,000	0.0%	18,000	18,000	18,000	18,000	18,000	18,000
<b>Total Other Operating Expense</b>	<b>2,826,053</b>	<b>2,852,559</b>	<b>3,020,999</b>	<b>3,325,502</b>	<b>3,460,662</b>		<b>3,597,070</b>	<b>3,834,414</b>	<b>3,972,717</b>	<b>4,112,007</b>	<b>4,252,307</b>	<b>4,393,647</b>
<b>INCOME</b>	<b>1,355,881</b>	<b>1,052,880</b>	<b>497,458</b>	<b>(13,318)</b>	<b>904,029</b>		<b>1,042,344</b>	<b>384,989</b>	<b>58,573</b>	<b>(272,834)</b>	<b>(609,397)</b>	<b>(951,283)</b>
<b>MISCELLANEOUS DEBT/INCOME</b>												
Interest Expense	827,775	777,786	845,333	967,295	980,142		1,257,803	1,538,785	1,665,876	1,690,216	1,688,702	1,698,252
Loss of West End Contract & Adjustments							400,000	400,000	400,000	400,000	400,000	400,000
Amort-Debt Exp and Discount	5,279	6,048	6,942	11,803	13,423	0.0%	13,423	13,423	13,423	13,423	13,423	13,423
Costs Recovered from Users	(12,473)	(552)	-	-	-	3.0%	-	-	-	-	-	-
<b>NET INCOME BEFORE GRANT INCOME</b>	<b>820,581</b>	<b>783,282</b>	<b>852,275</b>	<b>979,098</b>	<b>993,565</b>		<b>1,671,226</b>	<b>1,952,208</b>	<b>2,079,299</b>	<b>2,103,639</b>	<b>2,102,125</b>	<b>2,111,675</b>
Grant Income	-	-	-	-	-	Input	-	-	-	-	-	-
<b>TOTAL NET INCOME</b>	<b>535,300</b>	<b>269,598</b>	<b>(354,817)</b>	<b>(992,416)</b>	<b>(89,536)</b>		<b>(628,882)</b>	<b>(1,567,219)</b>	<b>(2,020,726)</b>	<b>(2,376,473)</b>	<b>(2,711,522)</b>	<b>(3,062,958)</b>

# Income Statement Analysis – Study Case

## STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET ASSETS

For the years ended June 30

(Study Case)

	Actual					Forecast Assumption	FORECAST					
	2009	2010	2011	2012	2013		2014	2015	2016	2017	2018	2019
<b>OPERATING REVENUES:</b>												
Waste Water Residential & Commercial Sales (non-DO)	5,247,916	5,195,146	5,146,241	5,479,834	6,782,585		7,847,602	8,658,177	9,289,387	9,790,243	10,318,195	10,875,471
DOE Commercial Sales	2,193,276	2,116,528	1,960,109	1,654,887	1,911,524		1,918,664	1,955,414	1,981,946	2,003,638	2,026,584	2,050,965
Other Income and Revenue	65,652	65,881	50,774	57,959	74,442	0.0%	74,442	74,442	74,442	74,442	74,442	74,442
<b>Total Operating Revenues</b>	<b>7,506,844</b>	<b>7,377,555</b>	<b>7,157,124</b>	<b>7,192,680</b>	<b>8,768,551</b>		<b>9,840,708</b>	<b>10,688,033</b>	<b>11,345,775</b>	<b>11,868,323</b>	<b>12,419,222</b>	<b>13,000,878</b>
<b>OPERATING and MAINTENANCE EXPENSES:</b>							12.2%	9%	6%	5%		
Salaries and Wages	973,736	1,041,543	1,076,716	1,063,078	1,142,916	3.0%	1,327,203	1,517,020	1,562,530	1,609,406	1,657,688	1,707,419
Fringe Benefit Contributions	382,617	391,610	435,031	436,273	458,571	3.0%	472,328	486,498	501,093	516,126	531,609	547,558
Other Expenses	1,902,557	1,972,963	2,060,920	2,315,145	2,736,373	3.0%	2,818,464	2,903,018	2,990,109	3,079,812	3,172,206	3,267,372
Economic Development	66,000	66,000	66,000	66,000	66,000	0.0%	18,000	18,000	18,000	18,000	18,000	18,000
<b>TOTAL OPERATING AND MAINTENANCE EXPENSE</b>	<b>3,324,910</b>	<b>3,472,116</b>	<b>3,638,667</b>	<b>3,880,496</b>	<b>4,403,860</b>		<b>4,635,996</b>	<b>4,924,536</b>	<b>5,071,732</b>	<b>5,223,344</b>	<b>5,379,504</b>	<b>5,540,349</b>
<b>OTHER OPERATING EXPENSE</b>												
Depreciation Expense	1,503,807	1,546,835	1,615,188	1,874,028	1,967,058		2,067,058	2,267,058	2,367,058	2,467,058	2,567,058	2,667,058
Services from General Fund	622,196	619,078	656,753	690,370	689,638	3.0%	710,327	731,637	753,586	776,194	799,479	823,464
Tax Equivalent	682,050	668,646	713,058	745,604	785,966	2.0%	801,685	817,719	834,073	850,755	867,770	885,125
Bad Debts	18,000	18,000	36,000	15,500	18,000	0.0%	18,000	18,000	18,000	18,000	18,000	18,000
<b>Total Other Operating Expense</b>	<b>2,826,053</b>	<b>2,852,559</b>	<b>3,020,999</b>	<b>3,325,502</b>	<b>3,460,662</b>		<b>3,597,070</b>	<b>3,834,414</b>	<b>3,972,717</b>	<b>4,112,007</b>	<b>4,252,307</b>	<b>4,393,647</b>
<b>INCOME</b>	<b>1,355,881</b>	<b>1,052,880</b>	<b>497,458</b>	<b>(13,318)</b>	<b>904,029</b>		<b>1,607,642</b>	<b>1,929,083</b>	<b>2,301,325</b>	<b>2,532,973</b>	<b>2,787,410</b>	<b>3,066,882</b>
<b>MISCELLANEOUS DEBT/INCOME</b>												
Interest Expense	827,775	777,786	845,333	967,295	980,142		1,257,803	1,538,785	1,665,876	1,690,216	1,688,702	1,698,252
Loss of West End Contract & Adjustments							400,000	400,000	400,000	400,000	400,000	400,000
Amort-Debt Exp and Discount	5,279	6,048	6,942	11,803	13,423	0.0%	13,423	13,423	13,423	13,423	13,423	13,423
Costs Recovered from Users	(12,473)	(552)	-	-	-	3.0%	-	-	-	-	-	-
<b>NET INCOME BEFORE GRANT INCOME</b>	<b>820,581</b>	<b>783,282</b>	<b>852,275</b>	<b>979,098</b>	<b>993,565</b>		<b>1,671,226</b>	<b>1,952,208</b>	<b>2,079,299</b>	<b>2,103,639</b>	<b>2,102,125</b>	<b>2,111,675</b>
Grant Income	-	-	-	-	-	Input	-	-	-	-	-	-
<b>TOTAL NET INCOME</b>	<b>535,300</b>	<b>269,598</b>	<b>(354,817)</b>	<b>(992,416)</b>	<b>(89,536)</b>		<b>(63,584)</b>	<b>(23,125)</b>	<b>222,026</b>	<b>429,334</b>	<b>685,285</b>	<b>955,207</b>

# Cash Flow Statement Analysis – Base Case

## STATEMENTS OF Cash Flow

For the years ended June 30

(Base Case)

	Actual					Forecast	FORECAST					
	2009	2010	2011	2012	2013	Assumption	2014	2015	2016	2017	2018	2019
	<b>Net Income</b>	535,300	269,598	(354,817)	(992,416)	(89,536)		(628,882)	(1,567,219)	(2,020,726)	(2,376,473)	(2,711,522)
Additions to Plant (Net of Salvage & Removal)	(2,231,902)	(2,323,202)	(3,655,834)	(4,942,367)	(4,364,416)		(12,550,000)	(10,120,000)	(4,222,000)	(2,000,000)	(1,850,000)	(2,300,000)
Depreciation Expense	1,503,807	1,546,835	1,615,188	1,874,028	1,967,058		2,067,058	2,267,058	2,367,058	2,467,058	2,567,058	2,667,058
Additional Long-Term Debt	257,636	2,095,277	4,919,567	6,405,776	3,876,871		12,450,000	10,120,000	3,822,000	1,600,000	1,250,000	1,700,000
Payment of Principal on Long-Term Debt	(978,635)	(1,016,026)	(1,054,851)	(2,266,937)	(2,375,433)		(917,047)	(1,070,689)	(1,727,845)	(1,995,178)	(2,104,300)	(2,213,559)
Other	62,172	130,454	(722,325)	249,565	(716,536)		(300,000)	(300,000)	(300,000)	(300,000)	(300,000)	(300,000)
<b>Net Change in Cash</b>	<b>(851,622)</b>	<b>702,936</b>	<b>746,928</b>	<b>327,649</b>	<b>(1,701,992)</b>		<b>121,129</b>	<b>(670,850)</b>	<b>(2,081,513)</b>	<b>(2,604,593)</b>	<b>(3,148,764)</b>	<b>(3,509,459)</b>
<b>Cash at the Beginning of Period</b>	<b>(587,465)</b>	<b>(1,439,087)</b>	<b>(736,151)</b>	<b>10,777</b>	<b>338,426</b>		<b>(1,363,566)</b>	<b>(1,242,437)</b>	<b>(1,913,287)</b>	<b>(3,994,800)</b>	<b>(6,599,393)</b>	<b>(9,748,157)</b>
<b>Cash at End of Period</b>	<b>(1,439,087)</b>	<b>(736,151)</b>	<b>10,777</b>	<b>338,426</b>	<b>(1,363,566)</b>		<b>(1,242,437)</b>	<b>(1,913,287)</b>	<b>(3,994,800)</b>	<b>(6,599,393)</b>	<b>(9,748,157)</b>	<b>(13,257,616)</b>
Restricted Cash	\$ -	\$ 1,125,358	\$ -	\$ 648,312	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unrestricted Cash	\$ (1,439,087)	\$ (1,861,509)	\$ 10,777	\$ (309,886)	\$ (1,363,566)		\$ (1,242,437)	\$ (1,913,287)	\$ (3,994,800)	\$ (6,599,393)	\$ (9,748,157)	\$ (13,257,616)
West End Adjustment	\$ 90,494	\$ (61,098)	\$ 129,860	\$ 219,524	\$ 450,000		\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -
Unrestricted Cash with West End Adjustment	\$ (1,348,593)	\$ (1,922,607)	\$ 140,637	\$ (90,362)	\$ (913,566)		\$ (792,437)	\$ (1,913,287)	\$ (3,994,800)	\$ (6,599,393)	\$ (9,748,157)	\$ (13,257,616)

# Cash Flow Statement Analysis – Base Case

## STATEMENTS OF Cash Flow

For the years ended June 30

(Study Case)

	Actual					Forecast	FORECAST					
	2009	2010	2011	2012	2013	Assumption	2014	2015	2016	2017	2018	2019
<b>Net Income</b>	535,300	269,598	(354,817)	(992,416)	(89,536)		(63,584)	(23,125)	222,026	429,334	685,285	955,207
Additions to Plant (Net of Salvage & Removal)	(2,231,902)	(2,323,202)	(3,655,834)	(4,942,367)	(4,364,416)		(12,550,000)	(10,120,000)	(4,222,000)	(2,000,000)	(1,850,000)	(2,300,000)
Depreciation Expense	1,503,807	1,546,835	1,615,188	1,874,028	1,967,058		2,067,058	2,267,058	2,367,058	2,467,058	2,567,058	2,667,058
Additional Long-Term Debt	257,636	2,095,277	4,919,567	6,405,776	3,876,871		12,450,000	10,120,000	3,822,000	1,600,000	1,250,000	1,700,000
Payment of Principal on Long-Term Debt	(978,635)	(1,016,026)	(1,054,851)	(2,266,937)	(2,375,433)		(917,047)	(1,070,689)	(1,727,845)	(1,995,178)	(2,104,300)	(2,213,559)
Other	62,172	130,454	(722,325)	249,565	(716,536)		(300,000)	(300,000)	(300,000)	(300,000)	(300,000)	(300,000)
<b>Net Change in Cash</b>	<b>(851,622)</b>	<b>702,936</b>	<b>746,928</b>	<b>327,649</b>	<b>(1,701,992)</b>		<b>686,427</b>	<b>873,244</b>	<b>161,239</b>	<b>201,214</b>	<b>248,043</b>	<b>508,706</b>
<b>Cash at the Beginning of Period</b>	(587,465)	(1,439,087)	(736,151)	10,777	338,426		(1,363,566)	(677,139)	196,105	357,345	558,558	806,601
<b>Cash at End of Period</b>	(1,439,087)	(736,151)	10,777	338,426	(1,363,566)		(677,139)	196,105	357,345	558,558	806,601	1,315,307
Restricted Cash	\$ -	\$ 1,125,358	\$ -	\$ 648,312	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unrestricted Cash	\$ (1,439,087)	\$ (1,861,509)	\$ 10,777	\$ (309,886)	\$ (1,363,566)		\$ (677,139)	\$ 196,105	\$ 357,345	\$ 558,558	\$ 806,601	\$ 1,315,307
West End Adjustment	\$ 90,494	\$ (61,098)	\$ 129,860	\$ 219,524	\$ 450,000		\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -
Unrestricted Cash with West End Adjustment	\$ (1,348,593)	\$ (1,922,607)	\$ 140,637	\$ (90,362)	\$ (913,566)		\$ (227,139)	\$ 196,105	\$ 357,345	\$ 558,558	\$ 806,601	\$ 1,315,307

# Debt Schedule Statement Analysis

Schedule of Bond and Interest Requirements by Fiscal Year

Fiscal Year	Total Requirement	Total			Debt Issue #1			Debt Issue			Debt Issue - Future		
		Principal Payment	Interest Payment	Issue Amount	Principal Payment	Interest Payment	Issue Amount	Principal Payment	Interest Payment	Issue Amount	Principal Payment	Interest Payment	Issue Amount
2009	1,806,410	978,635	827,775	257,636	978,635	827,775	257,636	-	-	-	-	-	-
2010	1,793,812	1,016,026	777,786	2,095,277	1,016,026	777,786	2,095,277	-	-	-	-	-	-
2011	1,900,184	1,054,851	845,333	4,919,567	1,054,851	845,333	4,919,567	-	-	-	-	-	-
2012	3,234,232	2,266,937	967,295	6,405,776	2,266,937	967,295	6,405,776	-	-	-	-	-	-
2013	3,355,575	2,375,433	980,142	3,876,871	2,375,433	980,142	3,876,871	-	-	-	-	-	-
2014	2,174,850	917,047	1,257,803	12,450,000	917,047	1,257,803	12,450,000	-	-	-	-	-	-
2015	2,609,474	1,070,689	1,538,785	10,120,000	978,189	1,468,485	6,420,000	-	-	-	92,500	70,300	3,700,000
2016	3,393,721	1,727,845	1,665,876	3,822,000	1,527,845	1,517,576	3,522,000	-	-	-	200,000	148,300	300,000
2017	3,685,394	1,995,178	1,690,216	1,600,000	1,715,178	1,489,116	-	-	-	-	280,000	201,100	1,600,000
2018	3,793,002	2,104,300	1,688,702	1,250,000	1,761,800	1,451,302	-	-	-	-	342,500	237,400	1,250,000
2019	3,911,811	2,213,559	1,698,252	1,700,000	1,786,059	1,409,952	-	-	-	-	427,500	288,300	1,700,000
<b>Totals</b>	<b>\$ 31,658,465</b>	<b>\$ 17,720,500</b>	<b>\$ 13,937,965</b>		<b>\$ 16,378,000</b>	<b>\$ 12,992,565</b>		<b>\$ -</b>	<b>\$ -</b>		<b>\$ 1,342,500</b>	<b>\$ 945,400</b>	<b>\$ 8,550,000</b>