

**Capital Improvement Plan
For
Public Water System**



Town of MIDDLEBOROUGH

July 2011

FINAL DRAFT

**Funded by a Grant
From**

**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF MUNICIPAL SERVICES**

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July 7, 2011

Mr. Charles J. Cristello, Town Manager
Town of Middleborough
10 Nickerson Avenue
Middleborough, MA 02346

Subject: **Capital Improvement Plan**

Dear Mr. Cristello:

The Town of Middleborough's has received a MassDEP Capital Improvement Plan (CIP) Grant for the development of a 20-year CIP. Historically the water system has been routinely evaluated; including 1975, 1987, and most recently in 2003 and 2006. Following the evaluations there has usually been a significant capital investment in the form of new well supplies/pumping stations, water storage facilities or water system infrastructure improvements. However, at the time of the most recent evaluation, the possibility of a Resort Facility being developed within Town was in the fore-front. Since that time development of a Resort Facility has become questionable but the need for system improvements including additional/replacement supplies, water treatment facilities, water storage maintenance/replacement and various distribution system improvements is apparent. Clearly the development of a long-range CIP for the water system is a prudent step in coordinating these capital projects. As part of the CIP, water rate increases were evaluated to ensure water revenues were sufficient to meet anticipated costs of the Water Division through the 20-yr. CIP period.

This CIP summarizes the variety of recent studies, evaluations and system modifications proposed into a cohesive program of capital projects to be undertaken over the next 20-years by the Town.

The major tasks within the scope of our study and development of the CIP:

1. Review existing information available in Water Division files, including previous planning and engineering studies, evaluations, inspection reports, etc. related to water system condition and needs.
2. Review historic water usage, population projections, per-capita water demand, unaccounted-for-water, water conservation and other pertinent information.
3. Develop updated projections of water supply needs, through 2030, that will allow the Town to prepare for growth and its impact on the water system.
4. Develop a 20-year CIP to address the Division's short- and long-term needs with specific emphasis on the following water system components:
 - Source
 - Treatment
 - Storage Facilities
 - Pumping Facilities
 - Distribution Mains
 - "Other" Water Works Components

5. Complete the Mass DEP Capital Improvement Planning document, latest revision August 2010, to support the CIP.
6. Provide assistance with grant paperwork as appropriate.
7. Review the updated CIP with the Middleborough Board of Selectmen at a regularly scheduled public meeting.

Past Reports

The Water Division has had a number of engineering studies of its water system and the individual components of the system over the past few years. The purpose of this CIP is to review past reports, evaluate conclusions reached to determine the current status of the recommended improvements, update costs and develop a coherent improvement plan for the Water Division to follow over the next twenty years. CIPs inherently need to be re-evaluated on a routine basis. The list of reports used as a basis for this CIP is detailed on pages 5 through 12 in the Capital Improvement Planning document (See Appendix).

Background

The Town of Middleborough experienced steady population growth with increased growth rate during the 1960's to 1980's period. The Town's population has doubled since 1940 from 9,032 to a level of 19,941 in 2000. The population of the Town of Middleborough, as recorded by Federal Census since 1980, is shown in Table 1.

With expansion of the commuter rail and the increase in housing construction it is expected population in Middleborough will continue to increase in the foreseeable future. The Massachusetts Institute for Social and Economic Research (MISER) has projected a population of 21,636 by 2010, while the Southeast Regional Planning and Economic Development District (SRPEDD)¹ has projected a population of 22,415 in 2010, 24,889 in 2020 and 26,127 in 2025. The Town's Master Plan has indicated similar population growth. For purposes of this report we have used the SRPEDD population projections.

Table 1-Population and Service Population

<u>Year</u>		<u>Population</u> MISER Projected	SRPEDD Projected	<u>% Served</u> ²	<u>Population</u> <u>Served</u>
1980	Actual	16,404			
1990		17,867			
2000		19,941		0.65	12,950
2005		20,937	20,704	0.67	14,000
2010		21,374 ³	21,636	0.74	15,970
2020			24,889		
2025			26,127		

¹ SRPEDD projections are currently being updated.

² Estimated by Amory Engineers

³ Preliminary value from US Census

The MA Department of Conservation and Recreation (MA DCR) Office of Water Resources (OWR) is the state agency tasked with forecasting water needs for communities in Massachusetts. Based on DCR projections service population in Middleborough is projected as follows:

Table 2-Mass DCR-OWR Service Population Projection

	2008 (Base)	2010 (Current)	2015	2020	2025	2030
Population	21,117	21,374	n/a	25,128	26,342	n/a
Percent Served	n/a	69%	n/a	71%	75%	n/a
Service Population	n/a	15,970	16,731	17,841	19,757	20,678
Employment Projections	8,963	n/a	9,545	9,818	11,117	12,416

Water Production

Annual water production since 2000 is presented in Table 3, average daily production over the ten-year period has ranged from 1.48 mgd (2009) to a high of 1.70 mgd (2004). The recent decline in annual production has occurred since Ocean Spray closed its processing facility¹. Since this closing the Town has aggressively pursued additional light industrial and commercial entities to offset the decline in demand and broaden the tax base. Maximum daily demand has ranged from a high of 3.13 mgd (2008) to a low of 2.43 mgd (2009). The ratio of maximum daily demand to average day demand has varied from 1.93 to 1.55 with a recent upwards trend. With the loss of the base load at Ocean Spray and the continued residential growth it is anticipated that the ratio will remain high on the order of 1.7 to 1.8. For purposes of analysis we have used 1.8 as a ratio between maximum daily demand and average daily demand.

Table 3-Water Production

<u>Year</u>	<u>Annual Production</u>	<u>Average Daily Demand (mgd)</u>	<u>Maximum Daily Demand (mgd)</u>	<u>Ratio MDD: ADD</u>
2000	556.424	1.524	2.450	1.61
2001	546.022	1.496	2.542	1.70
2002	595.070	1.630	3.108	1.91
2003	557.512	1.527	2.566	1.68
2004	622.110	1.704	2.638	1.55
2005	601.250	1.647	2.862	1.74
2006	563.068	1.543	2.862	1.85
2007	618.244	1.694	2.901	1.71
2008	592.068	1.622	3.132	1.93
2009	540.379	1.480	2.43	1.64
2010	605.353	1.659	3.12	1.88
2011 (to date)				
Average	581.591	1.593	2.783	1.745
Maximum	622.110	1.704	3.132	1.930
Minimum	540.379	1.480	2.430	1.550

¹ Ocean Spray has recently indicated their water use will increase as a product line is expanded.

Water Use

Water forecasts are based on historic consumption trends, demand management and projected population served. In addition the breakdown between user categories (residential, commercial, industrial, etc) are necessary to accurately predict future water needs for a community. Recent water conservation efforts have stressed reducing per capita consumption and eliminating (or at least minimizing water losses - i.e., unaccounted-for-water). Conservation efforts have been successful recently in Middleboro; per capita consumption is below 65 gpcd and an Unaccounted-For-Water Percentage (UAW %) is in the range of 10 percent. Recent historic per capita consumption and unaccounted-for-water is as follows:

Year	Per-Capita Consumption	UAW %
2005		
2006	68	12
2007	69	9
2008	62	11
2009	55.6	10.7
2010	62.6	7.8
<i>Projected</i>	<i>65</i>	<i>10</i>

Future Water Production

DCR

<u>Year</u>	<u>Annual Production</u>	<u>Average Daily Demand (mgd)</u>	<u>Maximum Daily Demand (mgd)</u>
2015	620.50	1.70	3.06
2020	653.35	1.79	3.22
2025	726.35	1.99	3.58
2030	777.45	2.13	3.83
Build-Out	2,270.30	6.22	11.196

Based on the above noted population increases, per capita demand of 65 gpcd plus an allowance for commercial/industrial demand increases and a 10% unaccounted for water we estimate that demands will increase to the following:

Amory Engineers

<u>Year</u>	<u>Annual Production</u>	<u>Average Daily Demand (mgd)</u>	<u>Maximum Daily Demand (mgd)</u>
2015	660.65	1.81	3.26
2020	733.65	2.01	3.62
2025	806.65	2.21	3.98
2030	879.65	2.41	4.34

Supply Facilities

Currently the Town is supplied by eleven wells in total: one dug well and ten gravel-pack wells. See Appendix Figure 1 for well supply locations.

Table 4 - Well Physical Data

Well	Type	Year Constructed	Size (in. x in.)	Depth (ft.)	Screen Length (ft.)
Rock #1	Gravel Pack	1949	24 x 48	49.5	15
Rock #2	Gravel Pack	1949	24 x 48	49.5	15
East Main #1	Gravel Pack	1959	24 x 48	51	15
East Grove	Dug Well	1885	22-ft.	30	n/a
Tispaquin #1	Gravel Pack	1970	24 x 48	47	12
Miller	Gravel Pack	1973	18 x 36	60.08	18
East Main #2	Gravel Pack	1970	24 x 48	47.25	10
Plympton	Gravel Pack	1979	24 x 48	60	10
Cross	Gravel Pack	1981	24 x 48	45	10
Tispaquin #2	Gravel Pack	1988	24 x 48	44	10
Spruce	Gravel Pack	1988	36 x 48	56	23.4

The CIP has focused on the following Source related items:

- *Update the existing well optimization study conclusions focusing on current well conditions and water quality.*

As shown in Table 5, well condition as measured by well specific capacity has declined to approximately 80% of original condition at the East Main and Tispaquin wells. All four of these wells were recently (2007 and 2009) redeveloped. In connection with the construction of the water treatment facilities for these supplies, satellite wells were included in the proposed scope of work. In order to have a reasonable margin of safety of well capacity to projected maximum day demand, maintaining well yield is paramount. The Well Optimization Study evaluated the use of satellite wells to supplement existing well capacity.

Table 5 - Well Physical Condition

Well	Original Capacity (gpm)	Original Specific Capacity (gpm/ft)	Current Output (gpm)	Current Specific Capacity (gpm/ft)	Last Well Redevel- opment	WMA Permit Volume (gpm)	WMA Permit Volume (mgd)	%Current Capacity vs.WMA Permit
Rock #1	200	25.8	192	60	n/a	200	0.29	95%
Rock #2	225	81.5	210	65.6	n/a	200	0.29	104%
East Main #1	325	19.7	250	9.7	2007	320	0.46	78%
East Grove		70.6				300*	0.43	0%
Tispaquin #1	180	17.3	151	7.6	2009	180	0.26	84%
Miller	550	20.8	643	23.8	2003	550	0.79	117%

Table 5 - Well Physical Condition (continued)

Well	Original Capacity (gpm)	Original Specific Capacity (gpm/ft)	Current Output (gpm)	Current Specific Capacity (gpm/ft)	Last Well Redevelopment	WMA Permit Volume (gpm)	WMA Permit Volume (mgd)	%Current Capacity vs.WMA Permit
East Main #2	325	19.8	237	14.4	2007	320	0.46	74%
Plympton			145	28.8	n/a	100	0.14	216%
Cross	200	23.5	196	19.4	2006	200	0.29	97%
Tispaquin #2	225	17.3	151	8.2	2009	225	0.32	68%
Spruce			455	39.1		400	0.58	113%
Total			2,695			2,995	4.31	

- *Consider the use of satellite or replacement wells to augment existing well capacity.*

The Well Optimization Study recommended the following satellite or replacement wells to increase system pumping capacity:

- ✓ East Main Street Install two new 8-in. (12-in minimum) satellite wells each 150-200 gpm)
 Install new pumps in four wells (2 existing and 2 new)
 Incorporate into Water Treatment Plant
 Pump at 325 gpm for 20 hrs (increase from 16-hrs)
 Reestablish permitted WMA withdrawal from this site by pumping at higher rate 350 gpm (for shorter duration)

- ✓ Tispaquin Install two new 8-in. (12-in minimum) satellite wells each 150-200 gpm)
 Install new pumps in four wells (2 existing and 2 new)
 Incorporate into Water Treatment Plant
 Pump at 225 gpm for 20 hrs (increase from 16-hrs)
 Reestablish permitted WMA withdrawal from this site by pumping at higher rate 265 gpm (for shorter duration)

- ✓ Miller Street Install two new 8-in. (12-in minimum) satellite wells each 150-200 gpm)
 Install new pumps in three wells (1 existing and 2 new)
 Pump at 660 gpm for 20 hrs (increase from 16-hrs)
 Increase permitted WMA withdrawal from this site to 700 gpm

- ✓ Spruce Street Install redundant well (480 gpm) or satellite well (200-250 gpm) and re-permit
 Increase permitted WMA withdrawal from this site to 567 gpm (0.61 mgd)

- ✓ Rock Install two new (one 12-in. and one 18-in) satellite wells Rock 1 - 200-250 gpm; Rock 2 – 400-500 gpm)
 Install new pumps in four wells (2 existing and 2 new)
 Pump at 420 gpm (Rock 1 combined) and 920 gpm (Rock 2 combined) for 20 hrs (increase from 16-hrs)

- ✓ Cross Street Increase permitted WMA withdrawal from this site to 900 gpm (1.30 mgd)
- ✓ Cross Street Establish increased pumping rate 245 gpm for 20 hrs (increase from 16-hrs)
- ✓ Plympton Street Install new 8-in. (12-in minimum) satellite well (each 150-200 gpm)
Install new pumps in two wells (1 existing and 1 new)
Pump at 220 gpm for 20 hrs (increase from 16-hrs)
Increase permitted WMA withdrawal from this site to 340 gpm (0.23 mgd)

During the design of the satellite wells additional short term test pumping will be required, due to the size of the Town-owned parcels for these sites care will be required to avoid sensitive areas (wetlands/water bodies), avoid well drawdown interference and maintain Zone I land ownership.

○ ***Review status of four potential sources that are at various stages in the New Source Approval Process (Wilber well site, Mizaras well site, Cross Street well site and Onges well site).***

- ✓ Wilber well site
The Wilbur Well site has received MassDEP approval for Zone II and construction of permanent well supply facilities (January 5, 1996 and September 20, 1996), however because the site is remote from the existing distribution system, it includes significant distribution system infrastructure. Approval letter indicated an approved rate of 250 gpm (0.36 mgd) with a provision for reevaluating at time of well construction. Current estimated yield of this site is 270 gpm (0.39 mgd). Estimated cost to develop this site is \$2,000,000.
- ✓ Mizaras well site
The Mizaras Well site is within the New Source Approval Process; we understand that MassDEP approval for construction of permanent well supply facilities was recently issued on April 26, 2011. The project includes a connection to the distribution system in Plymouth Street. However, due to relocation of the test well site to one of a potentially higher yield (from a site with a 160 gpm (0.23 mgd) yield to one 275-ft away with an estimated yield three times as great) the Town does not have ownership of the entire Zone I (400-ft. radius). Land swap/exchange is under negotiation. Safe yield of this site is 457 gpm (0.658 mgd). Estimated cost to develop this site is \$1,500,000.
- ✓ Cross Street well site
The Cross Well site has had a prolonged pumping test on an 8-in. diameter well conducted at the site. Currently negotiations are on-going for land purchase for Zone 1 control and access. We understand that a New Source Approval Report will be submitted shortly. Estimated yield of this site is 350 gpm (0.5 mgd). Estimated cost to develop this site is \$1,500,000.
- ✓ Onges well site
The Onges Well site has had a prolonged pumping test on an 8-in. diameter well conducted at the site. We understand that a New Source Approval Report that includes determination of Zone II limits and evaluation of the prolonged pumping test will be submitted at some point in the near future. Estimated yield of this site is 350 gpm (0.5 mgd). Estimated cost to develop this site is \$2,000,000.

- ***Develop a program to meet projected water demands through 2030.***

Appendix Figure 2 presents historic and projected water demands from 2000 through 2030. The current yield of existing supplies can meet current maximum day demands with all supplies in operation. However, good waterworks practice suggests that a system be able to meet maximum day demands without the largest well in service. Under these conditions the Water Division could meet current maximum day demands but would be required to pump all supplies for 24-hrs per day rather than the usual practice of 18 hrs. The Well Optimization program and the development of three new supplies have been coordinated into the CIP to meet projected future demands without the largest supply and pumping for an 18 to 20 hr. period. In addition well cleaning and redevelopment of all supplies on a 5-yr. basis and replacement of older well supplies when they reach the end of their useful lives has been included in the CIP.

The continued groundwater exploration practices and the “banking” of future well sites should be continued. The Well Optimization program is based on increasing individual site yields, under most cases approval of MassDEP will be required.

Treatment

- ***Update water treatment plant cost estimates for iron and manganese removal facilities at East Main Street Wells 1 and 2 and Tispaquin Wells 1 and 2.***

Contract documents for the construction of water treatment facilities at East Main Street and Tispaquin Wells have been submitted and approved by MassDEP. The plants have been designed on the basis of a biological treatment process (Ferazur and Mangazur Filter media) for iron and manganese removal.

In connection with a DWSRF Grant Application partial funding was offered to the Town. Due to diminished water sales revenues and other on-going capital projects the Town opted to not pursue the DWSRF process by letter of July 27, 2010. Included as part of the design of the treatment plants were satellite wells and replacement of pumping equipment at the existing supplies. The updated cost for each of the treatment plants is \$4,000,000.

- ***Review status of chemical feed system upgrades included under the existing SCADA improvement program.***

The Water Division has an on-going project for the installation of SCADA (Supervisory Control and Data Acquisition) equipment at all well supplies, chemical feed buildings, water storage tanks and a central facility (East Grove Street Pumping Station). The bid cost for the project was \$ 683,000 with a bid add-in of \$65,000 for stand-by power system at Spruce Street Well. Other chemical systems alarm/monitoring retrofits and modifications are to be installed by Water Division staff. Work is presently on schedule and anticipated to be complete by Summer 2011.

- ***Develop a program to construct the water treatment plants and potentially fund them through the Mass DEP Drinking Water SRF program.***

As noted above the current capital cost for construction of a water treatment plants at East Main Street and Tispaquin wells is approximately \$8,000,000. If the Town were to bond this as they do for normal capital projects (temporary construction BAN plus 20-yr. bond at 4.75%) overall cost for this project for principal and interest would be \$15.6 mil; If the Town were to pursue the DWSRF funding option (20-yr. bond at 2.5% plus perhaps grant funding) overall cost for funding this option would be \$13.2 mil. less the amount of the grant; approximately a \$2.5 mil plus grant amount savings. The CIP assumes each project will be funded via a MassDEP DWSRF loan and grant. Due to budgetary constraints, the Water Division believes that constructing the plants independently, East Main Street in 2015 and Tispaquin in 2017, logically fits into the CIP.

- ***Other water quality/treatment issues to be addressed by the CIP.***

The Water Treatment Facilities at East Grove Street Well Supply are old, with original components dating back to the late 1800's and a plant upgrade in the 1930's; although it currently produces treated water meeting all requirements. At some point the Town will need to consider upgrading / replacing the slow-sand treatment process. An allowance of \$1.5 mil. at today's cost has been allowed for this work within the second ten-yr. period of the CIP.

In connection with the US EPA Ground Water Rule (GWR), the Water Division submitted information to MassDEP in November 2009. At that time it did not appear that the Water Division wells achieved the 4-log inactivation required. However, with discharge pipe modifications and/or chlorine adjustment the required CT could be satisfied. In addition additional sampling lines/chlorine analyzers may be necessary. A \$400,000 allowance over two years has been included in the CIP. Costs are based on Water Division personnel doing the pipe modifications.

Storage Facilities

- ***Review recent water storage tank inspection reports.***

The 500,000 gallon Elevated Riveted Steel Water Storage Tank was last inspected September 8, 2009. In May of 2011 it was reviewed in accord with MassDEP guidelines as part of the Town's Annual Sanitary Storage Inspections. As you are aware the elevated tank was constructed in 1947 and reportedly last maintained (i.e., painted) in the mid-1980's. Replacement of this tank was under consideration in connection with the development of a Resort Facility in Town. The inspection and cleaning (sediment removal) included a visual inspection of all exterior and interior components including the following:

- Exterior: Wall and bowl surfaces, anchor bolts and support components, ladder, safety cages and catwalk, overflow, roof, vent and access hatches;

Generally exterior components were found to be structurally sound but protective coatings were in various stages of failure (poor adhesion and reduced film thickness resulting in exposed steel and blotch rusting).

- Interior: Wall, floor and bowl surfaces, piping (riser and overflow);
Generally interior components were found to be structurally sound but protective coatings were in various stages of failure (poor adhesion, coating blisters and reduced film thickness resulting in exposed steel and blotch rusting).

The report included the recommendation of complete removal of all coating systems and re-coating of all surfaces and replacement of all cross-brace pins on the support legs. Corrective action at locations of pitting (exterior, interior and at rivets) will also need to be addressed during the rehabilitation. Although no estimate of cost is included in the report, we estimate that complete interior and exterior rehabilitation of this tank will be in the range of \$250,000 to \$350,000. As part of the annual sanitary survey inspection more immediate items were noted, an allowance of \$250,000 was included in the CIP to address these deficiencies immediately.

- *Review replacement evaluation versus development of a rehabilitation program for the coating system of the 0.5 mil. gal. Fire Tower elevated water storage tank.*

Due to other large capital projects included within the CIP, replacement of the 0.5 mil. gal elevated tank was delayed until 2019 to allow construction to be completed before the Barden Hill Tank is next maintained. As noted above an allowance of \$250,000 was included in the CIP for more immediate repair needs and complete interior/exterior rehabilitation.

- *Review status of water quality improvement program and develop a rehabilitation program for the coating system of the 5.0 mil. gal. Barden Hill Tank.*

Currently the Water Division has a contract for the installation of in interior tank circulation system; it has been temporarily delayed while the SCADA contract is completed. The work has been rescheduled for Fall 2011. Estimated project cost is \$150,000. The primary purpose of the interior circulation system is to prevent stagnation and improve water quality.

The 5.0 million gallon Barden Hill Steel Water Storage Tank was last inspected November 23-25, 2009. In May of 2011 it was reviewed in accord with MassDEP guidelines as part of the Town's Annual Sanitary Storage Inspections. As you are aware the tank was constructed in 1980 and reportedly last maintained (i.e., painted) in the 1999/2000. The inspection and cleaning (sediment removal) included a visual inspection of all exterior and interior components including the following:

- Exterior: Wall surfaces, anchor bolts, ladder, safety cage, overflow, roof, vent and access hatches;
Generally exterior components were found to be structurally sound but protective coatings for approximately 10% of exterior surfaces were showing reduced film thickness resulting in blotch rusting.
- Interior: Wall, floor and roof surfaces,
Generally interior components were found to be structurally sound but protective coatings for approximately 10% of exterior surfaces were showing reduced film thickness resulting in blotch rusting.

Based on the above inspections, rehabilitation work has been scheduled to occur after the new 1.5 mil. gal. elevated tank is on-line.

- ***Develop a program to provide sufficient water storage facilities through 2030.***

Based on previous studies, the Water Division has sufficient storage through 2030, however when the Barden Hill tank is removed from service for rehabilitation, system storage is limited to the 0.5 mil. gal. elevated storage tank, significantly undersized. Previous studies have investigated alternative sites throughout Town. The CIP assumes short term repair of the elevated tank, construction of a replacement tank in 2019, and rehabilitation of the Barden Hill Tank in 2020. Construction of additional storage has been scheduled in 2025. The proposed tank site in South Middleborough requires additional infrastructure to insure it operates correctly.

Pumping Facilities

- ***Review condition of existing pumping facilities based on recent inspections/ evaluations.***

The Water Division has recently increased its maintenance at existing well pumping stations, including roof repair, painting, exterior site maintenance, etc. When satellite or replacement well supplies are installed upgrades at existing pumping facilities should be considered. Based on anticipated retained earnings with the proposed rate increase, there should be sufficient monies available to accomplish these improvements.

- ***Based on results of Source CIP matters (replace/augment existing supplies and development of potential supplies) develop a program to upgrade existing/ construct new pumping facilities).***

The CIP includes the following supply improvements:

- Satellite Wells
 - Spruce Street Well 2012
 - Rock Wells 2012
 - Miller Street Well 2014
 - East Main Street Wells 2015
 - Tispaquin Wells 2017
 - Plympton St./Cross St. 2018
- New Supply Wells
 - Mizaras Well 2013
 - Cross Street Well 2021
 - Wilbur Well 2028
- Well Cleaning and Redevelopment
 - All Well Supplies once every 5-yrs.
- Well Replacement (due to age of well)
 - Rock Wells 2014
 - Tispaquin Wells 2020
 - East Main Street 2024
 - Plympton St./Cross St. 2028

Distribution Mains

- *Review existing watermain and appurtenance inventory and most recent General Accounting Standard Board (GASB) 34 update. Update inventory using GASB 34 standards.*

The Water Division has had its fixed assets inventoried utilizing GASB 34 standards for a number of years. The most recent accounting indicated a “Net Book Value” of in excess of \$16.8 mil. The inventory has been updated to account for changes since the last report in 2008. Summary tables are included in the Appendix.

- *Review existing water system hydraulic report relating to complaint/break/ repair/water quality and water age information.*

The Water Division staff has been maintaining an inventory of watermain complaints, breaks/repair information. Since the development of the unidirectional flushing program – water quality complaints have been declining. The Water Division has been performing the program over the past four years and has seen a general 10% increase in available flows and a decline in water used for flushing operations; indicating significant water quality improvement as a result of the flushing program. Until the water treatment plants come on-line for East Main Street and Tispaquin wells water quality complaints should be anticipated even with the aggressive approach to flushing. Continuation of the unidirectional flushing program and the maintenance of the complaint/break/repair log is essential to maintaining/documenting water quality in the system.

- *Develop a prioritized watermain upgrade/replacement program through 2030.*

By the end of the CIP planning period approximately 15 percent of the system distribution will be 100 yrs. old or greater (i.e., installed prior to 1930); this represents about 115,000 l.f. of main; In order to replace this over the 20-yr. planning period over one mile per year of pipe would need to be replaced. With all the other work necessary throughout the system the Water Division believes it can support approximately 2,500 to 3,000 ft. per year and has included this allowance in the CIP. As the opportunity arises to replace older main in connection with other capital projects, the Water Division will coordinate with other Departments wherever feasible. Included within the Appendix is a listing of watermain by installation date; the list has been annotated to develop a prioritized schedule.

Table - Water Main Inventory (by Year Installed)

Year	Material (ft.)			Total (feet)	Total (percent)
	Cast Iron	Ductile Iron	PVC		
1886-1900	86,310	0	0	86,310	12.0
1901-1910	3,960	0	0	3,960	0.6
1911-1920	11,690	0	0	11,690	1.6
1921-1930	11,950	0	0	11,950	1.7
1931-1940	18,220	0	0	18,220	2.5
1941-1950	183,755	0	0	183,755	25.6
1951-1960	16,475	0	0	16,475	2.3
1961-1970	59,770	3,510	0	63,280	8.8

1971-1980	42,055	10,005	0	52,060	7.3
1981-1990	11,755	100,940	0	112,695	15.7
1991-2000	3,600	150,825	2,950	157,350	21.9
2001-Present	0				
Total	449,540	265,280	2,950	717,745	100
	62.6%	37.0%	0.6%		

6-in. mains or larger; a total of 22,765 l.f. of water services or mains are 4-in. or smaller.

“Other” Water Works Components

- o *Review status of existing SCADA improvement program.*

The Water Division has an on-going project for the installation of a SCADA (Supervisory Control and Data Acquisition) equipment at all well supplies, chemical feed buildings, water storage tanks and a central facility. The bid cost for the project was \$ 683,000 with a bid add-in of \$65,000 for chemical feed system modifications. Work is presently on schedule and anticipated to be complete by Summer 2011.

- o *Review recent water rate reports and evaluations including the most recent (July 2010- retroactive to April 2010 consumption) rate increase and existing debt service schedule.*

As part of the development of the CIP, water rate analysis was performed. The Water Division charges customers on a quarterly basis for water used. The charges include a minimum charge (in essence a meter charge that varies in proportion to meter size) and additional water use based on a three step increasing block rate schedule. Currently as part of the minimum charge customers receive the first 500 c.f. of water use; the additional steps (501 to 2,500 c.f.; 2,501 to 25,000 c.f.; and over 25,000 c.f.) charge for water consumption above the minimum. The Water Division’s current rate schedule is as follows:

Item	Quarterly Water Rates and Charges
Minimum Charge	Varies \$38.03(5/8-in) to \$1,107.66 (6-in)
1 st Step (501 to 2,500 c.f.)	\$3.15 per 100 c.c.f.
2nd Step (2,501 to 25,000 c.f.)	\$4.97 per 100 c.c.f.
3rd Step (over 25,000 c.f.)	\$8.32 per 100 c.c.f.

This minimum charge represents a water use of approximately 40 gpd (gallons per day); the additional steps represent approximately 200 gpd and 2,050 gpd per billed customer respectively. MADEP Water Conservative Standards recommend a daily 65 gallons per day per person. Currently all customers, except Ocean Spray, are billed quarterly. Because water use by Ocean Spray represents approximately 10 to 14 percent of total water sold, they are billed monthly.

In order to evaluate revenue requirements, the Water Division’s annual budget was projected through the CIP period. The Projected Budget is included in the Appendix. Components of the budget include salaries and benefits, operating costs, intergovernmental charges and debt service. The existing debt schedule and the proposed schedule due to the CIP have been included in the budget projections.

Based on information received from the Town’s Information Technology (IT) Department a financial model was created to project water sales and revenues over the 20-yr. CIP period. As shown in the Appendix, a 4 percent rate increase per year has been proposed.

In order to evaluate the impact of the rate increase on Water Division customers, we have prepared annual costs for various categories of customer:

- Single person household, 65 gpd use, 5/8-in water meter
- Family of four, 65 gpd each or 260 gpd
- Typical business 3,000 gpd, 2-in water meter
- Ocean Spray, assuming 50 and 70 mil. gal. per year

Customer	Annual Water Use	Annual Cost Current Rate	Annual Cost 4% Proposed Rate Increase	Annual Cost Increase
	(gal./yr)	(\$)	(\$)	(\$)
Single Person Household	23,660	190	198	8
Family of 4	94,640	543	565	23
Business	1,092,000	9,311	9,683	372
Ocean Spray	50,000,000	561,150	579,000	17,850
	70,000,000	783,500	814,900	31,400

○ ***Review status of radio read meter upgrade program.***

The Water Division has recently completed the complete conversion of all service meters to have radio-read capability. This has significantly reduced the time it takes for meter reading and billing. Information on age of the various service meters in the system is included in the Appendix. MassDEP requires either ten-year test or replacement cycle. The Water Division will need to increase the number of meters it replaces per year. An allowance of \$90,000 (or approximately 600 meters/yr) has been included in the CIP.

○ ***Develop a program to construct/upgrade other water works components.***

A twenty year Capital Improvement Program has been developed for the Middleboro Water Division. The CIP is included within the Appendix; MassDEP standard CIP questionnaire has been completed and is also included in the Appendix.

We look forward to meeting with you to discuss our report. Please call if you have any question.

Very truly yours,
AMORY ENGINEERS, P.C.

By:

Richard S. Johnson, P.E.

RSJ:rsj

enc.

cc: Joseph Silva

Appendix Table 1. - Capital Improvement Plan															
			(Current Cost)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
			2011	0	1	2	3	4	5	6	7	8	9	10	
LEGEND	Growth		3.0%												
	Inflation		3.0%												
	Existing Bonds	Rate Increase/Year	2.5%												
Retained Earnings	Short Term Temp Financing			2.00%	2.00%	2.50%	2.50%	2.75%	2.75%	3.00%	3.00%	3.00%	3.00%		
Operating Budget	BAN Term (years 1-3)			2	2	2	2	2	2	2	2	2	2		
	Long Term Bonding Rate			4.25%	4.25%	4.50%	4.50%	4.75%	4.75%	5	5	5	5		
New Bonds	Bonding Term (years 4-23)			20	20	20	20	20	20	20	20	20	20		
	SRF Long Term Bonding Rate			2.50%	2.50%	3.00%	3.00%	3.25%	3.25%	3.50%	3.50%	3.50%	3.50%		
SRF	Bonding Term (years 3-22)			20	20	20	20	20	20	20	20	20	20		
Capital Improvements															
Watermains															
	1	1893 Fairview Street	completed												
	2	1915/1921 Wareham Street	completed												
	3	1900/1910 Lincoln and Jackson Streets	completed												
	4	1885 South Main Street	completed												
	5	1915 Pierce Street	completed												
	6	1885 Center Avenue	completed												
	7	1915 Frank Street	completed												
	8	1925 Cambridge Street	completed												
	9	1921 East Grove Street	completed												
	10	1892 Nemasket Street	completed												
	11	1954 West Grove Street	completed												
	12	1885 North Main Street	205,000		211,150										
	13	1886 Everett Street	345,000				376,991								
	14	1885 Center Avenue	200,000					225,102							
	15	1934 Summer Street	40,000					45,020							
	16	n/a Old Center Street	665,000							817,866					
	17	1947 Center Street	260,000						301,411						
	18	1886 Oak Street	190,000						220,262						
	19	n/a Walnut Street	913,000												
	20	n/a Cherry Street	1,113,000												
	21	n/a Clay Street	480,000												
	22	1947 Old Center Street	200,000												
	23	n/a Vaughan Street	250,000												
	24	n/a Wood Street	831,000												
Old Main Replacement															
		Allowance / Year	400,000		412,000	424,360						506,708	521,909	537,567	
	Subtotal		5,692,000	-	623,150	424,360	376,991	270,122	521,673	-	817,866	506,708	521,909	537,567	
New Source Development															
		Mizarus Well	1,500,000			1,591,350									
		Cross Street Well	1,500,000											2,015,875	
		Wilbur Street Well	2,000,000												
		St Onges/Tispaquin Well	2,000,000												
		Vaughan Street Well	2,000,000												
	Subtotal		9,000,000	-	-	1,591,350	-	-	-	-	-	-	-	2,015,875	
Satellite Well Installation															
		Miller St. Well	150,000				163,909								
		Spruce St. Wells	170,000		175,100										
		Tispaquin Wells	135,000							161,197					
		Rock Wells	400,000		412,000										
		E. Main St. Wells	135,000					151,944							
		Plympton / Cross St. Wells	100,000								122,987				
		E. Grove Street Well	n/a												
			1,090,000	-	587,100	-	163,909	151,944	-	161,197	122,987	-	-	-	
Water Treatment															
		East Main Street Wells WTP	4,000,000					4,502,035							
		Tispaquin Street Wells WTP	4,000,000							4,776,209					
		Existing WPS Main CT Improvements	400,000		206,000	212,180									
		East Grove Street WTP/Upgrade	1,500,000												
	Subtotal		9,900,000	-	206,000	212,180	-	4,502,035	-	4,776,209	-	-	-	-	
New Storage Tank															
		Replace Elevated 1.5 Mil. Gal. South Middleborough	3,000,000									3,800,310			
	Subtotal		6,000,000	-	-	-	-	-	-	-	-	3,800,310	-	-	
	Subtotal (Capital Projects)		31,682,000	-	1,416,250	2,227,890	540,900	4,924,101	521,673	4,937,406	940,854	4,307,018	521,909	2,553,441	
Maintenance Improvement Program															
Tank Painting/Repairs															
		0.5 Mil. Gal.	250,000		257,500										
		5.5 Mil. Gal.	400,000											521,909	
Well Rehabilitation															
		Tispaquin Wells	20,000					22,510						26,095	
		Rock Wells	20,000									25,335			
		E. Main St. Wells	20,000			21,218					24,597				
		Plympton / Cross St. Wells	20,000		20,600					23,881					
		Miller / Spruce St. Wells	20,000						23,185					26,878	
		E. Grove Street Well	n/a												
Well Replacement															
		Tispaquin Wells	100,000											130,477	
		Rock Wells	100,000				109,273								
		E. Main St. Wells	100,000												
		Plympton / Cross St. Wells	100,000												
		Miller / Spruce St. Wells	100,000												
		E. Grove Street Well	100,000												
Other Water Works Components															
		SCADA	850,000	850,000											
		Chemical Feed Alarm Upgrades	75,000												
		Barden Hill Tank Recirculation System	150,000	150,000											
		East Grove Street Well/Coke Aerator Roof	150,000	150,000											
		Service Meter Replacement/Upgrade	90,000		92,700	95,481	98,345	101,296	104,335	107,465	110,689	114,009	117,430	120,952	
			2,665,000												
	Subtotal (Maintenance)		1,000,000	520,800	116,699	207,618	123,806	127,520	131,346	135,286	139,345	795,912	147,831		
	Subtotal (Capital + Maintenance)		1,000,000	1,937,050	2,344,589	748,518	5,047,907	649,193	5,068,752	1,076,140	4,446,363	1,317,821	2,701,272		
Anticipated Funding Source															
	Existing Bonds	SCADA, tank circ, Egrove roof, CT wm	2,411,750	1,000,000	1,411,750	-	-	-	-	-	-	-	-	-	
	Retained Earnings	watermains	-	412,000	424,360	376,991	270,122	521,673	-	817,866	506,708	521,909	537,567		
	Operating Budget	well rehab/replacement & meters	-	113,300	116,699	207,618	123,806	127,520	131,346	135,286	139,345	274,002	147,831		
	New Bonds	Tank, satellite wells, new sources	-		Mizarus	1591,350	163,909	Emain WTP	151,944	Tisp WTP	161,197	New 1.5MG tank/paint Barden	521,909	Cross	2,015,875
	SRF	WTP	-		212,180	-	4,502,035	-	4,776,209	-	-	-	-		
	Total CIP		1,000,000	1,937,050	2,344,589	748,518	5,047,907	649,193	5,068,752	1,076,140	4,446,363	1,317,821	2,701,272		
	Bonded Capital Projects		-	-	-	1,803,530	163,909	4,653,979	-	4,937,406	122,987	3,800,310	521,909	2,015,875	
	Existing Debt Service		1,272,992	1,182,404	1,153,259	1,123,828	1,008,571	979,833	954,200	891,938	863,545	776,139	754,349		
	New Debt Service on Bonded Capital Projects		-	-	-	40,000	40,000	301,250	297,000	718,250	703,538	1,163,825	1,138,488		
	New PROJECTED Debt Service		1,272,992	1,182,404	1,153,259	1,163,828	1,048,571	1,281,083	1,251,200	1,610,188	1,567,083	1,939,964	1,892,837		

Appendix Table 1. - Capital Improvement Plan													
			(Current Cost)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
			2011	11	12	13	14	15	16	17	18	19	20
LEGEND	Growth		3.0%										
	Inflation		3.0%										
Existing Bonds	Rate Increase/Year		2.5%										
Retained Earnings	Short Term Temp Financing		3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
	BAN Term (years 1-3)		2	2	2	2	2	2	2	2	2	2	2
Operating Budget	Long Term Bonding Rate		5	5	5	5	5	5	5	5	5	5	5
New Bonds	Bonding Term (years 4-23)		20	20	20	20	20	20	20	20	20	20	20
SRF	SRF Long Term Bonding Rate		3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
	Bonding Term (years 3-22)		20	20	20	20	20	20	20	20	20	20	20
Capital Improvements													
Watermains													
	1	1893 Fairview Street	completed										
	2	1915/1921 Wareham Street	completed										
	3	1900/1910 Lincoln and Jackson Streets	completed										
	4	1885 South Main Street	completed										
	5	1915 Pierce Street	completed										
	6	1885 Center Avenue	completed										
	7	1915 Frank Street	completed										
	8	1925 Cambridge Street	completed										
	9	1921 East Grove Street	completed										
	10	1892 Nemasket Street	completed										
	11	1954 West Grove Street	completed										
	12	1885 North Main Street	205,000										211,150
	13	1886 Everett Street	345,000										376,991
	14	1885 Center Avenue	200,000										225,102
	15	1934 Summer Street	40,000										45,020
	16	n/a Old Center Street	665,000										817,866
	17	1947 Center Street	260,000										301,411
	18	1886 Oak Street	190,000										220,262
	19	n/a Walnut Street	913,000					1,422,424					1,422,424
	20	n/a Cherry Street	1,113,000						1,786,038				1,786,038
	21	n/a Clay Street	480,000										-
	22	1947 Old Center Street	200,000										-
	23	n/a Vaughan Street	250,000										-
	24	n/a Wood Street	831,000										-
Old Main Replacement													
		Allowance / Year	400,000	553,694	570,304	587,413			641,883	661,139	680,973	701,402	722,444
		Subtotal	5,692,000	553,694	570,304	587,413	-	1,422,424	2,427,921	661,139	680,973	701,402	722,444
New Source Development													
		Mizarus Well	1,500,000										1,591,350
		Cross Street Well	1,500,000										2,015,875
		Wilbur Street Well	2,000,000							3,305,695			3,305,695
		St Onges/Tispaquin Well	2,000,000										-
		Vaughan Street Well	2,000,000										-
		Subtotal	9,000,000	-	-	-	-	-	-	3,305,695	-	-	6,912,920
Satellite Well Installation													
		Miller St. Well	150,000										163,909
		Spruce St. Wells	170,000										175,100
		Tispaquin Wells	135,000										161,197
		Rock Wells	400,000										412,000
		E. Main St. Wells	135,000										151,944
		Plympton / Cross St. Wells	100,000										122,987
		E. Grove Street Well	n/a										-
		Subtotal	1,090,000	-	-	-	-	-	-	-	-	-	1,187,137
Water Treatment													
		East Main Street Wells WTP	4,000,000										4,502,035
		Tispaquin Street Wells WTP	4,000,000										4,776,209
		Existing WPS Main CT Improvements	400,000										418,180
		East Grove Street WTP/Upgrade	1,500,000		2,138,641								2,138,641
		Subtotal	9,900,000	-	2,138,641	-	-	-	-	-	-	-	11,835,066
New Storage Tank													
		Replace Elevated 1.5 Mil. Gal. South Middleborough	3,000,000					4,537,769					3,800,310
		Subtotal	6,000,000	-	-	-	-	4,537,769	-	-	-	-	8,338,079
Subtotal (Capital Projects)													
			31,682,000	553,694	2,708,946	587,413	4,537,769	1,422,424	2,427,921	3,966,834	680,973	701,402	722,444
Maintenance Improvement Program													
Tank Painting/Repairs													
		0.5 Mil. Gal.	250,000										257,500
		5.5 Mil. Gal.	400,000										521,909
Well Rehabilitation													
		Tispaquin Wells	20,000				30,252					35,070	113,928
		Rock Wells	20,000			29,371					34,049		88,755
		E. Main St. Wells	20,000		28,515					33,057			107,388
		Plympton / Cross St. Wells	20,000		27,685				32,094				104,260
		Miller / Spruce St. Wells	20,000					31,159				36,122	117,345
		E. Grove Street Well	n/a										-
Well Replacement													
		Tispaquin Wells	100,000										130,477
		Rock Wells	100,000										109,273
		E. Main St. Wells	100,000			146,853							146,853
		Plympton / Cross St. Wells	100,000							165,285			165,285
		Miller / Spruce St. Wells	100,000										-
		E. Grove Street Well	100,000										-
Other Water Works Components													
		SCADA	850,000										-
		Chemical Feed Alarm Upgrades	75,000										-
		Barden Hill Tank Recirculation System	150,000										-
		East Grove Street Well/Coke Aerator Roof	150,000										150,000
		Service Meter Replacement/Upgrade	90,000	124,581	128,318	132,168	136,133	140,217	144,424	148,756	153,219	157,816	162,550
		Subtotal (Maintenance)	2,665,000	152,266	156,834	308,392	166,385	171,376	176,518	347,098	187,268	192,886	198,672
Subtotal (Capital + Maintenance)													
			705,959	2,865,779	895,806	4,704,154	1,593,801	2,604,439	4,313,932	868,241	894,288	921,117	45,705,120
Anticipated Funding Source													
	Existing Bonds	SCADA, tank circ, Egrove roof, CT wm	2,411,750	-	-	-	-	-	-	-	-	-	1,411,750
	Retained Earnings	watermains	553,694	570,304	587,413	-	1,422,424		661,139	680,973	701,402	722,444	10,288,991
	Operating Budget	well rehab/replacement & meters	152,266	156,834	308,392	166,385	171,376	176,518	347,098	187,268	192,886	198,672	3,574,447
	New Bonds	Tank, satellite wells, new sources	-	-	-	4,537,769	-	2,427,921	3,305,695	-	-	-	18,800,867
	SRF	WTP	-	2,138,641	-	-	-	-	-	-	-	-	11,629,066
Total CIP													
			705,959	2,865,779	895,806	4,704,154	1,593,801	2,604,439	4,313,932	868,241	894,288	921,117	45,705,120
Bonded Capital Projects													
			-	2,138,641	-	4,537,769	-	2,427,921	3,305,695	-	-	-	30,429,932
Existing Debt Service													
			732,137	652,316	630,266	500,472	482,478	341,299	297,619	286,344	-	-	13,610,997
		New Debt Service on Bonded Capital Projects	1,483,150	1,447,688	1,594,225	1,554,013	1,778,550	1,733,875	2,114,200	2,059,400	2,403,350	2,336,863	22,907,663
		New PROJECTED Debt Service	2,215,287	2,100,004	2,224,491	2,054,485	2,261,028	2,075,174	2,411,819	2,345,744	2,403,350	2,336,863	36,518,660

Appendix Table 2 - Projected Water Division Budget - with CIP

Water Division Budget

	FY10 EXPENDED	FY11 APPROPRIATED	FY12 REQUEST	FY13 AE Projection	FY14 AE Projection	FY15 AE Projection	FY16 AE Projection	FY17 AE Projection	FY18 AE Projection	FY19 AE Projection	FY20 AE Projection	FY21 AE Projection	Increase Over 10 yr
TOTAL PERSONNEL	661,743.94	794,282.77	803,276.00	823,358	843,942	865,040	886,666	908,833	931,554	954,843	978,714	1,003,182	224,985
TOTAL PURCHASE OF SERVICES	366,811.42	443,700.00	443,700.00	448,137	452,618	457,145	461,716	466,333	470,996	475,706	480,464	485,268	46,421
TOTAL CONSUMABLE SUPPLIES	384,037.45	487,000.00	477,000.00	491,310	506,049	521,231	536,868	552,974	569,563	586,650	604,249	622,377	164,048
TOTAL OTHER CHARGES & EXPENSES	12,516.00	17,658.00	17,658.00	17,746	17,835	17,924	18,014	18,104	18,194	18,285	18,377	18,469	903
TOTAL CAPITAL OUTLAY	82,204.21	73,000.00	73,000.00	73,365	73,732	74,100	74,471	74,843	75,218	75,594	75,972	76,351	3,733
SUB-TOTAL	1,507,313	1,815,641	1,814,634	1,853,916	1,894,176	1,935,440	1,977,735	2,021,087	2,065,525	2,111,078	2,157,775	2,205,647	440,090
TOTAL DEPT SERVICE EXPENSES (EXIST)	1,309,700.00	1,279,992.00	1,182,404	1,153,259	1,123,828	1,008,571	979,833	954,200	891,938	863,545	776,139	754,349	(450,267)
NEW DEBT SERVICE		-	-	-	40,000.00	40,000.00	301,250.00	297,000.00	718,250.00	703,537.50	#####	#####	
TOTAL INTERGOVERNMENTAL	215,300.00	215,300.00	215,300.00	220,683	226,200	231,855	237,651	243,592	249,682	255,924	262,322	268,880	60,302
TOTAL EMPLOYEE FRINGE BENEFITS	388,736.07	426,637.80	444,311.00	466,527	489,853	514,346	540,063	567,066	595,419	625,190	656,450	689,272	279,425
TOTAL UNCLASSIFIED	65,211.00	76,067.00	59,480.00	59,777	60,076	60,377	60,679	60,982	61,287	61,593	61,901	62,211	3,042
SUB-TOTAL	1,978,947	1,997,997	1,901,495	1,900,245	1,939,957	1,855,148	2,119,475	2,122,840	2,516,576	2,509,790	2,920,637	2,913,200	1,375,652
TOTAL WATER ENTERPRISE SYSTEMS	3,486,260	3,813,638	3,716,129	3,754,162	3,834,133	3,790,588	4,097,210	4,143,927	4,582,101	4,620,868	5,078,412	5,118,846	1,815,742
Percent of Previous Year's Budget			97.4%	101.0%	102.1%	98.9%	108.1%	101.1%	110.6%	100.8%	109.9%	100.8%	

Appendix Table 2 - Projected Water Division Bud

Water Division Budget

	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Increase	Increase/yr	Description
	AE Projection	Over 10 yr											
TOTAL PERSONNEL	1,028,261	1,053,968	1,080,317	1,107,325	1,135,008	1,163,383	1,192,468	1,222,279	1,252,836	1,284,157	255,896	2.5%	Salaries
TOTAL PURCHASE OF SERVICES	490,121	495,022	499,972	504,972	510,022	515,122	520,273	525,476	530,731	536,038	45,917	1.0%	Services
TOTAL CONSUMABLE SUPPLIES	641,048	660,280	680,088	700,491	721,505	743,150	765,445	788,408	812,061	836,422	195,374	3.0%	supplies includes 25K meters
TOTAL OTHER CHARGES & EXPENSES	18,561	18,654	18,747	18,841	18,935	19,030	19,125	19,220	19,317	19,413	852	0.5%	
TOTAL CAPITAL OUTLAY	76,733	77,117	77,502	77,890	78,279	78,671	79,064	79,460	79,857	80,256	3,523	0.5%	includes 40K well cle
SUB-TOTAL	2,254,724	2,305,040	2,356,627	2,409,518	2,463,749	2,519,356	2,576,375	2,634,844	2,694,801	2,756,287	501,563		
TOTAL DEPT SERVICE EXPENSES (EXIST)	732,137	732,138	732,139	732,140	732,141	732,142	732,143	732,144	732,145	732,146	9		from Town Accountant
NEW DEBT SERVICE	1,483,150.00	1,447,687.50	1,594,225.00	1,554,012.50	1,778,550.00	1,733,875.00	2,114,200.00	2,059,400.00	2,403,350.00	2,336,862.50	853,713		part of CIP
TOTAL INTERGOVERNMENTAL	275,602	282,492	289,555	296,793	304,213	311,819	319,614	327,604	335,795	344,189	68,587	2.5%	
TOTAL EMPLOYEE FRINGE BENEFITS	723,736	759,923	797,919	837,815	879,705	923,691	969,875	1,018,369	1,069,287	1,122,752	399,016	5.0%	Benefits
TOTAL UNCLASSIFIED	62,522	62,834	63,149	63,464	63,782	64,101	64,421	64,743	65,067	65,392	2,870	0.5%	
SUB-TOTAL	3,277,147	3,285,075	3,476,986	3,484,225	3,758,391	3,765,627	4,200,253	4,202,261	4,605,644	4,601,342	1,324,195		
TOTAL WATER ENTERPRISE SYSTEMS	5,531,871	5,590,115	5,833,613	5,893,743	6,222,141	6,284,983	6,776,628	6,837,104	7,300,445	7,357,629	1,825,758		
Percent of Previous Year's Budget	108.1%	101.1%	104.4%	101.0%	105.6%	101.0%	107.8%	100.9%	106.8%	100.8%			

Appendix Table 3 - CIP Projected Revenues - Average Water Production

		Average Water Production (i.e., typical year)					
		Current					
		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
		Current Rates (5% voted July 2010 retro to April)					
CY 2010							
Projected Water Demand (DCR) (gal/yr)	605,353,000	605,353,000	611,411,800	614,441,200	617,470,600	620,500,000	627,070,000
Annual Water Production (95% of DCR Proj)(gal/yr)		575,085,350	580,841,210	583,719,140	586,597,070	589,475,000	595,716,500
10 % Unaccounted-For-Water	60,535,300	57,508,535	58,084,121	58,371,914	58,659,707	58,947,500	59,571,650
Annual Water Sold (gal/yr)	544,817,700	517,576,815	522,757,089	525,347,226	527,937,363	530,527,500	536,144,850
Annual Water Sold (ccf/yr)	728,366	691,948	698,873	702,336	705,799	709,261	716,771
Base Water Charge (Meter plus 5ccf use - by meter size)		Rate Increase					
			1.04	1.04	1.04	1.04	1.04
5/8	4,759	38.03	39.55	41.13	42.78	44.49	46.27
5/8	894	32.91	34.22	35.59	37.02	38.50	40.04
3/4	29	48.94	50.90	52.93	55.05	57.25	59.54
3/4	3	43.82	45.57	47.39	49.29	51.26	53.31
1	86	70.77	73.60	76.54	79.61	82.79	86.10
1	2	65.65	68.27	71.00	73.84	76.80	79.87
1 1/4	1	99.15	103.12	107.24	111.53	115.99	120.63
1 1/2	46	125.35	130.36	135.58	141.00	146.64	152.51
2	77	190.84	198.47	206.41	214.67	223.25	232.18
3	15	365.46	380.08	395.28	411.10	427.54	444.64
4	5	561.93	584.41	607.78	632.09	657.38	683.67
6	2	1,107.66	1,151.96	1,198.04	1,245.96	1,295.80	1,347.63
2		190.84	198.47	206.41	214.67	223.25	232.18
1		70.77	73.60	76.54	79.61	82.79	86.10
5/8		38.03	39.55	41.13	42.78	44.49	46.27
Base Meter Sales	5,919	\$ 249,243.21	\$ 259,212.94	\$ 269,581.46	\$ 280,364.72	\$ 291,579.31	\$ 303,242.48
	5,919 in 2010	per qtr	per qtr	per qtr	per qtr	per qtr	per qtr
Quarterly Water Sales							
Quarter 3 (July-September) [31%]	225,793	214,504	216,651	217,724	218,798	219,871	222,199
Quarter 4 (October-December) [23%]	167,524	159,148	160,741	161,537	162,334	163,130	164,857
Quarter 1 (January-March) [20%]	145,673	138,390	139,775	140,467	141,160	141,852	143,354
Quarter 2 (April-June) [26%]	189,375	179,906	181,707	182,607	183,508	184,408	186,361
Total Annual Water Sales	728,366	691,948	698,873	702,336	705,799	709,261	716,771
Water Rate		Rate Increase					
			1.04	1.04	1.04	1.04	1.04
1st Block 6-25 ccf		3.15	3.28	3.41	3.54	3.69	3.83
2nd Block 26-250 ccf		4.97	5.17	5.37	5.59	5.81	6.04
3rd Block >250 ccf		8.32	8.65	8.99	9.35	9.73	10.12
Cost Increment / Block							
			0.13	0.13	0.14	0.14	0.15
			0.20	0.21	0.21	0.22	0.23
			0.33	0.35	0.36	0.37	0.39
Projected Revenues within Block							
Base Charges (Meter)		996,972.86	1,036,851.77	1,078,325.84	1,121,458.88	1,166,317.23	1,212,969.92
1st Block (6-25 ccf)		382,423.85	404,075.02	423,542.21	443,920.26	465,250.88	491,921.63
2nd Block (26-250 ccf) Amount		1,015,240.01	1,070,814.90	1,121,429.45	1,174,379.85	1,229,772.00	1,297,947.30
3rd Block (>250 ccf) Amount		1,429,415.24	1,504,077.33	1,573,332.88	1,645,722.34	1,721,385.63	1,812,422.50
Total		3,824,051.96	4,015,819.03	4,196,630.38	4,385,481.33	4,582,725.75	4,815,261.35
90% Collection Rate		3,441,646.77	3,614,237.12	3,776,967.34	3,946,933.20	4,124,453.17	4,333,735.22
Other Water Division Revenues		540,000.00	540,000.00	540,000.00	540,000.00	540,000.00	540,000.00
Total Anticipated FY 2011 Revenue - 4 % Rate Increase		3,981,646.77	4,154,237.12	4,316,967.34	4,486,933.20	4,664,453.17	4,873,735.22
FY 20xx Budget		3,813,638.00	3,716,129.00	3,754,161.64	3,834,133.09	3,790,588.15	4,097,210.17
Potential to Retained Earnings		168,008.77	438,108.12	562,805.70	652,800.10	873,865.02	776,525.04
Retained Earnings (Watermain Replacement)		-	412,000.00	424,360.00	376,990.82	270,122.11	521,673.33
Operating Budget (Well cleaning & Meter Replacement)		-	113,300.00	116,699.00	207,618.13	123,805.97	127,520.15
Subtotal		-	525,300.00	541,059.00	584,608.95	393,928.08	649,193.48
Delta (compared to Water Rate Revenue)		168,008.77	(87,191.88)	21,746.70	68,191.16	479,936.94	127,331.56
Cumulative Delta (Remains to Retained Earnings)		168,008.77	80,816.89	102,563.59	170,754.75	650,691.69	778,023.25
Impact on Individual User (Annual Charge)							
Single Person Household - 65 gpd	180.88	189.92	197.52	205.42	213.64	222.18	231.07
Family 4 - 65/ea = 260 gpd	517.32	543.19	564.91	587.51	611.01	635.45	660.87
Business = 3,000 gpd	8,867.20	9,310.56	9,682.98	10,070.30	10,473.11	10,892.04	11,327.72
Ocean Spray - 50 mil gal/yr	607,577.56	561,141.80	578,979.62	602,138.81	626,224.36	651,273.33	677,324.27
Ocean Spray - 70 mil gal/yr		783,511.64	814,852.10	847,446.19	881,344.04	916,597.80	953,261.71

Appendix Table 3 - CIP Projected Revenues - Average Water Production

4% Rate Increase			FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
CY 2010							
Projected Water Demand (DCR) (gal/yr)	605,353,000		633,640,000	640,210,000	646,780,000	653,350,000	667,950,000
Annual Water Production (95% of DCR Proj)(gal/yr)			601,958,000	608,199,500	614,441,000	620,682,500	634,552,500
10 % Unaccounted-For-Water	60,535,300		60,195,800	60,819,950	61,444,100	62,068,250	63,455,250
Annual Water Sold (gal/yr)	544,817,700		541,762,200	547,379,550	552,996,900	558,614,250	571,097,250
Annual Water Sold (ccf/yr)	728,366		724,281	731,791	739,301	746,810	763,499
Base Water Charge (Meter plus 5ccf use - by meter size)			1.04	1.04	1.04	1.04	1.04
	5/8	4,759	48.12	50.05	52.05	54.13	56.30
	5/8	894	41.64	43.30	45.04	46.84	48.71
	3/4	29	61.93	64.40	66.98	69.66	72.44
	3/4	3	55.44	57.66	59.97	62.36	64.86
	1	86	89.55	93.13	96.85	100.73	104.76
	1	2	83.06	86.39	89.84	93.43	97.17
	1 1/4	1	125.46	130.48	135.70	141.12	146.77
	1 1/2	46	158.61	164.95	171.55	178.41	185.55
	2	77	241.47	251.13	261.17	271.62	282.49
	3	15	462.43	480.92	500.16	520.17	540.97
	4	5	711.02	739.46	769.04	799.80	831.79
	6	2	1,401.54	1,457.60	1,515.90	1,576.54	1,639.60
	2		241.47	251.13	261.17	271.62	282.49
	1		89.55	93.13	96.85	100.73	104.76
	5/8		48.12	50.05	52.05	54.13	56.30
Base Meter Sales	5,919		\$ 315,372.18	\$ 327,987.07	\$ 341,106.55	\$ 354,750.81	\$ 368,940.84
	5,919 in 2010		per qtr				
Quarterly Water Sales							
Quarter 3 (July-September) [31%]	225,793		224,527	226,855	229,183	231,511	236,685
Quarter 4 (October-December) [23%]	167,524		166,585	168,312	170,039	171,766	175,605
Quarter 1 (January-March) [20%]	145,673		144,856	146,358	147,860	149,362	152,700
Quarter 2 (April-June) [26%]	189,375		188,313	190,266	192,218	194,171	198,510
Total Annual Water Sales	728,366		724,281	731,791	739,301	746,810	763,499
Water Rate			1.04	1.04	1.04	1.04	1.04
1st Block 6-25 ccf			3.99	4.15	4.31	4.48	4.66
2nd Block 26-250 ccf			6.28	6.54	6.80	7.07	7.35
3rd Block >250 ccf			10.52	10.94	11.38	11.84	12.31
Cost Increment / Block			0.15	0.16	0.17	0.17	0.18
			0.24	0.25	0.26	0.27	0.28
			0.40	0.42	0.44	0.46	0.47
Projected Revenues within Block							
Base Charges (Meter)			1,261,488.72	1,311,948.27	1,364,426.20	1,419,003.25	1,475,763.38
1st Block (6-25 ccf)			519,981.64	549,499.38	580,546.57	613,198.33	659,519.81
2nd Block (26-250 ccf) Amount			1,369,608.98	1,444,926.88	1,524,078.84	1,607,251.07	1,722,868.76
3rd Block (>250 ccf) Amount			1,907,988.10	2,008,299.08	2,113,582.14	2,224,074.58	2,373,008.94
Total			5,059,067.44	5,314,673.60	5,582,633.75	5,863,527.22	6,231,160.88
90% Collection Rate			4,553,160.70	4,783,206.24	5,024,370.37	5,277,174.50	5,608,044.79
Other Water Division Revenues			540,000.00	540,002.00	540,003.00	540,004.00	540,005.00
Total Anticipated FY 2011 Revenue - 4 % Rate Increase			5,093,160.70	5,323,208.24	5,564,373.37	5,817,178.50	6,148,049.79
FY 20xx Budget			4,143,927.25	4,582,101.37	4,620,868.08	5,078,412.18	5,118,846.43
Potential to Retained Earnings			949,233.44	741,106.87	943,505.29	738,766.32	1,029,203.36
Retained Earnings (Watermain Replacement)			-	817,866.12	506,708.03	521,909.27	537,566.55
Operating Budget (Well cleaning & Meter Replacement)			131,345.75	135,286.13	139,344.71	274,002.37	147,830.80
Subtotal			131,345.75	953,152.25	646,052.74	795,911.64	685,397.35
Delta (compared to Water Rate Revenue)			817,887.69	(212,045.38)	297,452.55	(57,145.32)	343,806.01
Cumulative Delta (Remains to Retained Earnings)			1,595,910.94	1,383,865.56	1,681,318.12	1,624,172.80	1,967,978.81
Impact on Individual User (Annual Charge)							
Single Person Household - 65 gpd	180.88		240.31	249.93	259.92	270.32	281.13
Family 4 - 65/ea = 260 gpd	517.32		687.30	714.80	743.39	773.12	804.05
Business = 3,000 gpd	8,867.20		11,780.83	12,252.06	12,742.14	13,251.83	13,781.90
Ocean Spray - 50 mil gal/yr	607,577.56		704,417.24	732,593.93	761,897.69	792,373.59	824,068.54
Ocean Spray - 70 mil gal/yr			991,392.18	1,031,047.86	1,072,289.78	1,115,181.37	1,159,788.62

Appendix Table 3 - CIP Projected Revenues - Average Water Production

4% Rate Increase			FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
CY 2010							
Projected Water Demand (DCR) (gal/yr)	605,353,000		682,550,000	697,150,000	711,750,000	726,350,000	736,570,000
Annual Water Production (95% of DCR Proj)(gal/yr)			648,422,500	662,292,500	676,162,500	690,032,500	699,741,500
10 % Unaccounted-For-Water	60,535,300		64,842,250	66,229,250	67,616,250	69,003,250	69,974,150
Annual Water Sold (gal/yr)	544,817,700		583,580,250	596,063,250	608,546,250	621,029,250	629,767,350
Annual Water Sold (ccf/yr)	728,366		780,188	796,876	813,565	830,253	841,935
Base Water Charge (Meter plus 5ccf use - by meter size)			1.04	1.04	1.04	1.04	1.04
	5/8	4,759	58.55	60.89	63.32	65.86	68.49
	5/8	894	50.66	52.69	54.79	56.98	59.26
	3/4	29	75.34	78.36	81.49	84.75	88.14
	3/4	3	67.45	70.15	72.96	75.88	78.91
	1	86	108.95	113.31	117.84	122.55	127.45
	1	2	101.06	105.10	109.31	113.68	118.22
	1 1/4	1	152.64	158.74	165.09	171.70	178.57
	1 1/2	46	192.97	200.69	208.72	217.06	225.75
	2	77	293.79	305.54	317.76	330.47	343.69
	3	15	562.61	585.12	608.52	632.86	658.18
	4	5	865.06	899.67	935.65	973.08	1,012.00
	6	2	1,705.18	1,773.39	1,844.33	1,918.10	1,994.82
	2		293.79	305.54	317.76	330.47	343.69
	1		108.95	113.31	117.84	122.55	127.45
	5/8		58.55	60.89	63.32	65.86	68.49
Base Meter Sales	5,919		\$ 383,698.48	\$ 399,046.42	\$ 415,008.27	\$ 431,608.60	\$ 448,872.95
	5,919 in 2010		per qtr				
Quarterly Water Sales							
Quarter 3 (July-September) [31%]	225,793		241,858	247,032	252,205	257,378	261,000
Quarter 4 (October-December) [23%]	167,524		179,443	183,281	187,120	190,958	193,645
Quarter 1 (January-March) [20%]	145,673		156,038	159,375	162,713	166,051	168,387
Quarter 2 (April-June) [26%]	189,375		202,849	207,188	211,527	215,866	218,903
Total Annual Water Sales	728,366		780,188	796,876	813,565	830,253	841,935
Water Rate			1.04	1.04	1.04	1.04	1.04
1st Block 6-25 ccf			4.85	5.04	5.24	5.45	5.67
2nd Block 26-250 ccf			7.65	7.95	8.27	8.60	8.94
3rd Block >250 ccf			12.80	13.31	13.85	14.40	14.98
Cost Increment / Block			0.19	0.19	0.20	0.21	0.22
			0.29	0.31	0.32	0.33	0.34
			0.49	0.51	0.53	0.55	0.58
Projected Revenues within Block							
Base Charges (Meter)			1,534,793.91	1,596,185.67	1,660,033.09	1,726,434.42	1,795,491.79
1st Block (6-25 ccf)			708,565.89	760,480.43	815,414.42	873,526.36	927,028.04
2nd Block (26-250 ccf) Amount			1,845,164.26	1,974,486.82	2,111,202.91	2,255,697.12	2,389,638.55
3rd Block (>250 ccf) Amount			2,530,299.52	2,696,376.53	2,871,691.23	3,056,716.90	3,230,060.62
Total			6,618,823.58	7,027,529.44	7,458,341.65	7,912,374.80	8,342,219.01
90% Collection Rate			5,956,941.22	6,324,776.50	6,712,507.49	7,121,137.32	7,507,997.11
Other Water Division Revenues			540,006.00	540,007.00	540,008.00	540,009.00	540,010.00
Total Anticipated FY 2011 Revenue - 4 % Rate Increase			6,496,947.22	6,864,783.50	7,252,515.49	7,661,146.32	8,048,007.11
FY 20xx Budget			5,531,871.22	5,590,114.83	5,833,612.59	5,893,743.17	6,222,140.77
Potential to Retained Earnings			965,076.00	1,274,668.67	1,418,902.90	1,767,403.15	1,825,866.34
Retained Earnings (Watermain Replacement)			553,693.55	570,304.35	587,413.49	-	1,422,424.25
Operating Budget (Well cleaning & Meter Replacement)			152,265.73	156,833.70	308,392.08	166,384.87	171,376.42
Subtotal			705,959.27	727,138.05	895,805.57	166,384.87	1,593,800.67
Delta (compared to Water Rate Revenue)			259,116.73	547,530.62	523,097.33	1,601,018.28	232,065.67
Cumulative Delta (Remains to Retained Earnings)			2,227,095.53	2,774,626.15	3,297,723.48	4,898,741.76	5,130,807.43
Impact on Individual User (Annual Charge)							
Single Person Household - 65 gpd	180.88		292.38	304.07	316.24	328.89	342.04
Family 4 - 65/ea = 260 gpd	517.32		836.21	869.66	904.44	940.62	978.25
Business = 3,000 gpd	8,867.20		14,333.18	14,906.51	15,502.77	16,122.88	16,767.79
Ocean Spray - 50 mil gal/yr	607,577.56		857,031.28	891,312.53	926,965.03	964,043.63	1,002,605.38
Ocean Spray - 70 mil gal/yr			1,206,180.17	1,254,427.38	1,304,604.47	1,356,788.65	1,411,060.20

Appendix Table 3 - CIP Projected Revenues - Average Water Production

4% Rate Increase			FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
CY 2010							
Projected Water Demand (DCR) (gal/yr)	605,353,000		746,790,000	757,010,000	767,230,000	777,450,000	787,670,000
Annual Water Production (95% of DCR Proj)(gal/yr)			709,450,500	719,159,500	728,868,500	738,577,500	748,286,500
10 % Unaccounted-For-Water	60,535,300		70,945,050	71,915,950	72,886,850	73,857,750	74,828,650
Annual Water Sold (gal/yr)	544,817,700		638,505,450	647,243,550	655,981,650	664,719,750	673,457,850
Annual Water Sold (ccf/yr)	728,366		853,617	865,299	876,981	888,663	900,345
Base Water Charge (Meter plus 5ccf use - by meter size)			1.04	1.04	1.04	1.04	1.04
	5/8	4,759	71.23	74.08	77.04	80.13	83.33
	5/8	894	61.63	64.10	66.66	69.33	72.10
	3/4	29	91.66	95.33	99.14	103.11	107.23
	3/4	3	82.07	85.35	88.76	92.31	96.01
	1	86	132.55	137.85	143.37	149.10	155.07
	1	2	122.95	127.87	132.99	138.31	143.84
	1 1/4	1	185.71	193.14	200.86	208.90	217.25
	1 1/2	46	234.78	244.17	253.93	264.09	274.66
	2	77	357.44	371.73	386.60	402.07	418.15
	3	15	684.51	711.89	740.36	769.98	800.77
	4	5	1,052.48	1,094.58	1,138.36	1,183.90	1,231.25
	6	2	2,074.62	2,157.60	2,243.91	2,333.66	2,427.01
	2		357.44	371.73	386.60	402.07	418.15
	1		132.55	137.85	143.37	149.10	155.07
	5/8		71.23	74.08	77.04	80.13	83.33
Base Meter Sales	5,919		\$ 466,827.87	\$ 485,500.98	\$ 504,921.02	\$ 525,117.86	\$ 546,122.58
	5,919 in 2010		per qtr	per qtr	per qtr	per qtr	per qtr
Quarterly Water Sales							
Quarter 3 (July-September) [31%]	225,793		264,621	268,243	271,864	275,485	279,107
Quarter 4 (October-December) [23%]	167,524		196,332	199,019	201,706	204,392	207,079
Quarter 1 (January-March) [20%]	145,673		170,723	173,060	175,396	177,733	180,069
Quarter 2 (April-June) [26%]	189,375		221,940	224,978	228,015	231,052	234,090
Total Annual Water Sales	728,366		853,617	865,299	876,981	888,663	900,345
Water Rate			1.04	1.04	1.04	1.04	1.04
1st Block 6-25 ccf			5.90	6.14	6.38	6.64	6.90
2nd Block 26-250 ccf			9.30	9.67	10.06	10.46	10.88
3rd Block >250 ccf			15.58	16.20	16.85	17.52	18.22
Cost Increment / Block			0.23	0.24	0.25	0.26	0.27
			0.36	0.37	0.39	0.40	0.42
			0.60	0.62	0.65	0.67	0.70
Projected Revenues within Block							
Base Charges (Meter)			1,867,311.47	1,942,003.92	2,019,684.08	2,100,471.44	2,184,490.30
1st Block (6-25 ccf)			983,412.22	1,042,823.88	1,105,415.02	1,171,344.93	1,240,780.56
2nd Block (26-250 ccf) Amount			2,530,686.19	2,679,194.21	2,835,533.78	3,000,093.81	3,173,281.78
3rd Block (>250 ccf) Amount			3,412,381.08	3,604,119.09	3,805,736.32	4,017,716.35	4,240,565.60
Total			8,793,790.95	9,268,141.11	9,766,369.21	10,289,626.53	10,839,118.24
90% Collection Rate			7,914,411.86	8,341,327.00	8,789,732.29	9,260,663.87	9,755,206.42
Other Water Division Revenues			540,011.00	540,012.00	540,013.00	540,014.00	540,015.00
Total Anticipated FY 2011 Revenue - 4 % Rate Increase			8,454,422.86	8,881,339.00	9,329,745.29	9,800,677.87	10,295,221.42
FY 20xx Budget			6,284,982.93	6,776,628.24	6,837,104.18	7,300,444.84	7,357,628.81
Potential to Retained Earnings			2,169,439.93	2,104,710.75	2,492,641.11	2,500,233.03	2,937,592.61
Retained Earnings (Watermain Replacement)			-	661,139.05	680,973.22	701,402.42	722,444.49
Operating Budget (Well cleaning & Meter Replacement)			176,517.71	347,098.00	187,267.64	192,885.67	198,672.24
Subtotal			176,517.71	1,008,237.06	868,240.86	894,288.09	921,116.73
Delta (compared to Water Rate Revenue)			1,992,922.22	1,096,473.70	1,624,400.25	1,605,944.94	2,016,475.88
Cumulative Delta (Remains to Retained Earnings)			7,123,729.66	8,220,203.36	9,844,603.60	11,450,548.55	13,467,024.42
Impact on Individual User (Annual Charge)							
Single Person Household - 65 gpd	180.88		355.72	369.95	384.75	400.14	416.15
Family 4 - 65/ea = 260 gpd	517.32		1,017.38	1,058.07	1,100.40	1,144.41	1,190.19
Business = 3,000 gpd	8,867.20		17,438.50	18,136.04	18,861.49	19,615.95	20,400.58
Ocean Spray - 50 mil gal/yr	607,577.56		1,042,709.59	1,084,417.98	1,127,794.69	1,172,906.48	1,219,822.74
Ocean Spray - 70 mil gal/yr			1,467,502.60	1,526,202.71	1,587,250.82	1,650,740.85	1,716,770.48