

	FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC	FY2020 FIN COM REC
DPW WATER FILTRATION										
<i>Salaries</i>										
5111 Regular	718,763	714,054	766,570	759,831	785,162	783,067	784,054	778,275	778,275	
5120 Temporary Part-Time Salaries	-	-	-	-	-	-	-	9,310	9,310	
5130 Overtime	68,302	64,351	61,000	59,135	112,550	102,773	68,000	74,500	74,500	
5135 Uniform Allowance	2,160	2,160	2,160	2,160	2,160	2,160	3,300	4,200	4,200	
5150 Car Allowance	3,600	3,600	3,600	3,600	5,300	5,250	7,200	7,200	7,200	
5160 Sick Leave Buy Back	2,700	1,323	2,700	2,700	54,770	54,457	2,767	2,903	2,903	
5163 Holiday Pay	18,822	18,747	19,300	19,273	19,800	19,757	22,698	22,646	22,646	
5180 All Other Salaries	500	108	1,000	48	300	199	1,200	1,200	1,200	
Total Salaries	814,847	804,342	856,330	846,747	980,042	967,664	889,219	900,235	900,235	
<i>Operating</i>										
5210 Energy Utilities	383,233	392,660	468,093	430,094	376,000	438,854	385,000	368,500	368,500	
5231 Water Purchase	26,701	26,701	14,877	9,239	8,000	5,869	8,000	8,500	8,500	
5240 Repairs and Maintenance	132,066	119,744	167,254	166,999	128,925	131,919	138,688	159,000	159,000	
5270 Leases and Contract	70,340	67,812	83,438	82,329	82,214	67,166	84,500	84,500	84,500	
5310 Professional Services	-	-	-	-	-	-	-	-	-	
5340 Communications	200,007	15,619	16,774	16,679	15,200	13,439	14,700	17,400	17,400	
5420 Office Supplies	2,700	2,000	2,583	2,187	2,500	2,353	2,500	2,600	2,600	
5423 All Other Supplies and Exp.	61,904	51,707	78,609	77,981	69,905	73,765	59,750	63,675	63,675	
5429 Computer Equipment	-	-	-	-	-	-	2,600	700	700	
5441 Chemicals	550,438	461,823	569,667	475,760	458,675	456,653	460,000	472,409	472,409	
5442 Residual Disposal	79,758	64,155	81,801	64,071	51,090	50,325	52,750	60,000	60,000	
5443 Water Assessment	8,000	7,636	6,905	6,905	8,000	8,000	8,000	8,000	8,000	
5580 Uniform Allowance	-	-	-	-	-	-	-	-	-	
5703 Dues and Memberships	700	534	700	592	700	433	700	700	700	
5790 Staff Development/Training	3,688	3,000	3,381	2,500	3,000	2,295	2,500	11,500	11,500	
Total Operating	1,519,534	1,213,391	1,494,083	1,335,335	1,204,209	1,251,069	1,219,688	1,257,484	1,257,484	
<i>Capital Outlay</i>										
5833 Capital Outlay	-	-	-	-	-	-	-	-	-	
Total Capital Outlay	-	-								
Total Budget	2,334,382	2,017,733	2,350,413	2,182,082	2,184,251	2,218,733	2,108,907	2,157,719	2,157,719	-

	FY2016 BUDGETED	FY2017 BUDGETED	FY2018 BUDGETED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC	FY2020 FIN COM REC
Position	FTE	FTE	FTE	FTE	FTE	FTE	FTE
Assistant Superintendent		0.3	0.3	0.3	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							
Cross Connection Coordinator	1	1	1	1	1	1	
Intern	-	-	-	-	1	1	
Total Staffing	10	10	10.3	10.3	11.3	11.3	0

\$ -

**FISCAL YEAR 2020
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
Scott Brinch	Assistant Director - Ut	12/18/2017	A10	10	32,234				32,234
Marlene Ladderbush	Chief Operator		A8	7	17,671				17,671
	Step Increase	4/16/2020	A9	8	66,311		2000		68,311
Melissa Woodbury	Chemist	5/17/2004	4	2	20,280				20,280
	Step Increase	11/7/2019	4	3	40,159				40,159
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	73,026		2,000		75,026
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	73,026		3,000		76,026
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	67,970	15%	10,195.50	\$2,736	80,901
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	73,026		2,500		75,526
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	73,026		2,000		75,026
Robert Miner	Head Filter Oper.	4/26/1999	3B	7	73,026		2,500		75,526
John Salerno	Head Filter Oper.	7/3/1989	3B	7	73,026		3,000		76,026
Vacant	Head Filter Oper./Cros	5/9/1988	3B	4	62,584				62,584
Regular Salaries	Extra Day Leap Year				2,979				2,979
Total Regular Salaries					748,344	0	27,196	2,736	778,275

Temporary Part-Time Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Vacant	Summer Intern		D	6	9,310				9,310
Total Temporary Part-Time Salaries					9,310				9,310

Overtime

Name	Position	Amount	Total Benefit
	HFOs and Chemist	74,500	74,500
Total Overtime		74,500	74,500

Uniform Allowance

Name	Position	Amount	Total Benefit
	(8) HFO, Chief Op and Chemist	4,200	4,200
Total Uniform Allowance		4,200	4,200

Car Allowance

Name	Position	Per/Month	# Months	Total Benefit
Marlene Ladderbush	Chief Operator	300	12	3,600
Scott Brinch	Assistant Director	300	12	3,600
Total Car Allowance		600		7,200

Sick Leave Buy Back

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
Robert Miner	Head Filter Oper.		5	75,526	1,447	289.37	1,447
John Salerno	Head Filter Oper.		5	76,026	1,456	291.29	1,456
Total Sick Leave Buy-Back			10				2,903

Holiday Pay

Name	Position	Amount	Total Benefit
	(4) HFOs	22,646	22,646
Total Holiday Pay		22,646	22,646

All Other Salaries

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	1,200	1,200
License Incentive		-	-
Total All Other Salaries		1,200	1,200

Department Total									900,235
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**FISCAL YEAR 2020
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION BUDGET REQUEST**

Regular Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Scott Brinch	Assistant Director - Utility	12/18/2017	A10	10	32,234				32,234
Marlene Ladderbush	Chief Operator		A8	7	17,671				17,671
	Step Increase	4/16/2020	A9	8	66,311		2000		68,311
Melissa Woodbury	Chemist	5/17/2004	4	2	20,280				20,280
	Step Increase	11/7/2019	4	3	40,159				40,159
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	73,026		2,000		75,026
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	73,026		3,000		76,026
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	67,970	15%	10,195.50	\$2,736	80,901
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	73,026		2,500		75,526
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	73,026		2,000		75,026
Robert Miner	Head Filter Oper.	4/26/1999	3B	7	73,026		2,500		75,526
John Salerno	Head Filter Oper.	7/3/1989	3B	7	73,026		3,000		76,026
Vacant	Head Filter Oper./CrossConn	5/9/1988	3B	4	62,584				62,584
Regular Salaries	Extra Day Leap Year				2,979				2,979
Total Regular Salaries					748,344	0	27,196	2,736	778,275

Temporary Part-Time Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Vacant	Summer Intern		D	6	9,310				9,310
Total Temporary Part-Time Salaries					9,310				9,310

Overtime

Name	Position	Amount	Total Benefit
	HFOs and Chemist	74,500	74,500
Total Overtime		74,500	74,500

Uniform Allowance

Name	Position	Amount	Total Benefit
	(8) HFO, Chief Op and Chemist	4,200	4,200
Total Uniform Allowance		4,200	4,200

Car Allowance

Name	Position	Per/Month	# Months	Total Benefit
Marlene Ladderbush	Chief Operator	300	12	3,600
Scott Brinch	Assistant Director	300	12	3,600
Total Car Allowance		600		7,200

Sick Leave Buy Back

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
Robert Miner	Head Filter Oper.		5	75,526	1,447	289.37	1,447
John Salerno	Head Filter Oper.		5	76,026	1,456	291.29	1,456
Total Sick Leave Buy-Back			10				2,903

Holiday Pay

Name	Position	Amount	Total Benefit
	(4) HFOs	22,646	22,646
Total Holiday Pay		22,646	22,646

All Other Salaries

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	1,200	1,200
License Incentive		-	-
Total All Other Salaries		1,200	1,200

Department Total									900,235
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**FISCAL YEAR 2019
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION**

Regular Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Scott Brinch	Assistant Superintendent Utility		A10	9	30,753				30,753
Vacant	Chief Operator		A8	8	75,753		-		75,753
Marlene Ladderbush	Chemist	5/17/2004	4	7	69,307		1,750		71,057
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	71,419		1,500		72,919
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	71,419		2,750		74,169
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	66,474	\$9,971.15		\$2,676	79,121
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	71,419		2,500		73,919
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	71,419		2,000		73,419
Robert Minor	Head Filter Oper.	4/26/1999	3B	7	71,419		2,100		73,519
John Salerno	Head Filter Oper.	7/3/1989	3B	7	71,419		3,000		74,419
Edward Vieweg	Head Filter Oper.	5/9/1988	3B	7	71,419	\$10,712.84		\$2,875	85,006
Total Regular Salaries					742,220	20,684	15,600	5,550	784,054

Temporary Part-Time Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Total Temporary Part-Time Salaries					-				-

Overtime

Name	Position	Amount	Total Benefit
	HFOs and Chemist	68,000	68,000
Total Overtime		68,000	68,000

Uniform Allowance

Name	Position	Amount	Total Benefit
	(8) HFO, Chief Op and Chemist	3,300	3,300
Total Uniform Allowance		3,300	3,300

Car Allowance

Name	Position	Per/Month	# Months	Total Benefit
Vacant	Chief Operator	300	12	3,600
Scott Brinch	Assistant Superintendent	300	12	3,600
Total Car Allowance		600		7,200

Sick Leave Buy Back

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
Robert Miner	Head Filter Oper.		5	\$ 71,777	1,375	\$ 275	1,375
John Salerno	Head Filter Oper.		5	\$ 72,677	1,392	\$ 278	1,392
Total Sick Leave Buy-Back			10				2,767

Holiday Pay

Name	Position	Amount	Total Benefit
	(4) HFOs	22,698	22,698
Total Holiday Pay		22,698	22,698

All Other Salaries

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	1,200	1,200
Total All Other Salaries		1,200	1,200

Department Total									889,219
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**FISCAL YEAR 2018
DPW WATER FILTRATION DEPARTMENT SALARY INFORMATION**

Regular Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Brian Pena	Assistant Superintendent Utility		A	9	30,003				30,003
Lewis Zediana	Chief Operator	5/9/1988	10	10	92,268	15%	13,840.20	\$3,714	109,822
Marlene Ladderbush	Chemist	5/17/2004	4	7	57,866		1,500		59,366
Michael Brothers	Head Filter Oper.	8/30/2004	3B	7	69,677		1,500		71,177
Michael Donovan	Head Filter Oper.	3/21/1994	3B	7	69,677		2,500		72,177
Frank Giannetti	Head Filter Oper.	4/8/1985	3	7	64,853	15%	9,727.95		74,581
Patrick Carey	Head Filter Oper.	4/6/1998	3B	7	69,677		2,000		71,677
	Longevity						200		200
Matt Hirtle	Head Filter Oper.	11/4/2002	3B	7	69,677		2,000		71,677
Robert Minor	Head Filter Oper.	4/26/1999	3B	7	69,677		2,000		71,677
John Salerno	Head Filter Oper.	7/3/1989	3B	7	69,677		3,000		72,677
Edward Vieweg	Head Filter Oper.	5/9/1988	3B	7	69,677	15%	10,451.55		80,129
Total Regular Salaries					732,729		48,720	3,714	785,162

Temporary Part-Time Salaries

Name	Position	Ann. Date	Grade	Step	Base Salary	Longevity %	Longevity \$	Wage Def.	Total Salary
Total Temporary Part-Time Salaries					-				-

Overtime

Name	Position	Amount	Total Benefit
	HFOs and Chemist	112,550	112,550
Total Overtime		112,550	112,550

Uniform Allowance

Name	Position	Amount	Total Benefit
	(8) HFOs and Chemist	2,160	2,160
Total Uniform Allowance		2,160	2,160

Car Allowance

Name	Position	Per/Month	# Months	Total Benefit
Lewis Zediana	Chief Operator	300	12	3,600
Brian Pena	Assistant Superintendent			1,700
Total Car Allowance		300		5,300

Sick Leave Buy Back

Name	Position	Retirement Date	# of Days	Annual Sal.	Weekly Sal.	Daily Sal.	Total Benefit
Robert Miner	Head Filter Oper.		5	\$ 71,677	1,375	\$ 275	1,375
John Salerno	Head Filter Oper.		5	\$ 72,677	1,395	\$ 279	1,395
*** Lew Zediana	Terminal Leave	May-18					52,000
Total Sick Leave Buy-Back			10				54,770

Holiday Pay

Name	Position	Amount	Total Benefit
	(4) HFOs	19,800	19,800
Total Holiday Pay		19,800	19,800

All Other Salaries

Name	Position	Amount	Total Benefit
Out of Grade	HFOs	300	300
Total All Other Salaries		300	300

Department Total								980,042
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*** Terminal Leave for Lew Zidana
 Sick Leave - 40% of remaining accrual \$ 44,500.00
 Vacation as last (6) weeks in annual salary -

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5210 Energy Utilities

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
383,233	392,660	468,093	430,094	376,000	438,854	385,000	368,500	368,500

The Plant renovation was completed during FY17 and FY18 and may demonstrate higher costs

Electric costs have increased from FY15-FY18 by 10%

The annual flow through the plant is based on a consumption year of 910 million gallons and a high cost of \$356.3/MG (2018)

**New processes at the plant have not had an online history and may affect future cost/MG pumped

340,000 340,000

Natural gas has varried depending on serverity of winter weather

Avg Nat Grid and Direct Energy costs for last three years \$23,000;

28,500 28,500

Total 5210 Energy Utilities: 368,500 368,500

The average cost of Electricity to produce and pump 1 million gallons during FY15 was \$330/mg

The average cost of Electricity to produce and pump 1 million gallons during FY16 was \$323/mg

The average cost of Electricity to produce and pump 1 million gallons during FY17 is \$353/mg:

The average cost of Electricity to produce and pump 1 million gallons during FY18 is \$356/mg:

4-yr Average \$340

DESCRIPTION/DETAIL

DPW WATER FILTRATION EXPENSES

5231 Water Purchase

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
26,701	26,701	14,877	9,239	8,000	5,869	8,000	8,500	8,500

Purchase of water for residents supplied from the City of Lowell

8,500 8,500

Total 5231 Water Purchase:

8,500 8,500

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5240 *Repairs and Maintenance*

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
132,066	119,744	167,254	166,999	128,925	131,919	138,688	159,000	159,000

The budget number anticipates need and correctly reflects a BMP of budgeting 10% of operating for repairs and maintenance 159,000 159,000

Total 5240 Repairs and Maintenance: \$ 159,000 159,000

Chemical Feed Pump Repairs and Supplies

Rebuild Kits for new Chemical feed pumps; 1 6000 6000
 purchase of Spare pump (new expense FY20) 1 3000 3000

Various PVC parts/piping, primer, glue 1 \$2,000 \$2,000

Lubrication

White Grease, Red Grease, Turbo Oil 1 \$550 \$550

Backflow Program

Brass Inserts for Testing Backflow Devices 1 \$450 \$450
 Calibration of Backflow Testing Gauge 2 \$150 \$150

Sludge Drying System

Replacement Filter Cloth 2 \$550 \$550
 Replacement Autovac Vacuum Seals 2 \$1,335 \$2,670
 Replacement Vacuum Pump Seals 2 \$1,200 \$2,400
 New Knife Blades 3 \$1,200 \$3,600

Replacement Items

Sample Pumps 2 \$315 \$630

Contingency Repair (major failure)

Unanticipated or Unplanned 1 \$30,000 \$30,000

Repair Services

HVAC Repair 1 \$10,000 \$10,000
 Aeration Blower Maintenance 1 \$5,000 \$5,000
 Rebuild and purchase Flygt pumps 1 \$8,000 \$8,000
 Misc. Repairs and Contingency (small items) 1 \$15,000 \$15,000
 Landscape Maintenance 1 \$4,000 \$4,000
 Maintenance for remote Stations 1 \$6,000 \$6,000
 4 Generators Annual Maintenance (oil/filter) 1 \$2,000 \$2,000
 Sludge collection system/ motors/ gears/ chain 1 \$2,000 \$2,000
 Mechanical Seals for Large Water Pumps 2 \$2,000 \$4,000
 Rebuild Finished water pump #4 1 \$17,000 \$17,000
 Rebuild Raw Water Pump #3 1 \$17,000 \$17,000

Facility Maintenance

Install electric at Ames Hill tank to operate SolarBees (New expense FY20) 1 \$5,000 \$5,000
 Vegetation Mngt at Storage Tank locations 1 \$3,000 \$3,000
 Cleaning Services 1 \$9,000 \$9,000

\$ 159,000

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING
5270 Leases and Contract Services

	FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
	70,340	67,812	83,438	82,329	82,214	67,166	84,500	84,500	84,500
Instrument Calibration/Repair (Plant, monthly)				12	\$150	\$1,800			
Hach Calibration program				4	\$3,500	\$14,000			
Thermo Fluoride applicator maintenance				1	\$1,000	\$1,000			
Lab Equipment Calibration (Annual)				1	\$1,500	\$1,500			
Copier Maintenance Contract				1	\$400	\$400			
HVAC maintenance contract				1	\$5,000	\$5,000			
Equipment / pump rental				1	\$200	\$200			
Tokay Computer Software Annual Support				1	\$800	\$800			
Tank Rental Propane				1	\$200	\$200			
Tank Lease Nitrogen				1	\$200	\$200			
Fire System Maintenance/Testing				2	\$2,500	\$5,000			
Solarbee tank mixer Maintenance Contract				1	\$2,400	\$2,400			
Backflow Inspections and surveys				1	\$50,000	\$50,000			
Maintenance new SCADA system				1	\$2,000	\$2,000		84,500	84,500
<i>Total 5270 Leases and Contracts:</i>								84,500	84,500

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5340 Communications

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC	
200,007	15,619	16,774	16,679	15,200	13,439	14,700	17,400	17,400	
							CCR report/mailing	3,500	3,500
							CCTV Monitoring,	5,000	5,000
							Cyber Comm License	100	100
							Telephone/FIOS (Verizon)	6,800	6,800
							Backflow direct mailing/bid advertising	2,000	2,000
							<i>Total 5340 Communications:</i>	17,400	17,400

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5420 Office Supplies

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
2,700	2,000	2,583	2,187	2,500	2,353	2,500	2,600	2,600

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

2,600 2,600

Total 5420 Office Supplies: 2,600 2,600

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5423 All Other Supplies and Equipment

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
61,904	51,707	78,609	77,981	69,905	73,765	59,750	63,675	63,675

Laboratory Budget

Performance Evaluation DEP	1	\$300	\$300					
Misc. accessories, expendables	1	\$6,000	\$6,000					
EPA/DEP Required Sample Analysis	1	\$10,000	\$10,000					
IOC, SEC, THM, HAA5, VOC, TOC, Chlorite	4	\$2,400	\$9,600					
UCMR3 mandated analysis (continued)	4	\$1,500	\$6,000					
Inorganic Chemicals, KI, acids, reagents	1	\$4,000	\$4,000					
Biological supplies, media	4	\$1,250	\$5,000					
Microbiology cultures for QC	4	\$100	\$400					
Instrumental Supplies, analytical kits	1	\$2,500	\$2,500					
FEDEX for overnight sample shipments	1	\$3,500	\$3,500					
Organic Chemicals, dyes, indicators, etc.	1	\$675	\$675					
pH meter, supplies, standards, probes	1	\$5,000	\$5,000					
Chemtrec chlorine analyzers (maintenance)	6	\$300	\$1,800					

General Plant Items

Cleaning supplies, brooms, mops, pads	1	\$1,500	\$1,500					
Paper products (TP, C-fold towels etc.)	1	\$1,100	\$1,100					
Safety supplies, replacement masks, filters	1	\$1,200	\$1,200					
Misc. items, batteries, flashlights, gloves,	1	\$500	\$500					
First Aid kit supplies	6	\$150	\$900					
Hazardous chemical disposal	1	\$700	\$700					
Shop Tools	1	\$1,000	\$1,000					
Nitrogen gas, Propane	1	\$1,000	\$1,000				63,675	63,675
Safety shower/Eye wash/fume hood inspection	1	\$1,000	\$1,000					

Total 5423 All Other Supplies and Equipment: 63,675 63,675

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5429 Computer Equipment

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
-	-	-		-	-	2,600	700	700
Replace (1) of (5) desk top computers as part of an on-going schedule of replacement							700	700
<i>Total 5429 Computer Equipment:</i>							700	700

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

Chemicals

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
550,438	461,823	569,667	475,760	458,675	456,653	460,000	472,409	472,409

Tewksbury Water Plant Chemical Budgeting Using Tank Fill Counts/Deliveries Total Chemicals: 472,409 472,409

Historical Analysis of Actual Use of Chemicals

Chemical Name	Amount each fill	Units	Expected Delivery FY20
NaChlorite	1000	gallons	11
Alum	4000	gallons	14
Hypo	4000	gallons	11
HCl	330	gallons	16
Silly Acid	300	gallons	12
25% NaOH	4000	gallons	11
ZOP	1000	gallons	1
PAC	5	bags	4
GAC	70000	pounds	2
DE	40	bags	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 FY20	Total Cost	Add 1 fill	Total Used \$
NaChlorite	1000	gallons	11	\$5,917	\$65,090.85	\$5,917	\$71,008
Alum	4000	gallons	14	\$3,940	\$55,160.00	\$3,940	\$51,881
Hypo	4000	gallons	11	\$3,750	\$41,250.00	\$3,750	\$31,160
HCl	330	gallons	16	\$726	\$11,616.00	\$726	\$9,438
Silly Acid (Fluoride)	300	gallons	12	\$977	\$11,724.00	\$977	\$12,051
25% NaOH	4000	gallons	11	\$4,200	\$46,200.00	\$4,200	\$39,243
ZOP (Corrosion Inhibitor)	1000	gallons	1	\$3,709	\$3,709.03	\$3,709	\$7,418
**PAC	5	bags	4	\$1,000	\$4,000.00	\$0	\$4,000
GAC (two filters per year)	70000	pounds	2	\$31,740	\$63,480.00	\$0	\$63,480
DE	40	bags	10	\$13,360	\$133,600.00	\$13,360	\$146,960
					\$435,830	\$36,579	\$ 472,409

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

*DE comes in 1000 lb. super sacks
 **PAC comes in 900 lb. supersacks

Please note that some chemicals shall be shipped in different volumes as the new unit process comes online.
 The total volumes should be similar.

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

Residual Disposal

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
79,758	64,155	81,801	64,071	51,090	50,325	52,750	60,000	60,000

Removal and disposal of solid Waste residuals removed from the Water Filtering process 60,000 60,000

Total Residual Disposal: 60,000 60,000

Residuals Calculation:

Based on typical 877 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

1050	\$22.50	Tipping fee/Ton	\$23,625.00			
60	\$510.00	Hauling/Pull	\$30,600.00			
			\$54,225.00	or	\$4,518.75 per month	\$54,225.00

Since sludge production is unpredictable extra money is budgeted for heavy production years and Where water quality may contain heavy levels of solid (TSS). 60 Tons with 4 pulls \$3,400.00

Also, additional dried sludge is produced when process/storage tanks for sludge are cleaned. 35 Tons \$1,900.00

Residuals Contract needs to be rebid for 2020; a 15% contingency will be used for budgeting

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING
Water Assessment

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
8,000	7,636	6,905	6,905	8,000	8,000	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	FY2014 DEPT REQ	FY2014 TM REC
-	-	-	-	-	-	-	-	-

Total 5580 Uniform Allowance: - -

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5703 Dues and Memberships

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
700	534	700	592	700	433	700	700	700

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

700

700

Total 5703 Dues and Memberships:

700

700

DESCRIPTION/DETAIL

DPW WATER FILTRATION OPERATING

5790 Staff Development/Training

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
3,688	3,000	3,381	2,500	3,000	2,295	2,500	11,500	11,500

Training and Certification for (2) staff in Backflow/Cross-connection							2,600	2,600
Treatment Operators training for T-3 License (2) staff							2,000	2,000
(3) at 700 for CEU's							2,100	2,100
(6) at 15 credits CEU's @ 800							4,800	4,800
<i>Total 5790 Staff Development/Training:</i>							11,500	11,500

DESCRIPTION/DETAIL

DPW WATER FILTRATION
5833 Capital Outlay

FY2016 BUDGETED	FY2016 EXPENDED	FY2017 BUDGETED	FY2017 EXPENDED	FY2018 BUDGETED	FY2018 EXPENDED	FY2019 BUDGETED	FY2020 DEPT REQ	FY2020 TM REC
-		-		-	-	-	-	-

Total 5833 Capital Outlay: - -