

<b>DPW WATER FILTRATION</b>	FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC	FY2017 FIN COM REC
<i>Salaries</i>										
5111 Regular	660,879	654,988	703,613	674,697	729,056	717,678	709,800	769,570	769,570	
5130 Overtime	53,710	53,968	62,057	59,468	52,000	60,104	54,400	58,000	58,000	
5135 Uniform Allowance	-	-	1,662	1,662	2,160	2,160	2,160	2,160	2,160	
5150 Car Allowance	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	
5160 Sick Leave Buy Back	5,450	1,239	1,263	1,263	5,000	2,575	2,600	2,700	2,700	
5163 Holiday Pay	18,091	16,967	17,583	17,583	18,822	18,221	18,822	19,300	19,300	
5180 All Other Salaries	500	167	838	120	500	156	500	1,000	1,000	
<b>Total Salaries</b>	<b>742,230</b>	<b>730,929</b>	<b>790,616</b>	<b>758,393</b>	<b>811,138</b>	<b>804,494</b>	<b>791,882</b>	<b>856,330</b>	<b>856,330</b>	
<i>Operating</i>										
5210 Energy Utilities	383,796	356,535	378,797	378,797	397,795	339,941	365,000	380,000	380,000	
5231 Water Purchase	25,980	25,980	33,980	33,980	24,760	24,760	8,000	8,000	8,000	
5240 Repairs and Maintenance	126,563	125,034	132,682	131,417	136,108	124,821	124,947	122,836	122,836	
5270 Leases and Contract	54,540	52,330	55,826	51,037	62,889	59,424	67,356	76,464	76,464	
5310 Professional Services	-	-	-	-	-	-	-	-	-	
5340 Communications	14,785	14,251	14,000	13,739	16,066	14,809	14,000	14,000	14,000	
5420 Office Supplies	2,000	1,862	2,000	1,635	2,713	2,163	2,500	2,500	2,500	
5423 All Other Supplies and Exp.	54,275	53,576	63,650	55,385	62,686	61,247	53,105	65,105	65,105	
5429 Computer Equipment	-	-	-	-	-	-	-	-	-	
5441 Chemicals	449,512	432,420	456,039	450,971	526,722	492,204	469,550	468,675	468,675	
5442 Residual Disposal	54,874	45,279	56,392	52,795	63,410	60,107	62,625	66,000	66,000	
5443 Water Assessment	7,473	7,473	8,000	6,911	8,000	7,330	8,000	8,000	8,000	
5580 Uniform Allowance	1,800	1,552	1,800	588	-	-	-	-	-	
5703 Dues and Memberships	468	468	700	481	700	319	700	700	700	
5790 Staff Development/Training	3,300	3,089	2,500	2,500	3,064	2,670	3,000	2,500	2,500	
<b>Total Operating</b>	<b>1,179,365</b>	<b>1,119,847</b>	<b>1,206,365</b>	<b>1,180,236</b>	<b>1,304,913</b>	<b>1,189,795</b>	<b>1,178,783</b>	<b>1,214,780</b>	<b>1,214,780</b>	
<i>Capital Outlay</i>										
5833 Capital Outlay	-	-	-	-	-	-	-	-	-	
<b>Total Capital Outlay</b>	<b>-</b>	<b>-</b>								
<b>Total Budget</b>	<b>1,921,595</b>	<b>1,850,777</b>	<b>1,996,981</b>	<b>1,938,628</b>	<b>2,116,051</b>	<b>1,994,289</b>	<b>1,970,665</b>	<b>2,071,110</b>	<b>2,071,110</b>	<b>-</b>

	FY2013 BUDGETED	FY2014 BUDGETED	FY2015 BUDGETED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC	FY2017 FIN COM REC
Position	FTE	FTE	FTE	FTE	FTE	FTE	FTE
Assistant Superintendent					0.3	0.3	
Chief Water Operator	1	1	1	1	1	1	
Chemist	1	1	1	1	1	1	
Head Filter Operator (HFO)	6	6	6	6	6	6	
Water Machinery Repairman	1	1	1	1	1	1	
Proejct Manager			0.6				
Cross Connection Coordinator	1	1	1	1	1	1	
<b>Total Staffing</b>	<b>10</b>	<b>10</b>	<b>10.6</b>	<b>10</b>	<b>10.3</b>	<b>10</b>	<b>0</b>

FISCAL YEAR 2017

DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION TOWN MANAGER RECOMMENDED

**Regular Salaries**

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Vacant	Assistant Superintendent Utility		10	1	24,027				24,027
Lewis Zediana	Chief Operator	5/9/1988	10	9	87,812	15%	13,171.86	\$3,073	104,058
Marlene Ladderbush	Chemist	5/17/2004	4	7	70,817		1,500		72,317
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	67,718		1,500		69,218
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	67,718		2,500		70,218
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	63,029	15%	9,454.40		72,484
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	67,718		2,000		69,718
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	67,718		1,500		69,218
Robert Minor	Head Filter Oper.	4/26/1999	3B	7	67,718		2,000		69,718
John Salerno	Head Filter Oper.	7/3/1989	3B	7	67,718		3,000		70,718
Edward Vieweg	Head Filter Oper.	5/9/1988	3B	7	67,718	15%	10,157.71		77,876
<b>Total Regular Salaries</b>					695,685		46,784	3,073	769,570

**Overtime**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	58,000	58,000
<b>Total Overtime</b>		58,000	58,000

**Uniform Allowance**

Name	Position	Amount	Total Benefit
	(8) HFOs and Chemist	240	2,160
<b>Total Uniform Allowance</b>		240	2,160

**Car Allowance**

Name	Position	Per/Month	# Months	Total Benefit
Lewis Zediana	Chief Operator	300	12	3,600
<b>Total Car Allowance</b>		300		3,600

**Sick Leave Buy Back**

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
			10			\$ 270	2,700
<b>Total Sick Leave Buy-Back</b>			10				2,700

**Holiday Pay**

Name	Position	Amount	Total Benefit
	(4) HFOs	19,300	19,300
<b>Total Holiday Pay</b>		19,300	19,300

**All Other Salaries**

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	1,000	1,000
<b>Total All Other Salaries</b>		1,000	1,000

<b>Department Total</b>								856,330
<b>Department Total</b>								-

**FISCAL YEAR 2017  
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION BUDGET REQUEST**

**Regular Salaries**

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Vacant	Assistant Superintendent Utility		10	1	24,027				24,027
Lewis Zediana	Chief Operator	5/9/1988	10	9	87,812	15%	13,171.86	\$3,073	104,058
Marlene Ladderbush	Chemist	5/17/2004	4	7	70,817		1,500		72,317
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	67,718		1,500		69,218
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	67,718		2,500		70,218
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	63,029	15%	9,454.40		72,484
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	67,718		2,000		69,718
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	67,718		1,500		69,218
Robert Minor	Head Filter Oper.	4/26/1999	3B	7	67,718		2,000		69,718
John Salerno	Head Filter Oper.	7/3/1989	3B	7	67,718		3,000		70,718
Edward Vieweg	Head Filter Oper.	5/9/1988	3B	7	67,718	15%	10,157.71		77,876
<b>Total Regular Salaries</b>					695,685		46,784	3,073	769,570

**Overtime**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	58,000	58,000
<b>Total Overtime</b>		58,000	58,000

**Uniform Allowance**

Name	Position	Amount	Total Benefit
	(8) HFOs and Chemist	240	2,160
<b>Total Uniform Allowance</b>		240	2,160

**Car Allowance**

Name	Position	Per/Month	# Months	Total Benefit
Lewis Zediana	Chief Operator	300	12	3,600
<b>Total Car Allowance</b>		300		3,600

**Sick Leave Buy Back**

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
			10			\$ 270	2,700
<b>Total Sick Leave Buy-Back</b>			10				2,700

**Holiday Pay**

Name	Position	Amount	Total Benefit
	(4) HFOs	19,300	19,300
<b>Total Holiday Pay</b>		19,300	19,300

**All Other Salaries**

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	1,000	1,000
<b>Total All Other Salaries</b>		1,000	1,000

<b>Department Total</b>								856,330
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\*\*\* Supplemental Request (added to Request)

#1 Assistant Superintendent Utility \$24,027.00  
salary split evenly between Water Treatment, Water Distribution and Sewer  
request has been added to the budget request

#2 Overtime \$3,600.00  
Address salary increases for FY16-17, and the annual average  
of \$63,500 over the past (3) years; anticipation of Construction impact

**FISCAL YEAR 2016  
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION**

**Regular Salaries**

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Lewis Zediana	Chief Operator	5/9/1988	A/4		83,583	15%	12,399.00		95,982
Marlene Ladderbush	Chemist	5/17/2004	4	7	67,923		1,500		69,423
Michael Brothers	Head Filter Oper.	8/30/2004	3b	7	64,950		1,250		66,200
	Longevity (Full)	12/1/2014					250		250
Michael Donovan	Head Filter Oper.	3/21/1994	3b	7	64,950		2,500		67,450
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	60,453	15%	9,068.00		69,521
Patrick Carey	Head Filter Oper.	4/6/1998	3b	6	50,536		2,000		52,536
	Step	4/23/2016		7	12,395				12,395
Matt Hirtle	Head Filter Oper.	11/4/2002	3b	7	64,950		1,500		66,450
Robert Minor	Head Filter Oper.	4/26/1999	3b	7	64,950		2,000		66,950
John Salerno	Head Filter Oper.	7/3/1989	3b	7	64,950		3,000		67,950
Edward Vieweg	Head Filter Oper.	5/9/1988	3b	7	64,950	15%	9,743.00		74,693
<b>Total Regular Salaries</b>					664,590		45,210	-	709,800

**Overtime**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	54,400	54,400
<b>Total Overtime</b>		54,400	54,400

**Uniform Allowance**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	240	2,160
<b>Total Uniform Allowance</b>		240	2,160

**Car Allowance**

Name	Position	Per/Month	# Months	Total Benefit
Lewis Zediana	Chief Operator	3,600		3,600
<b>Total Car Allowance</b>		3,600		3,600

**Sick Leave Buy Back**

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
			2,600				2,600
<b>Total Sick Leave Buy-Back</b>			2,600				2,600

**Holiday Pay**

Name	Position	Amount	Total Benefit
	HFOs		18,822
<b>Total Holiday Pay</b>		-	18,822

**All Other Salaries**

Name	Position	Amount	Total Benefit
Out of Grade	HFOs		500
<b>Total All Other Salaries</b>		-	500

<b>Department Total</b>								791,882
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**FISCAL YEAR 2015  
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION**

**Regular Salaries**

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Lewis Zediana	Chief Operator	5/9/1988	A	4	82,659	15%	12,398.85		95,058
Marlene Ladderbush	Chemist	5/17/2004	4	7	67,663		1,500		69,163
Michael Brothers	Head Filter Oper.	8/30/2004	3b	7	64,702		1,000		65,702
		12/1/2014					250		250
Michael Donovan	Head Filter Oper.	3/21/1994	3b	7	64,702		2,500		67,202
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	60,265	15%	9,039.75		69,305
Patrick Carey	Head Filter Oper.	11/22/2006	3b	5	47,483		2,000		49,483
		4/23/2015		6	11,919				11,919
Matt Hirtle	Head Filter Oper.	11/4/2002	3b	7	64,702		1,500		66,202
Robert Minor	Head Filter Oper.	4/26/1999	3b	7	64,702		2,000		66,702
John Salerno	Head Filter Oper.	7/3/1989	3b	7	64,702		2,500		67,202
		7/3/2014					500		500
Edward Vieweg	Head Filter Oper.	5/9/1988	3b	7	64,702	15%	9,705.30		74,407
Vacant	Project Manager		PRRB	1	17,961				17,961
<b>Total Regular Salaries</b>					676,162		44,894	-	721,056

**Overtime**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	60,104	60,104
<b>Total Overtime</b>		60,104	60,104

**Uniform Allowance**

Name	Position	Amount	Total Benefit
	HFOs and Chemist	240	2,160
<b>Total Uniform Allowance</b>		240	2,160

**Car Allowance**

Name	Position	Per/Month	# Months	Total Benefit
Lewis Zediana	Chief Operator	3,600		3,600
<b>Total Car Allowance</b>		3,600		3,600

**Sick Leave Buy Back**

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
			5,000				5,000
<b>Total Sick Leave Buy-Back</b>			5,000				5,000

**Holiday Pay**

Name	Position	Amount	Total Benefit
	HFOs	18,718	18,718
<b>Total Holiday Pay</b>		18,718	18,718

**All Other Salaries**

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	500	500
<b>Total All Other Salaries</b>		500	500

<b>Department Total</b>									811,138
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**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5210 Energy Utilities*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
383,796	356,535	378,797	378,797	397,795	339,941	365,000	<b>380,000</b>	<b>380,000</b>

Based on historical average of the last three budgets the plant used \$358,424 of energy.

The cost of Electricity to produce and pump 1 million gallons was \$362.00/million in FY11 and \$340 in FY13  
 FY15 the cost was \$330 Avg Electric cost based on 345/million  
 The annual flow through the plant is based on a high consumption year at 900 million gallons/yr. plus 5% ;

330,000 330,000

An increase to the plant's electric cost has been incorporated to address estimate

Natural gas has varried depending on serverity of winter weather  
 Avg NG cost for last three years \$25,000

25,000 25,000

Additional electricity to run new aeration facility, light and heat, laboratory addition and new equalizing tank etc.

25,000 25,000

*Total 5210 Energy Utilities:* 380,000 380,000

Aeration

2.2 MGD \* 35 HP/MGD \* .7471 HP/KWatt \* 3 months \* 30 days/month \* 24 hrs./day \* \$0.1389/ KWatt- hr. = \$17,259

18,000

Equalization tank

2 x 2 HP \* 0.7471 HP/KWatt \* 365 days/yr. \* 18 hrs./day\*\$0.1389 /KWatt-hr. = \$2,727

3,000

Additional Lights and Heat for newly installed buildings

2 KWatt \* 365 days \* 24 hrs./day \* \$0.1389/ KWatt-Hr. = \$2,102

2,500

Cooling for VFD's

4 KWatts \* 3 months \* 30 days/month \* 24 hrs./day \* \$0.1389 / KWatt-hr. = \$1200

1,500

25,000

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION EXPENSES**

*5231 Water Purchase*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
25,980	25,980	33,980	33,980	24,760	24,760	8,000	<b>8,000</b>	<b>8,000</b>

Purchase of water for residents supplied from the City of Lowell

8,000 8,000

*Total 5231 Water Purchase:*

8,000 8,000

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

5240 Repairs and Maintenance

	FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
	126,563	125,034	132,682	131,417	136,108	124,821	124,947	<b>122,836</b>	<b>122,836</b>

The budget number anticipates need and correctly reflects a BMP of budgeting 10% of operating for repairs and maintenance 122,836 122,836

Total 5240 Repairs and Maintenance: \$ 122,836 122,836

**Chemical Feed Pump Repairs and Supplies**

240 gpd KOP Kits	6	\$142	\$852
240 gpd diaphragms	12	\$62	\$744
80 gpd KOP kits	2	\$124	\$248
80 gpd diaphragms	2	\$62	\$124
120 gpd KOP kits	5	\$134	\$670
120 gpd diaphragms	5	\$62	\$310
44 gpd KOP kits	1	\$129	\$129
44 gpd diaphragms	3	\$62	\$186
Five way valves/anti syphon	6	\$84	\$504
Walchem antisiphon valves	8	\$154	\$1,232
Chemical Injectors spring loaded	6	\$50	\$300
Various PVC parts/piping, primer, glue	1	\$1,500	\$1,500

**Lubrication**

White Grease, Red Grease, Turbo Oil	1	\$500	\$500
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**Backflow Program**

Brass Inserts for Testing Backflow Devices	1	\$400	\$400
Calibration of Backflow Testing Gauge	2	\$220	\$440

**Sludge Drying System**

Replacement Filter Cloth	2	\$540	\$1,080
Replacement Autovac Vacuum Seals	2	\$1,335	\$2,670
Replacement Vacuum Pump Seals	2	\$1,200	\$2,400
Duct Tape, Two-sided Tape	24	\$10	\$240
New Knife Blades	3	\$1,445	\$4,335

**Replacement Items**

Sample Pumps	8	\$284	\$2,272
Flocculator Drive, submersible VFD's	1	\$2,000	\$2,000

**Contingency Repair (major failure)**

Unanticipated or Unplanned	1	\$35,000	\$35,000
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**Repair Services**

Rebuild Flygt pumps	1	\$2,000	\$2,000
Misc.. Repairs and Contingency (small items)	1	\$15,000	\$15,000
Landscaping equipment maintenance/repair	1	\$2,200	\$2,200
Rebuild pump at Colonial Drive	1	\$15,000	\$15,000
Replace Parking lot lights with LED	5	\$1,000	\$5,000
4 Generators Annual Maintenance (oil/filter)	1	\$1,500	\$1,500
Sludge collection system/ motors/ gears/ chain	2	\$3,500	\$7,000
Mechanical Seals for Large Water Pumps	2	\$2,000	\$4,000
Rebuild gear boxes and vacuum pumps	1	\$2,000	\$2,000

**Grounds Maintenance/ Drainage Work**

Vegetation Mngt at Storage Tank locations	1	\$8,000	\$8,000
Mowing WTP, Ameshill, Astle, Colonial	1	\$3,000.00	\$3,000

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**  
*5270 Leases and Contract Services*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
54,540	52,330	55,826	51,037	62,889	59,424	67,356	<b>76,464</b>	<b>76,464</b>

Instrument Calibration/Repair (Plant, monthly)	1			\$7,800			7,800	7,800
Hach Calibration program	4			\$4,000			16,000	16,000
Lab Equipment Calibration (Annual)	1			\$1,500			1,500	1,500
Fume Hood Inspection (Annual)	1			\$300			300	300
Copier Maintenance Contract	1			\$600			600	600
HVAC maintenance contract	1			\$6,000			6,000	6,000
Equipment / pump rental	1			\$200			200	200
Tokay Computer Software Annual Support	1			\$500			500	500
Tank Rental Propane	1			\$99			99	99
Tank Lease Nitrogen	1			\$265			265	265
Fire System Maintenance/Testing	1			\$1,000			1,000	1,000
Solarbee tank mixer Maintenance Contract	1			\$2,200			2,200	2,200
Backflow Inspections and surveys	1			\$40,000			40,000	40,000
<i>Total 5270 Leases and Contracts:</i>							<b>76,464</b>	<b>76,464</b>



**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5340 Communications*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	<b>FY2017 DEPT REQ</b>	<b>FY2017 TM REC</b>
14,785	14,251	14,000	13,739	16,066	14,809	14,000	<b>14,000</b>	<b>14,000</b>

CCR report	1	\$5,500	5,500	5,500
CCTV Monitoring	1	\$3,000	3,000	3,000
Telephone/FIOS (Verizon)	1	\$5,000	5,000	5,000
Backflow direct mailing costs	1	\$500	500	500

*Total 5340 Communications:*                    **14,000**                    **14,000**

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5420 Office Supplies*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	<b>FY2017 DEPT REQ</b>	<b>FY2017 TM REC</b>
2,000	1,862	2,000	1,635	2,713	2,163	2,500	<b>2,500</b>	<b>2,500</b>

Pens, paper, toner, fax supplies,  
 File cabinets, ink cartridges, laser jet cartridges  
 Labeling/chart printouts and business postage

2,500 2,500

*Total 5420 Office Supplies:* 2,500 2,500

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5423 All Other Supplies and Equipment*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
54,275	53,576	63,650	55,385	62,686	61,247	53,105	65,105	65,105

*Laboratory Budget*

Performance Evaluation DEP	1	\$300					300	300
Misc. accessories, expendables	1	\$3,000					3,000	3,000
EPA/DEP Required Sample Analysis	1	\$10,000					10,000	10,000
IOC, SEC, THM, HAA5, VOC, TOC, Chlorite	4	\$2,160					8,640	8,640
UCMR3 mandated analysis (continued)	4	\$1,500					6,000	6,000
Inorganic Chemicals, KI, acids, reagents	1	\$4,000					4,000	4,000
Biological supplies, media	4	\$1,250					5,000	5,000
Microbiology cultures for QC	4	\$100					400	400
Instrumental Supplies, analytical kits	1	\$1,930					1,930	1,930
FEDEX for overnight sample shipments	1	\$3,000					3,000	3,000
Organic Chemicals, dyes, indicators, etc.	1	\$660					660	660
pH meter, supplies, standards, probes	1	\$1,500					1,500	1,500
Chemtrec chlorine analyzers (maintenance)	6	\$200					1,200	1,200
Online THM analyzer	1	\$12,000					12,000	12,000

*General Plant Items*

Cleaning supplies, brooms, mops, pads	1	\$1,500					1,500	1,500
Paper products (TP, C-fold towels etc.)	1	\$1,000					1,000	1,000
Safety supplies, replacement masks, filters	1	\$1,000					1,000	1,000
Fire /Safety Inspections (extinguishers)	1	\$500					500	500
Misc. items, batteries, flashlights, gloves,	1	\$500					500	500
First Aid kit supplies	6	\$100					600	600
Hazardous chemical disposal	1	\$500					500	500
Shop Tools	1	\$1,000					1,000	1,000
Nitrogen gas, Propane	1	\$875					875	875

*Total 5423 All Other Supplies and Equipment:* 65,105 65,105

Added costs incurred to support new online equipment.

Specifically the THM-100 which monitors THM's, this device will automatically collect and analyze water samples for THM's and the information will be used to determine when the aeration system should be activated to reduce THM's to a reasonable level. The THM-100 is a sophisticated device that will provide up to 8 data point per day. In a year this devcie will perform the equivalent of \$220,000 of THM analysis for \$12,000. The mainteance fee provides "soup to nuts" coverage and online monitoring of the device via cell phone communication. This device was evalauted and and has been recommended by our engineering firm AECOM.

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5429 Computer Equipment*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
-	-	-		-	-	-	-	-

*Total 5429 Computer Equipment:* - -

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*Chemicals*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
449,512	432,420	456,039	450,971	526,722	492,204	469,550	<b>468,675</b>	<b>468,675</b>

*Total Chemicals:* 468,675 468,675

Tewksbury Water Plant Chemical Budgeting Using Tank Fill Counts/Deliveries

Historical Analysis of Actual Use of Chemicals

Chemical Name	Amount each fill	Units	FY15	FY14	FY13 Actual amount Used	FY12	Fill/Delivery (Expected FY17)
NaChlorite	1500	gallons	6	7	7	6	7
Alum	4000	gallons	13	12	15	13	13
Hypo	4000	gallons	8	10	11	10	10
HCl	1000	gallons	5	6	6	6	6
Silly Acid	55	gallons	56	54	61	55	55
25% NaOH	4000	gallons	12	11	13	12	12
ZOP	1000	gallons	1	0	1	1	1
PAC	5	bags	4	5	8	9	5
GAC	70000	pounds	1	1	1	1	1
DE	40	bags	11	10	9	10	10

This method is based on fill counts of chemical deliveries

Based on actual amount of each chemical used and historically how many deliveries or fills used.

One cycle of each chemical (where applicable) is added for contingency of a hot summer, high usage or low amount at end of year.

Depending on usage and how much chemical is left at the end of the year will determine if the extra fill is needed.

Certain chemicals such as GAC and ZOP will not have overages due to the nature of the usage.

Prediction of Chemical Use and Expected Cost \$

Chemical Name	Amount	Units	Fills	Cost /fill FY17	Total Cost	Add 1 fill	Total Used \$
NaChlorite	1500	gallons	7	\$8,663	\$60,641	\$8,663	\$69,304
Alum	4000	gallons	13	\$4,031	\$52,403	\$4,031	\$56,434
Hypo	4000	gallons	10	\$2,635	\$26,350	\$2,635	\$28,985
HCl	1000	gallons	6	\$1,833	\$10,998	\$1,833	\$12,831
Silly Acid (Fluoride)	55	gallons	55	\$214	\$11,761	\$214	\$11,975
25% NaOH	4000	gallons	12	\$3,190	\$38,280	\$3,190	\$41,470
ZOP (Corrosion Inhibitor)	1000	gallons	1	\$8,650	\$8,650	\$0	\$8,650
PAC	5	bags	5	\$1,300	\$6,500	\$1,300	\$7,800
GAC (two filters per year)	70000	pounds	1	\$77,826	\$77,826	\$0	\$77,826
DE	40	bags*	10	\$13,400	\$134,000	\$13,400	\$147,400

\*DE comes in 1000 lb. super sacks

\*\*PAC comes in 900 lb. supersacks

\$427,409 \$35,266 \$ 462,675

FY17 budgeted: \$462,675

Some misc. chemicals are purchased such as ice melter, back-up barrels of chemicals etc.

\$6,000

**FY17 budgeted: \$468,675**

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*Residual Disposal*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
54,874	45,279	56,392	52,795	63,410	60,107	62,625	66,000	66,000

*Total Residual Disposal:* 66,000 66,000

**Residuals Calculation:**

Based on typical 870 Million Gallons of water production and producing 35 mg/L of total settling solids from the pretreatment. The plant will use about 360,000 lbs. of DE which will remove 327,000 (+/-) lbs of solids. The typical sludge has a moisture content of about 33%. Therefore the 687,000 lbs of solids will yield 2,081,818 lbs of wet cake. Amount generated: 1,040 +/- tons of wet cake per year. Unit load (Dumpster) consist of 5-6 runs. Each run @ 3 tons +/-, for a total of 15-18 tons +/- per pull

1041	\$33.13	Tipping fee/Ton	\$34,488.33			
60	\$437.50	Hauling/Pull	\$26,250.00			
			\$60,738.33	or	\$5,061.53 per month	\$60,738.33

Since sludge production is unpredictable extra money is budgeted for heavy production years and Where water quality may contain heavy levels of solid (TSS). 30-45 Tons \$3,000.00  
Also, additional dried sludge is produced when process/storage tanks for sludge are cleaned. 35 Tons \$2,262.00

This is the last year for the present disposal contract. I am expecting a large increase (25%)  
The increase is due to changing disposal locations to another BUD (Beneficial Use Designation)  
This BUD will have a duration for another three years.

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

Water Assessment

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	FY2017 DEPT REQ	FY2017 TM REC
7,473	7,473	8,000	6,911	8,000	7,330	8,000	8,000	8,000
Mandatory fee charged by DEP based on previous years reported water volumes							8,000	8,000
<i>Total Water Assessment:</i>							8,000	8,000

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5580 Uniform Allowance*

FY2010 BUDGETED	FY2010 EXPENDED	FY2011 BUDGETED	FY2011 EXPENDED	FY2012 BUDGETED	FY2012 EXPENDED	FY2013 BUDGETED	<b>FY2014 DEPT REQ</b>	<b>FY2014 TM REC</b>
1,800	1,552	1,800	588	-	-	-	-	-

*Total 5580 Uniform Allowance:* - -

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5703 Dues and Memberships*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	<b>FY2017 DEPT REQ</b>	<b>FY2017 TM REC</b>
468	468	700	481	700	319	700	<b>700</b>	<b>700</b>

Professional Water and Microbiology organizations and publications incl: American Water Works Association,  
New England Water Works Association, Massachusetts Water Works Association for Chief Operator and Chemist

700 700

*Total 5703 Dues and Memberships:*

700 700

**DESCRIPTION/DETAIL**

**DPW WATER FILTRATION OPERATING**

*5790 Staff Development/Training*

FY2013 BUDGETED	FY2013 EXPENDED	FY2014 BUDGETED	FY2014 EXPENDED	FY2015 BUDGETED	FY2015 EXPENDED	FY2016 BUDGETED	<b>FY2017 DEPT REQ</b>	<b>FY2017 TM REC</b>
3,300	3,089	2,500	2,500	3,064	2,670	3,000	<b>2,500</b>	<b>2,500</b>

Staffing education for renewal of drinking water license.

2,500 2,500

This is a renewal year for all staff for both drinking water licenses and backflow licenses.

*Total 5790 Staff Development/Training:*

2,500 2,500

