2015 Water Treatment Plant

and Supply Reservoir

Annual Report

1931 Filter Building

ANNUAL REPORT FOR 2015

The annual report of operations of the Water Treatment Plant and Supply Reservoir for the year ending December 31, 2015 is respectfully submitted herewith.

The City of Findlay Water Treatment Plant is responsible to provide the citizens of Findlay and the surrounding area with an uninterruptible supply of safe, clean and pleasant tasting drinking water at a reasonable rate.

The water treatment plant is very fortunate to have an outstanding supply of raw water in both quantity and quality. We are also very blessed with a dedicated and well educated staff which helps ensure that we are delivering the highest quality of water possible.

The following is a list of the current water treatment and supply reservoir employees.

Water Treatment Plant Employees

Name	**Position**	**Year Hired**
Jeff Newcomer	Superintendent, Class IV	2012
Brett Young	Supervisor, Class III	2000
Tim Foust	Operator, Class I	2000
Tim Couch	Operator, Class III	2003
Rob Householder	Operator, Class I	2004
Jeremy Carter	Operator, Class II OIT	2013
Dan Ward	Operator, Class I OIT	2015
Rick Parker	Lab Tech I, Class III	2001

Dean Hoge	Assistant Operator	1989
Brian Egts	Maintenance Mechanic II	1990
Brad Eblen	Maintenance Mechanic I	1991
Randy Zacharias Sr.	Maintenance Mechanic I	2011
Marina Vielhaber Zachea	Administrative Asst.	2003

Supply Reservoir

Rich Cap	Maintenance Mechanic I	2001

2015 has been a busy year for the water treatment plant and supply reservoir. Below is a partial list of items that were accomplished in addition to the routine maintenance and lab testing that we do on a daily basis.

Maintenance items

- Re-landscaped front of WTP
- Installed new sodium hypochlorite feed lines
- Installed motion sensors throughout the WTP
- Completed exterior lighting upgrade at the Water Complex
- Fabricated and installed new wear plates in both lime machines
- Installed new actuator cylinders on pre-treatment influent and effluent lines
- Installed new actuator cylinder on by-pass line
- Hauled 885 loads of lime to drying bed or fields

Lab items

- Tested 216 bacteria samples for other Public Water Systems
- Tested 51 bacteria samples for private individuals
- Tested 78 bacteria samples for new mains

- Tested 12 bacteria samples for new fire lines
- Collected and tested 38 special purpose bacteria samples
- Collected final round of UCMR-3 samples for testing
- Answered rusty water complaints due to system flushing and construction projects, also investigated complaints regarding taste and odor

Reservoir items

- Repaired reservoir force main
- Treated reservoir #1 with algaecide in July, August and September
- Treated reservoir #2 with algaecide in July, August and September
- Monitored weekly conducting algae identification and enumeration on reservoirs 1 and 2 from May 26th to October 26th
- Sampled weekly for microcystins on tap and raw water from July 29th to December 9th
- Applied for and received a grant from OEPA for a portable data sonde to help monitor algae at both reservoirs

Other items

- Completed repairs to clearwell's 1,2 and 3
- SCU #1 painting complete
- Repainted lab cabinets
- Installed new lab floor
- Refinished floors in some chemical areas (phase I)
- Installed new telemetry system
- Finished tuck point and sealing of administration and generator building
- Repair motor on HSP #4

Goals for 2016

- Paint North Water Tower
- Refinish floors in chemical building (phase II)
- Concrete work at reservoir by dam #1
- Concrete work at WTP in 1965 filter basement area
- Complete concrete work on clearwell retaining wall by bike path
- Collect lead and copper samples
- Collect 2nd round of LT2 samples
- Painting and repair of 1965 exterior building
- Raw water line and transfer station evaluation and assessment

I would like to thank all of the water department employees for their dedicated service to the City of Findlay this past year. I would also like to thank City Council and the Mayor and her administration for their continued confidence and support of me and my staff throughout the year.

Sincerely,

Jeffrey I. Newcomer
Superintendent
City of Findlay
Water Treatment Plant

City of Findlay Water Department
Drinking Water Consumer Confidence Report For 2014

Superintendent	Mayor	Safety-Service Director
Jeff Newcomer	Lydia L. Mihalik	Paul E. Schmelzer, P.E., P.S.

Introduction

The following report has been prepared to provide information to you, the consumer, on the quality of our drinking water. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water and water system contacts.

Source water information and assessment

Our water source is surface water pumped from the Blanchard River into the Findlay Reservoir, which is located three miles southeast of the water treatment plant. For the purpose of source water assessments, in Ohio all surface waters are considered susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens, which may rapidly arrive at the public drinking water intake with little warning or time to prepare. The City of Findlay's drinking water source protection area contains potential contaminant sources such as agricultural runoff, industrial storm water, gas station runoff, home construction, animal feed lot runoff, gas lines and gas and oil wells, wastewater treatment discharges, cemeteries, airports, silage, farm machinery repair, pesticide/fertilizer/petroleum storage areas, pasture, closed and inactive landfills, roadways and railways, and one site being investigated by Ohio EPA's Division of Emergency and Remedial Response (Hobbs Dump) just outside the protection area in Seneca County.

We treat your water using lime/soda softening, coagulation, sedimentation, stabilization, fluoridation, disinfection, and filtration to remove or reduce harmful contaminants in the source water; however, no single treatment technique can address all potential contaminants. The potential for water quality impacts can be further decreased by implementing measures to protect the Blanchard River. Information that is more detailed is in the City of Findlay's Drinking Water Source Assessment Report, which can be obtained by calling the Findlay Water Department at 419-424-7193.

Sources of contamination to drinking water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; (E) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Who needs to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

About your drinking water

The EPA requires regular sampling to ensure drinking water safety. Our water department conducted sampling for bacteria, inorganic, synthetic organic, and volatile organic contaminants during 2014. Samples were collected for 73 different contaminants, most of which were not detected in the City of Findlay water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. The Ohio EPA also requires us to monitor for unregulated contaminants that have no current MCLs, treatment techniques or action levels. Some of our data, though accurate, are more than one year old.

Listed below is information on those contaminants that were found in the City of Findlay drinking water.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Bacteriological							
Total Organic Carbon (ppm)	NA	TT	1.9	1.3 – 3.3	NO	2014	Naturally present in the environment.
The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.							
Turbidity (NTU)	NA	TT	0.19	0.04 – 0.19	NO	2014	Soil runoff.
Turbidity (% meeting standard)	NA	TT	100%	100% – 100%	NO	2014	
Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported above, the Findlay Water Department's highest recorded turbidity result for 2014 was 0.19 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.							
Radioactive Contaminants							
Gross Alpha (pCi/L)	0	15	<3	NA	NO	2012	Erosion of natural deposits.
Radium-228	0	5	<1	NA	NO	2012	Erosion of natural deposits
Inorganic Contaminants							
Barium (ppm)	2	2	0.013	NA	NO	2014	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper (ppm)	1.3	AL=1.3	0.230	NA	NO	2013	Corrosion of household plumbing systems; Erosion of natural deposits.
	One out of 30 samples was found to have copper levels in excess of the Action Level of 1.3 ppm.						
Fluoride (ppm)	4	4	1.03	0.88 – 1.09	NO	2014	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Lead (ppb)	0	AL=15	6.1	NA	NO	2013	Corrosion of household plumbing systems; Erosion of natural deposits.
	One out of 30 samples was found to have lead levels in excess of the Action Level of 15 ppb.						
Nitrate (ppm)	10	10	0.20	<0.10 – 0.20	NO	2014	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Synthetic Organic Contaminants including Pesticides and Herbicides							
Atrazine (ppb)	3	3	<0.071	NA	NO	2014	Runoff from herbicide used on row crops.
Simazine (ppb)	4	4	<0.051	NA	NO	2014	Runoff from herbicide used on row crops.
Volatile Organic Contaminants							
Bromodichloromethane (ppb)	NA	NA	7.0	NA	NO	2014	By-product of drinking water chlorination.
Chloroform (ppb)	NA	NA	9.1	NA	NO	2014	By-product of drinking water chlorination.
Dibromochloromethane (ppb)	NA	NA	3.3	NA	NO	2014	By-product of drinking water chlorination.
Haloacetic Acids (HAA5) (ppb)	NA	60	22.3	11.5 – 29.1	NO	2014	By-product of drinking water chlorination.

Total Trihalomethane (TTHM) (ppb)	NA	80	58.3	31.7 – 92.8	NO	2014	By-product of drinking water chlorination.
Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer.							
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.5	1.2 – 1.6	NO	2014	Water additive used to control microbes.
Unregulated Contaminant Monitoring Rule 3							
	Entry Point		Distribution				
	Level Found	Range of Detections	Level Found	Range of Detections			
Chlorate (ppb)	110.4	59.3-140	170.4	72.2-325	NO	2014	
Chromium 3 (ppb)	0.54	0.46-0.61	0.64	0.60-0.68	NO	2014	
Chromium-6 (ppb)	0.25	0.12-0.49	0.30	0.12-0.59	NO	2014	
Molybdenum (ppb)	6.8	5.8-7.4	6.6	5.4-7.7	NO	2014	
Strontium (ppb)	1400	1200-1500	1467	1200-1600	NO	2014	
Vanadium (ppb)	0.35	0.30-0.42	0.37	0.30-0.46	NO	2014	
Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted							

Lead Educational Information

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Findlay Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at http://www.epa.gov/safewater/lead.

License to Operate (LTO) Information

We have a current, unconditioned license to operate our water system.

How do I participate in decisions concerning my drinking water?

If you have any questions about this report or concerning your water utility, please contact Jeff Newcomer by calling (419) 424-7193 or by writing to 110 North Blanchard Street, Findlay, OH 45840. We want our valued customers to be informed about their water utility. You can attend regular public meetings on the first and third Tuesday of each month, at 7:30 p.m., in Council Chambers in the Municipal Building, at 318 Dorney Plaza.

Definitions of some terms contained within this report

- Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- Maximum Contaminant level (MCL): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Parts per Million (ppm) or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.
- Parts per Billion (ppb) or Micrograms per Liter (µg/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.
- Picocuries per Liter (pCi/L): A measure of radioactivity.
- Nephelometric Turbidity Unit (NTU): A measure of water cloudiness.
- Not Applicable (NA)
- Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
- Maximum Residual Disinfectant Level Goal (MRDLG): The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- The "<" symbol: A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

Staffing Level	2012	2013	2014	2015	2016
Reservoir	1	1	1	1	1
Water Treatment	14	14	13	13	14
Water Distribution	13	12	13	13	14
Utility Billing	10	10	10	10	9

Water Department

Superintendent: Jeff Newcomer

Divisions

Reservoir * Treatment * Distribution

Utility Billing

Budget		2013 actual	2014 actual	2015 projection	Original 2015 request	2016 request	$ change from 2015 to 2016 request	% change from 2015 request to 2016 request
Supply Reservoir (SR)	Personal Services	$82,875	$73,799	$79,056	$98,134	$98,709	$575	0.59%
	Other	$298,702	$187,598	$259,786	$316,235	$329,449	$13,214	4.18%
Water Treatment (WT)	Personal Services	$1,046,578	$943,525	$943,820	$1,003,715	$1,079,041	$75,326	7.5%
	Other	$764,385	$914,878	$943,083	$1,076,109	$1,071,639	$(4470)	-0.42%
Water Distribution (WD)	Personal Services	$931,777	$885,207	$890,019	$1,009,610	$1,062,254	$52,644	5.21%
	Other	$321,873	$358,903	$443,164	$457,946	$465,186	$7240	1.58%
Utility Billing (UB)	Personal Services	$671,839	$634,367	$639,474	$687,655	$698,291	$10,636	1.56%
	Other	$224,990	$186,216	$198,708	$209,560	$212,586	$3,026	1.44%

Budget Highlights

Supply Reservoir
- Increase in operational chemicals for treatment of reservoirs with algaecide

Water Distribution
- Increase in Hydrant purchases due to waterline expansion and Increase in R&M of waterlines due to replacing meter lids

Water Treatment
- Replace aging actuators
- Additional lab testing due to regulations
- Hire an additional operator

Utility Billing
- Decreased Staff

2015 Capital Improvement Highlights

- Exterior lighting upgrade at Water complex complete
- Clearwell complete
- Reservoir force main repaired
- SCU #1 painting complete
- Lab cabinet and flooring upgrade complete
- Chemical floors refinish complete (phase I)
- Installed new telemetry system
- WD Purchased new backhoe, pickup truck & air compressor

Key Processes:
- Maintain an adequate supply of water
- Chemically treat and filter all water
- Produce pleasant tasting water at an affordable price
- Dispose of lime sludge through drying beds or land application
- Promote licensing of operators and distribution personnel
- Maintain and develop distribution system
- Bill water, sewer and storm water accounts

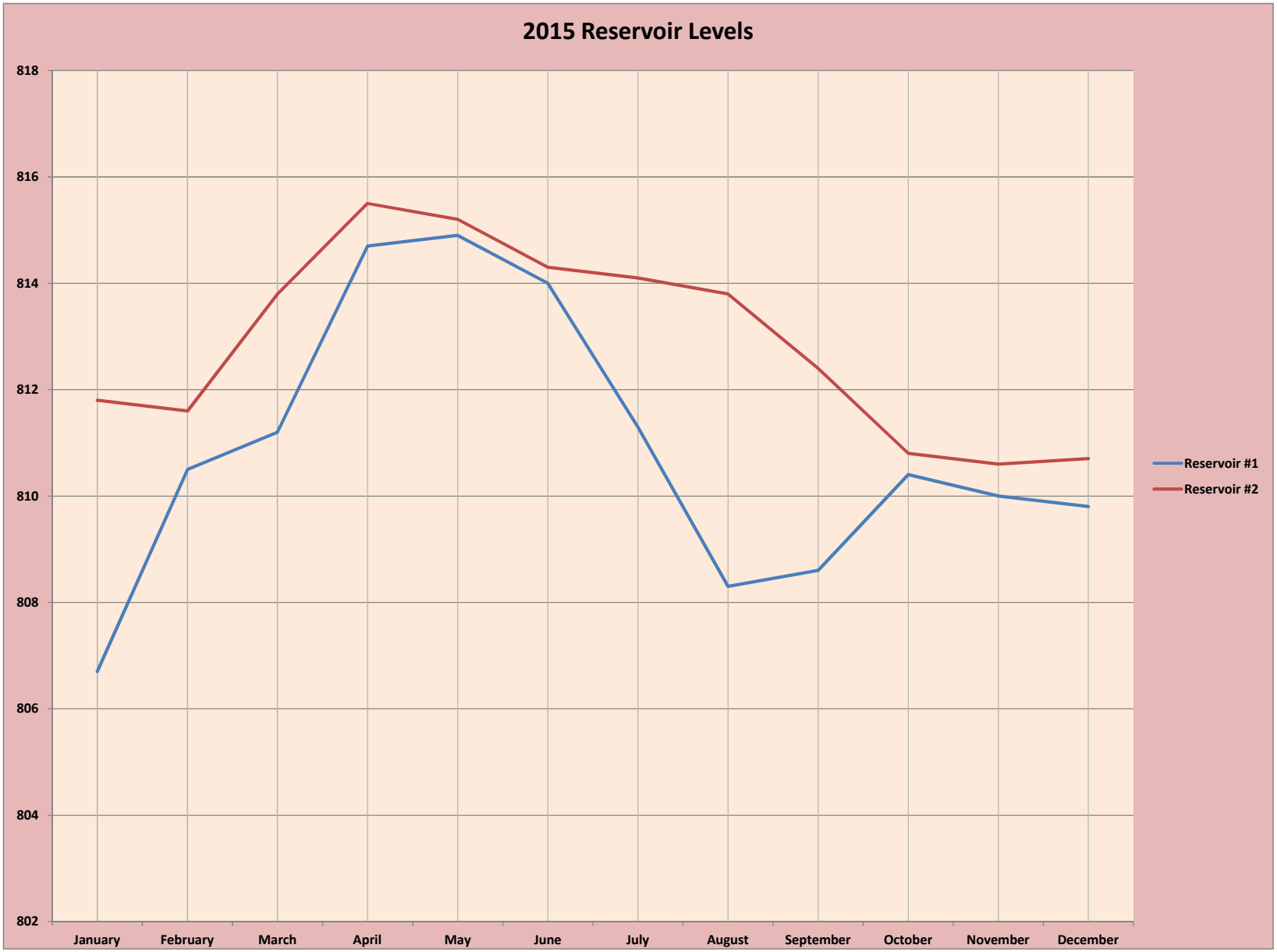
2015 Achievements

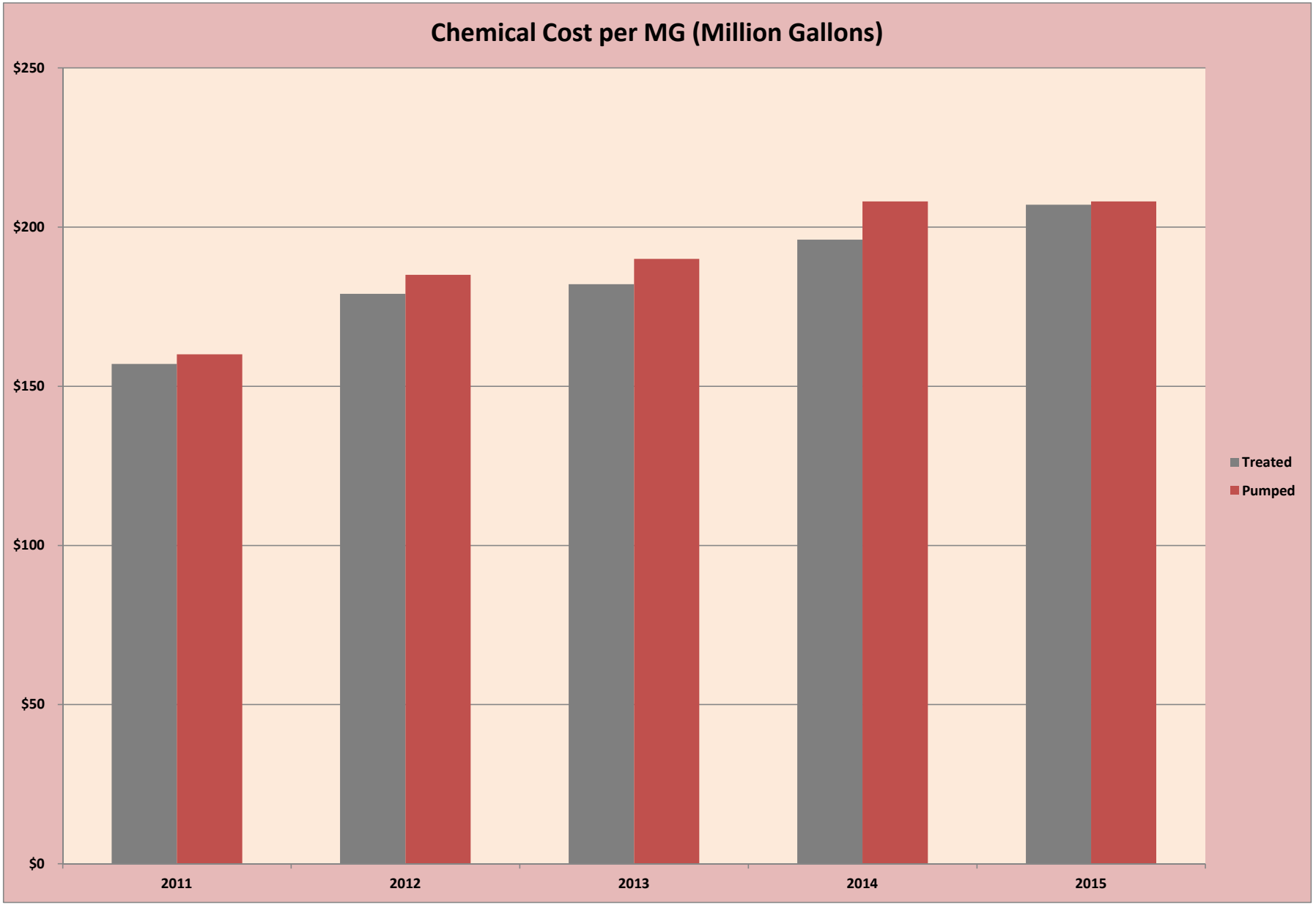
- Replaced small mains with larger (Greendale, Avalon and Fairway Rd.)
- Received a grant for reservoir testing
- Received incentive check from AEP for exterior lighting upgrade
- Continue to use plastic water line when applicable

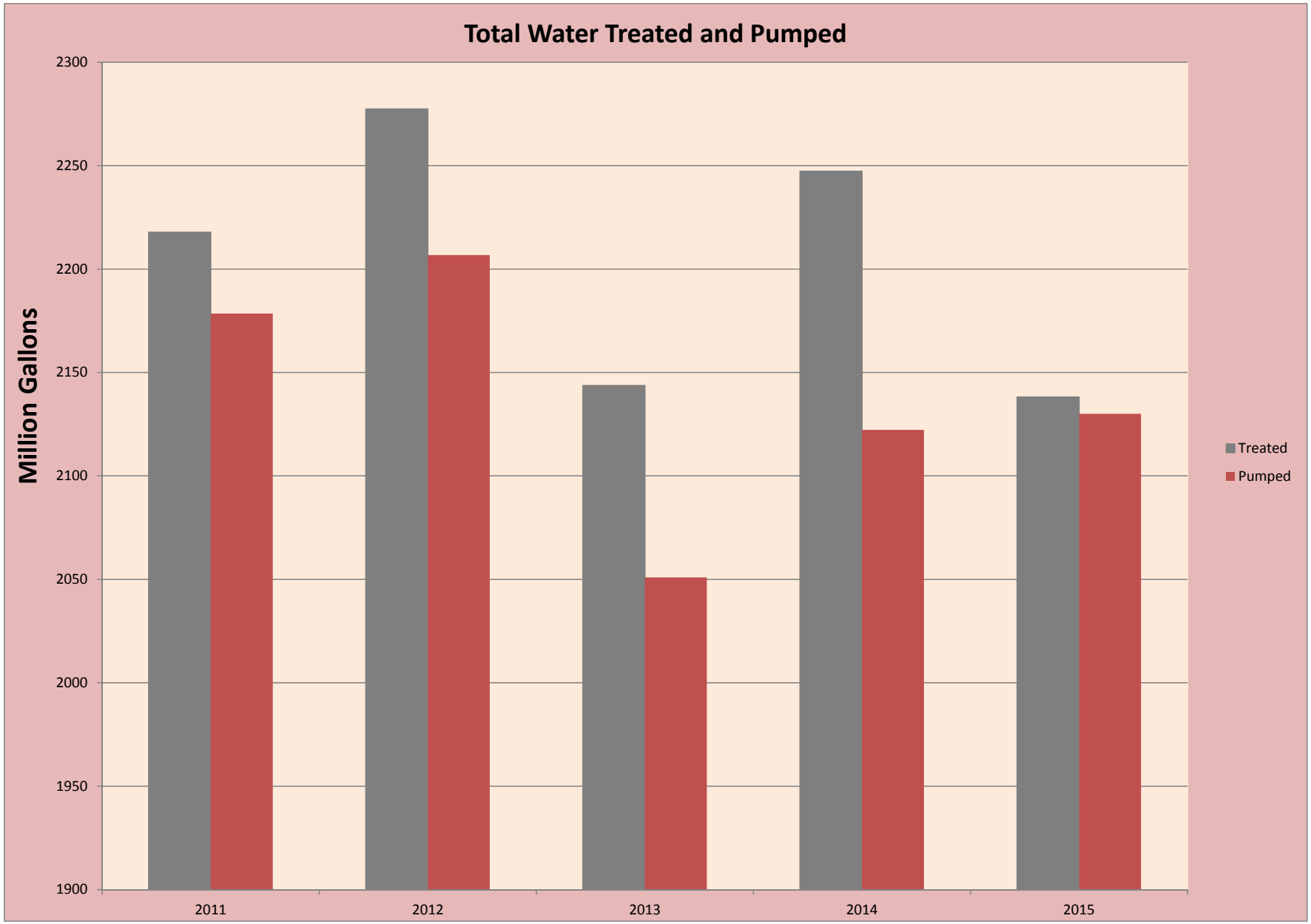
2016 Objectives

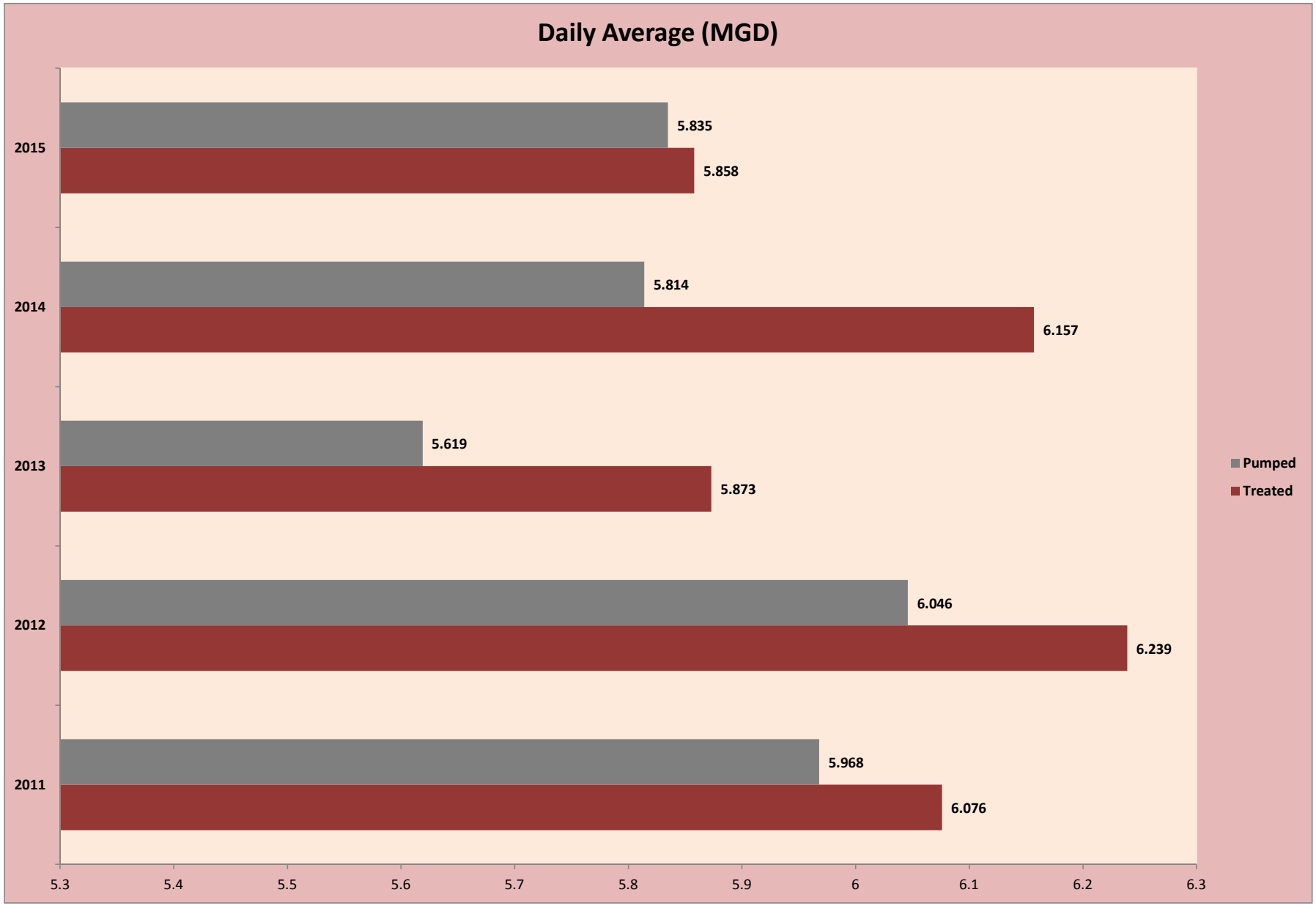
- Billing software upgrade
- Paint North water tower
- Finish floors at WTP in Chemical Bldg. (phase II)
- Concrete work at reservoir and WTP
- Complete retaining wall at bike path
- Continue preventative maintenance at WTP
- Continue small water main replacement

Strategic Partners:
- CMI
- Badger meter
- BRWP
- Oregon WTP
- Smart Bill
- OTCO
- NW District OEPA
- All City Departments
- ODNR
- USGS


2015 Reservoir Levels
818
816
814
812
810
808
806
804
802
January
February
March
April
May
June
July
August
September
October
November
December
Reservoir #1
Reservoir #2


Chemical Cost per MG (Million Gallons)
$250
$200
$150
$100
$50
$0
2011
2012
2013
2014
2015
Treated
Pumped


Total Water Treated and Pumped
Million Gallons
2300
2250
2200
2150
2100
2050
2000
1950
1900
2011
2012
2013
2014
2015
Treated
Pumped


Daily Average (MGD)
2015
2014
2013
2012
2011
5.835
5.858
5.814
6.157
5.619
5.873
6.046
6.239
5.968
6.076
Pumped
Treated
5.3
5.4
5.5
5.6
5.7
5.8
5.9
6
6.1
6.2
6.3

City of Findlay Water Treatment Plant Annual Report

Month	Water Pumped MG	Water Treated MG	Pounds Lime	Gallons Ferric Chloride	Pounds Soda Ash	Pounds Fluoride	Pounds Carbon Dioxide	Gallons Sodium Hypochlorite	Pounds Powdered Carbon	Gallons Sodium Permanganate
January	169.69	176.18	151213	1125	17339	5228	46617	2762	0	563
February	159.11	164.03	144561	1022	16534	4581	42496	2832	0	507
March	173.55	179.47	163402	1282	17854	5085	45853	3041	0	432
April	165.63	167.66	147257	1451	16729	4955	38873	2945	865	533
May	184.06	185.39	170228	1427	18374	5497	43954	3732	1758	704
June	181.69	182.26	171598	1369	18317	5459	42153	4033	4752	1013
July	184.78	188.3	183343	1540	18857	5754	44215	4427	5222	1197
August	203.19	205.28	188002	1840	21326	6254	49455	4989	5693	1152
September	191.15	186.15	159849	1803	18608	5681	47781	4507	5068	991
October	184.02	178.16	160656	1766	16944	5349	44132	3613	4050	896
November	166.28	162.2	140674	1467	16103	5086	41474	2979	4485	686
December	166.87	163.1	146949	1372	15997	5169	42064	2855	4525	700
Totals	2130.02	2138.18	1927731.6	17464	212982	64098	529067	42715	36418	9374
Monthly Avg	177.50	178.181667	160644	1455	17749	5342	44089	3560	3035	1874.80
Max	203.19	205.28								
Min	159.11	162.2								
cost/gallon								0.679		7.0325
Cost/ton			159.22	467.00	356.74	562.85	63.00		1940.00	
annual chemical cost			153467	15537	37990	18039	16666	29003	35325	65923

total chemical cost $ 371,949

WATER TREATMENT EXPENSES

	2011	2012	2013	2014	2015
Wages	$ 804,666	$ 788,696	$ 717,150	$ 688,792	$ 707,021
Retirement Settlements		$ 160,945			
Benefits	$ 347,446	$ 388,463	$ 329,426	$ 253,925	$ 231,284
Operating	$ 377,501	$ 389,093	$ 351,698	$ 445,237	$ 361,512
Maintenance	$ 219,071	$ 151,475	$ 95,083	$ 151,228	$ 120,859
Utilities	$ 223,104	$ 252,719	$ 225,952	$ 282,724	$ 255,431
Capital	$ 19,257	$ 6,437		$ 50,756	$ 59,045
Other	$ 35,706	$ 95,263	$ 91,654	$ 35,689	$ 84,060
TOTAL	**$ 2,026,751**	**$ 2,233,091**	**$ 1,810,963**	**$ 1,908,351**	**$ 1,819,213**

SUPPLY RESERVOIR EXPENSES

	2011	2012	2013	2014	2015
Wages	$ 45,490	$ 47,580	$ 49,664	$ 50,056	$ 54,539
Retirement Settlements					
Benefits	$ 27,016	$ 32,227	$ 33,212	$ 23,693	$ 23,561
Operating	$ 81,406	$ 115,131	$ 130,931	$ 67,175	$ 79,228
Maintenance	$ 55,590	$ 141,596	$ 57,816	$ 28,314	$ 6,107
Utilities	$ 90,709	$ 94,624	$ 96,982	$ 90,257	$ 99,524
Capital			$ 5,812		
Other	$ 7,005	$ 28,539	$ 12,342	$ 21,852	$ 10,544
TOTAL	**$ 307,216**	**$ 459,697**	**$ 386,759**	**$ 281,347**	**$ 273,503**

H:>Secure>Marina>Water Treatment Expenses, Supply Reservoir Expenses 2011 thru 2015