

Chesterfield Twp. Water and Sewer Rate Advisory Board “WSRAB”

2016 White Paper

Water and Sewer Rate Advisory Board

2016 White Paper

Version 1.2

Chesterfield Twp. Water and Sewer Rate Advisory Board “WSRAB”

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Document Version	Date	Updated by	Description of Changes
Version 1.0	10/16/16	Steve Maul	Formatting changes, added ToC, added PE to the definitions table
Version 1.1	10/17/16	Steve Maul	Updated Org Chart added in the Attachments
Version 1.2	10/25/16	WSRAB input	Various text corrections in the document. Attachment #2 updated

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Abstract

The financial needs and wants of the Chesterfield Water and Sewer Department (CWSD) needed to be examined and understood before the township board passed a twenty two percent increase in water rates for July of 2015. The Engineering firm AEW presented six options to increase the rates during three special meetings in June 2015. The actual increase from DWSD indicated a thirteen point eight percent (13.8%) decrease in commodity rates but an increase in fixed rates.

Base costs used for the six options were questioned but left unanswered during the meetings. Eventually, Supervisor Lovelock chose option six which represented a twenty one point seven percent (21.7%) increase in existing rates to bring before the township board for approval. He also claimed a \$250,000 CWSD monthly operating loss due to the increase from Detroit Water and Sewer Department (DWSD). Interest from a concerned public over the issue led to the formation of the Water and Sewer Rate Advisory Board (WSRAB) comprised of three Township Board members and 13 citizen volunteers.

Initial meetings of the WSRAB considered many options for water delivery to the township, including developing our own municipal water system and/or partnering with Mt. Clemens or New Baltimore. However, these options were found to be too costly to implement, or that available capacity was not available from the other systems. Most importantly, the contract from the DWSD imposed on Chesterfield Township a two million dollar (\$2,000,000) annual penalty for the remaining years of the contract if we chose to leave their water system. In short, there are not any financially sustainable options other than staying in the contract with DWSD.

The increase from DWSD was then considered and how it affected the current rate, the budget, spending, costs, hidden funds/costs, reserves (enterprise fund), facility improvement/replacement plans.

In the past whenever DWSD increased rates, Chesterfield increased their rates to the residents by the same percentage. In other words, the increases were merely passed through to the township residents. However, the CWSD charge for water is about three times that charged to

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them by DWSD resulting in greater increased revenue than needed to cover the increase from DWSD.

The goal of WSRAB was to determine the amount of rate increase to the residents that is appropriate and in line with the rate increases from DWSD and Macomb and advise the full board of our findings.

In November 2015, the Township Board passed an amendment to Ordinance 153 - Water and Sewer rates charges and fees. This amendment changed the fixed charge (RTS) for water and sewer to non-residential customers by a ratio dependent on the size of the meter line. It ranged from 1:1 on a 5/8" line to 70:1 on a 10" line.

Using information supplied by the CWSD, the advisory board determined that there were 17,620 residential meters and 829 non-residential meters. When the meter ratio passed in the Ordinance is applied, it converted to 3,421 equivalent meters giving a total of 21,041 equivalent meters as of April 2016.

The WSRAB determined that the increase from DWSD amounted to approximately \$1,000,000 annually beginning in August 2015. Using the known equivalent meters of 21,041 the WSRAB advised a fixed rate increase of \$12.50 per equivalent meter per billing cycle which would provide \$1,000,000 million per year.

The Township Board authorized this increase in April 2016. However, the CWSD would not/did not change the billing to reflect the increase as proposed by the WSRAB and as called for in the amendment to Ordinance 153. The Township Board has not demanded the CWSD follow the ordinance and is apparently willing to not recover all the costs from the DWSD increase in order to not charge commercial / industrial customers as provided in ordinance 153.

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Systemic Issues Identified

Over the past year that the WSRAB has met and analyzed the costs and operation of the CWSD, a number of systemic issues were noted that should be addressed and resolved to improve operations. Specific issues are discussed later in this white paper.

- The Township board should be more transparent regarding rate increases. Actual increases should be based on facts not wants.
- There should be more focus on controlling and following costs. Consistent use of project request forms to authorize spending is part of this process.
- The Township should include infrastructure replacement costs in the CWSD budget and budgeting process
- Additional limits and controls should be instituted on the Enterprise Fund. The Township has the authority to make these changes as required.
- Explore options to reduce total contract engineering costs to the Township
- Redesign the customer bill to show the costs separately for GLWA rate. This includes:
 - GLWA Water Commodity rate
 - Macomb County Sewer rate
 - Irrigation Water Rate (TBD)
 - RTS Charges (Residential or Industrial/Commercial)
 - CWSD rate (including fixed and variable costs)
 - Bond interest cost
- All township board members need to fully understand and be engaged in CWSD processes and operation *before* they vote on any budget spending items. It appears that some members of the Township Board are not exercising sufficient due diligence.

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Water and Sewer Rates Issues/Recommendations

1. AEW rate increase Option 6 at a 21.7% increase would have generated approximately \$1.7 million more in revenue than the GLWA and Macomb County increases

Recommendation: Analyze/Audit all future commodity and fixed rate increases. Compare the data for the increases from the GLWA/MC, to the method and amount of revenue the increase will generate. Take into consideration the previous year’s audit information for Appropriations, Revenue and the Enterprise Fund balance. *Attachment # 1 has more information on this item.

2. Inconsistent data used to calculate rate increases

Recommendation: All Township water and sewer data used to calculate rate increases should be verified as accurate and consistent by the Township finance department. This includes: Residential, Multi-units, Commercial, Industrial and Government/Municipal as well as the number of users and Equivalent Meter Ratios. The Data should be updated annually for Residential/Non-Residential number of users. The Data and Calculations used should be transparent and available to Chesterfield residents.

3. Current format of Township water bill does not define the cost components of the bill. This includes: commodity rates/RTS fixed rates, debt or depreciation

Recommendation: WSRAB model to revise the current water and sewer bill sent to residents that defines the commodity and fixed rate charges for water and sewer.

Proposed revised water /sewer billing outline. * Attachment #2 contains additional information.

4. Meter Equivalent charge for Non-Residential users is not being enforced. Residents are subsidizing commercial and industrial users. The fixed cost attributed to the maintenance and services required from the Twp. S&W department increases with the size of the meter.

Reference: Recommendation by DPW Superintendent Mr. Coddington to the WSRAB that the 2016 rate increase by a 4.3% flat fee based the on actual number of meters, without the implementation of Meter Equivalents and stating that the implementation of Meter Equivalents “not appropriate at this time”, without explanation. Past years revenue losses are substantial.

Recommendation: Re-submit to the Twp. Board for a motion to implement the Meter Equivalent charge for Non-Residential users or have the Twp. Board state valid reasons for not taking action.

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Enterprise Fund Issues/Recommendations

1. **The Enterprise Fund is a capital fund. The balance of this fund expands or contracts if water and sewer revenues exceed or are less than expenditures. Currently, there is no minimum or maximum dollar value level in place for this fund. Expenditures are made for not only capital and infrastructure replacement also includes Outside Contractual Services that are water and sewer related is charged to this fund.**

Reference: 2015 Planet & Moran Audit page 15, Other Services (\$849,243).

Recommendation: Define a feasible min/max level for the fund and initiate a controlled transparent documented oversight requirement process for all appropriations over \$1,500.00.

2. **The Enterprise Fund is a Capital Fund and millions of dollars are spent annually with little to no Capital or Infrastructure replacement. Currently the Twp. DPW has stated approximately \$4.5 million will be required annually for infrastructure replacement.**

Recommendation: Depreciation is the loss of value/worth from the use/wear of capital and infrastructure and is charged to the water/sewer users in the bills they receive. The amount for annual depreciation should be in dedicated sub fund within the Enterprise Fund used only for the hard replacement of capital and infrastructure.

3. **No oversight or budget process for expenditures**

Recommendation: Initiate an annual budget process for appropriations from the Enterprise Fund to be reviewed and approved by the Twp. Board along with the Water and Sewer Annual Operating Budget.

4. **Pull ahead payments made from the enterprise fund depletes the fund balance and is poor cash flow management**

Recommendation: Expenditures from the fund and revenues received should be coordinated to make payments on time when due while maintaining a max cash flow balance.

Note:

There is no oversight in Michigan Compiled Law for an Enterprise Fund Min/Max level, Budget process or an Appropriation Approval Process. There should not be a Min/Max proposal with a clause to increase or lower rates based on the fund level without the implementation of an Annual Capital Budget and an Appropriation Approval Process to include defining the oversight requirements and amending the Twp. Charter.

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Infrastructure Replacement Issues/Recommendations

1. No plan or budget for replacement for decaying infrastructure prior to 2016

Recommendation: Initiate an annual detailed plan for replacement. Prioritize base on risk of failure, seek Twp. board approval and have a Town Hall meeting for residents.

2. Annual Infrastructure replacement estimated has grown from \$1.6 million to \$4.5 million

Recommendation: Initiate an annual budget process for appropriations for Infrastructure replacement to be reviewed and approved by the Twp. Board along with the Water and Sewer Annual Operating Budget.

Reference: Water and Sewer Departments 2016 Budget Appropriation General Ledger # 591-441-968.000 Depreciation Expense: \$2,300,000

3. Township needs to identify the primary method to fund revenue required for infrastructure replacement. Is it water & sewer rate increase, Enterprise Fund, Bonds?

Recommendation: The initial source of revenue should be the amount of the Budgeted Annual Depreciation. If additional revenue is needed and rate increases or bonds are considered this funding should be controlled to be spent only on designated infrastructure replacement. Currently residential and non-residential users are charged for Depreciation/Replacement in the water and sewage treatment commodity billing charge.

*** See Attachment #3 in back pages.**

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Engineering Issues/Recommendations

- 1. Currently, water and sewer projects are awarded without a RFP, approximately \$500K in contract engineering fees annually. The Twp. DPW department has become dependent on a single source for contract engineering services.**

Recommendation: The current contract with the Twp.’s engineering source is over 20 years old. Consider competitive alternate engineering sources. Update and renegotiate a new contract, the current contract in the last paragraph absolves the current source of certain responsibilities.

- 2. The majority of contract engineering fees are not represented in the Water & Sewer Department annual budget. Currently, they are appropriated from the Enterprise Fund based on the Township Board’s approval to pay invoices submitted.**

Recommendation: All contract engineering expenditures for water and sewer should be allocated in the operation budget or the “New Enterprise Fund Budget”. All engineering expenditures will be approved by the Township. Board prior to the start of any project with RFP’s, with a project definition and a set dollar amount.

- 3. Currently the CWSD is dependent on the current Contract Engineering source and does not have a Professional Engineer (PE) and there is no oversight in place for the quality/quantity of work provided by the current source.**

Recommendation: The Twp. needs to hire a PE for in house projects and to provide oversight for the quality of work and services performed by contractual service vendors.

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Budget Process/Operations Issues/ Recommendations

1. Water & Sewer Dept. Operational costs are increasing approximately 6% annually

Recommendation: Analyze and compare proposed budget to historical data for large percentage element increases. Personnel, medical and legacy costs are major contributors to the budget increase and are not sustainable in the long term without changes. Re-negotiate contracts and consider not exempting twp. employees from Public act 152.

Examples:

- GL 591-542-740.000
- Operating Supplies 2015 \$125K 2016 \$195K increased 36%
- Hire an in house PE to reduce contract engineering costs.

See Attachment # 4 in back pages.

2. Depreciation of Capital/Infrastructure is appropriated in the Water & Sewer Annual Budget and is not utilized annually for replacement of failing infrastructure. Infrastructure replacement has been left up to the sole discretion of the Township DPW Management.

Recommendation: Initiate a Transparent Capital/Infrastructure annual replacement budget.

3. There are no departmental allocations from the Water & Sewer Department to other Township departments for: Management of staff/employees, capital equipment use and depreciation, building/office space, utilities and storm system maintenance that contributes to fixed costs for water and sewer department.

Recommendation: Develop employee organizational charts and job descriptions. Vehicles and Capital Equipment shared with log books. Allocate costs that are currently absorbed by the Water and Sewer department to the other Twp. departments that utilize them. **See Attachment # 5 in back pages.**

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SAW Grant Issues/Recommendations

- 1. Award of a \$2 million dollar project without a RFP or an approved board resolution with a dollar value. No mention to the Township residents of a \$440,000 Township match in funding. The increase in the Residents/Non-Resident sewer rates could be substantial.**

Recommendation: The SAW Grant was initially funded out of the Enterprise Fund, with State funding starting Jan. 1, 2016. Initiate the Budget process and oversight for all Appropriations from the Enterprise Fund.

- 2. SAW Grant Expenditures contributed to the reduction in the Enterprise Fund in 2013, 2014 and 2015. State reimbursement started Jan. 1, 2016**

Recommendation: Initiate the Budget process and oversight for all Appropriations from the Enterprise Fund. This will help explain all contributors to the Enterprise Fund shrinkage.

- 3. Outside source contracted to determine future rate increases for revenue to fund the proposed SAW Grant Project, the project not yet defined and without a cost estimate**

Recommendation: The outside source will use data supplied by the Township DPW/Contract Engineering source to calculate rate increases based on estimates for the selected SAW Grant project.

There should be RFP project bid requirements containing project cost data used in the calculations, not an estimate from the Township Contract Engineering source. The data for user rate increase, consistent with the new water and sewer billing data, verified as accurate and consistent by the Township Finance Department.

Chesterfield residents were invoiced approximately \$9,600 by AEW for an “Outside Source” to calculate the 2015/2016 water and sewer rates. This work product was abandoned when the 21.7% rate increase was challenged and data was made available for the actual DWSD and Macomb County fixed rate increases.

The Data and Calculations used should be transparent and available to Chesterfield residents.

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Attachment # 1: 21.7% Option - Increase overcharge to residents calculations

The total increase from the DWSD and MC was approximately \$1,000,000

2016 Water and Sewer Departments **Projected Budget Revenue** for the sale of water and sewage treatment without rate increases.

Sewer Treatment Sales:	\$7,000,000
Water Sales:	<u>\$5,100,000</u>
Total:	\$12,100,000
	<u>+21.7%</u>
	\$14,725,700
	- <u>\$12,100,000</u>
Increase @ 21.7%:	\$2,625,700
DWSD & MC Increase:	\$1,000,000
Over Charge of:	\$1,625,700

2015 Water and Sewer Departments **Plante & Moran Audit Revenue** for the sale of water and sewage treatment without rate increases.

Sewer Treatment Sales:	\$6,947,878
Water Sales:	<u>\$5,607,130</u>
Total:	\$12,555,008
	<u>+21.7%</u>
	\$15,279,445
	- <u>\$12,555,000</u>
Increase @ 21.7%:	\$2,724,437
DWSD & MC Increase:	\$1,000,000
Over Charge of:	\$1,724,437

Note: Revenues are historically understated in the annual budgets.

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Attachment # 2: Proposed revised Water/Sewer Billing Format

The proposed billing format (below) shows the purchased cost of water and sewage from GLWA and Macomb. The GLWA currently charges \$9.18 Mcf or \$1.23 / 1000 gallons.

The fixed rate charge is \$186,600 / month (\$6220 day) . The GLWA contract costs are based on maximum usage of 12,500,000 gallons per day which is used to determine fixed water costs. Fixed sewage costs from Macomb are currently \$335,000 month (\$11,166/day) for the same usage of 12,500,000 gallon/day. Irrigation Water Cost, RTS Cost, CWSD Costs (fixed and variable) and Bond Interest Cost are also on the bill.

RTS income based on 21,041 current equivalent meters will yield \$2.3 million per year.

GLWA:

Water (commodity); \$1.23 / 1000 gal. x usage (1000 gal. increments) for 90 days =

Water (fixed); \$.49 / 1000 gal. x usage (1000 gal. increments) for 90 days =

MACOMB:

Sewage; \$.90 / 1000 gal. x usage (1000 gal. increments) for 90 days =

Irrigation Water Charges: TBD

RTS:

Residential meters;

\$7.00 water + \$12.50 water + \$8.00 sewer = \$27.50 per residential meter each billing cycle.

Industrial and Government facilities; The pipeline size ratio cited in Ord. 153 cites the multiplier used to determine the equivalent meter number, which is then multiplied by \$27.50 each billing cycle.

CWSD:

Water & Sewer; Quarterly operational cost to deliver water and sewer services based on water usage in 1000 gallon increments.

Quarterly operational cost is based on yearly budget divided by max usage of 12,500,000 gal. per day for 365 days which gives cost per gal x 1000 x usage for billing period.

Bond Interest:

TBD; shared by equivalent meters or by water usage.

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Attachment # 3: Infrastructure Replacement Funding Sources

AEW Option Rate Increase Table: Water and Sewer Commodity Charge for 2015 with a -5.8% reduction.

No current values for 2014 that were requested by the WSRAB were provided.

Assumption: The current values that Residential and Non-Residential users are paying are 5.8% higher in the current billing rate for water at \$3.80 and \$5.88 for sewage treatment.

Water Commodity Charge for Depreciation $\$0.8458 + 5.8\% = \0.8948

Sewage Commodity Charge for Depreciation $\$1.0693 + 5.8\% = \1.1313

Water and Sewer combined billing charge for Depreciation/Replacement of: \$2.0261 Per 1000 gal.

	2014	2015	
Water Commodity Charge - Per 1000 gal			
Chesterfield Admin. & Fixed Overhead (Not in RTS Charge)		\$0.3817	
Chesterfield Operations & Maintenance		\$0.5929	
Capital Improvements - Non Bonded		\$1.2974	
Township Debt Service (Not in Debt Service Charge)		\$0.1228	
Depreciation/Replacement		\$0.8458	
Miscellaneous Revenue		-\$0.4444	
DWSD Water Commodity		\$0.9870	
DWSD Fixed Charge (Not in RTS Charge)		\$0.9565	
Miscellaneous Adjustments		-\$1.1596	
Total Commodity Water	\$3.80	\$3.58	-5.8%
Sewer Commodity Charge - Per 1000 gal			
Chesterfield Admin. & Fixed Overhead (Not in RTS Charge)		\$0.3282	
Chesterfield Operations & Maintenance		\$0.6788	
Capital Improvements - Non Bonded		\$0.5449	
Township Debt Service (Not in Debt Service Charge)		\$0.3144	
Depreciation/Replacement		\$1.0693	
Miscellaneous Revenue		-\$0.7118	
DWSD Fixed Charge (Not in RTS Charge)		\$1.2310	
OMIDD Fixed Charge (Not in RTS Charge)		\$0.0289	
OMIDD Debt Service (Not in Debt Service Charge)		\$0.4553	
MCWDD Fixed Charge (Not in RTS Charge)		\$0.2189	
MCWDD Debt Service (Not in Debt Service Charge)		\$1.2068	
Miscellaneous Adjustments		\$0.1753	
Total Commodity Sewer	\$5.88	\$5.54	-5.8%

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Attachment # 4: CWSD Operational Costs by Year (2014-2016)

2014 Expenditures:		2015 Expenditures:			2016 Expenditures:				
Water	Superintendent	80,000	Superintendent	87,000	9%	Water	Superintendent	93,004	6%
		0	Assistant/Deputy	70,900	100%		Assistant/Deputy	73,867	4%
	Operations	839,330	Operations	908,240	8%		Operations	931,507	2%
	Administrative Staffing	179,300	Administrative Staffing	171,020	-5%		Administrative Staffing	178,932	4%
	Part -time/Temp/Per Diem	3,600	Part -time/Temp/Per Diem	3,600	0%		Part -time/Temp/Per Diem	4,800	25%
	Maintenance/Standby	10,400	Maintenance/Standby	11,700	13%		Maintenance/Standby	11,700	0%
	Overtime	10,000	Overtime	40,000	300%		Overtime	40,000	0%
	Longevity Pay	70,640	Longevity Pay	75,760	7%		Longevity Pay	71,441	-6%
	Education Pay/Certs/Licenses	7,700	Education Pay/Certs/Licenses	7,700	0%		Education Pay/Certs/Licenses	9,350	18%
	Workers Compensation	48,530	Workers Compensation	43,330	-11%		Workers Compensation	51,379	16%
	Employer Fica/Medicare	98,990	Employer Fica/Medicare	110,760	12%		Employer Fica/Medicare	113,730	3%
	Medical Insurance	331,230	Medical Insurance	422,450	28%		Medical Insurance	526,455	20%
	Life/Disability Insurance	6,200	Life/Disability Insurance	6,700	8%		Life/Disability Insurance	13,637	51%
	Pension Contribution	167,970	Pension Contribution	175,000	4%		Pension Contribution	178,823	2%
	Accrued Sick/Vacation Pay	74,000	Accrued Sick/Vacation Pay	72,000	-3%		Accrued Sick/Vacation Pay	72,000	0%
	OPEB-Designation	233,420	OPEB-Designation	263,130	13%		OPEB-Designation	159,600	-65%
	Office Supplies	5,500	Office Supplies	6,000	9%		Office Supplies	6,000	0%
	Operating Supplies	50,000	Operating Supplies	50,000	0%		Operating Supplies	55,000	9%
	Uniforms	9,000	Uniforms	9,000	0%		Uniforms	10,000	10%
	Contractual Services	5,000	Contractual Services	5,000	0%		Contractual Services	8,000	38%
	Audit Fees	16,000	Audit Fees	16,000	0%		Audit Fees	16,425	3%
	General Administration	260,320	General Administration	195,650	-25%		General Administration	211,270	7%
	Engineering Fees	80,000	Engineering Fees	80,000	0%		Engineering Fees	100,000	20%
	Legal Expenses	15,000	Legal Expenses	15,000	0%		Legal Expenses	15,000	0%
	Dues & Memberships	13,000	Dues & Memberships	15,000	15%		Dues & Memberships	15,000	0%
	Dispatch Services	8,000	Dispatch Services	10,000	25%		Dispatch Services	20,000	50%
	Telephone	20,000	Telephone	25,000	25%		Telephone	35,000	29%
	Vehicle Repair & Maintenance	70,000	Vehicle Repair & Maintenance	70,000	0%		Vehicle Repair & Maintenance	70,000	0%
	Gas Pump Repairs	2,000	Gas Pump Repairs	2,000	0%		Gas Pump Repairs	2,000	0%
	Travel, Training, Schl & Conf	2,000	Travel, Training, Schl & Conf	2,000	0%		Travel, Training, Schl & Conf	5,000	60%
	Printing & Publications	20,000	Printing & Publications	20,000	0%		Printing & Publications	20,000	0%
	General Insurance & Bonds	63,000	General Insurance & Bonds	63,000	0%		General Insurance & Bonds	75,000	16%
	Utilities	60,000	Utilities	50,000	-17%		Utilities	50,000	0%
	Building & Grounds Maintenance	20,000	Building & Grounds Maintenance	20,000	0%		Building & Grounds Maintenance	20,000	0%
	Road Repairs	10,000	Road Repairs	10,000	0%		Road Repairs	10,000	0%
	Off Equip/Computer Rpair/Maint	20,000	Off Equip/Computer Rpair/Maint	20,000	0%		Off Equip/Computer Rpair/Maint	20,000	0%
	Retals & Leases	5,000	Retals & Leases	5,000	0%		Retals & Leases	5,000	0%
	Computer Usage & Maintenance	6,500	Computer Usage & Maintenance	6,500	0%		Computer Usage & Maintenance	6,500	0%
Sewer	Miscellaneous	8,000	Miscellaneous	10,000	25%	Sewer	Miscellaneous	10,000	0%
	Operating Supplies	10,000	Operating Supplies	10,000	0%		Operating Supplies	10,000	0%
	Contractual Services	10,000	Contractual Services	10,000	0%		Contractual Services	10,000	0%
	Municipal Pumping	40,000	Municipal Pumping	25,000	-38%		Municipal Pumping	25,000	0%
	Equipment Repair & Maintenance	50,000	Equipment Repair & Maintenance	50,000	0%		Equipment Repair & Maintenance	50,000	0%
	Sewer Easements	1,500	Sewer Easements	1,500	0%		Sewer Easements	1,500	0%
Water	Operating Supplies	100,000	Operating Supplies	125,000	25%	Water	Operating Supplies	195,000	36%
	Contractual Services	10,000	Contractual Services	10,000	0%		Contractual Services	10,000	0%
	Equipment Repair & Maintenance	20,000	Equipment Repair & Maintenance	25,000	25%		Equipment Repair & Maintenance	25,000	0%
		3,171,130		3,430,940				3,641,920	6%
			Increase from 2014	259,810	8.2%				
	2013 Operating Cost	2,958,836	Increase from 2013	472,104	16.0%		Increase from 2013	18.8%	
		3,430,940						683,084	

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Abbreviations, Acronyms and Definitions:

AEW: Anderson, Eckstein, and Westrick : Chesterfield Twp. single contract engineering source.

AWWA: The American Water Works Association Established in 1881 is the largest nonprofit, scientific and educational association dedicated to managing and treating of water and water and waste systems.

Municipal Bonds: A municipal bond is a debt security issued by a state, municipality or county to finance its capital expenditures, including the construction of highways, bridges or schools, water and sewage infrastructure.

Capital Improvements: A capital improvement is the addition of a permanent structural change or the restoration of some aspect of a property that will either enhance the property's overall value, increases its useful life or adapts it to a new use.

Commodity: A reasonably interchangeable good or material (Water and Sewage Treatment) bought and sold freely as an article of commerce.

Commodity Rate: Is associated with the purchase of a commodity (Water and Sewage Treatment). These commodities are priced to residents based on a unit of 1,000 gals.

CWSD: The Chesterfield Water and Sewer Department.

Debt Service: The annual amount due for bond payments, to include interest.

Depreciation: Is a reduction in the value of an asset with the passage of time, due in particular to wear and tear.

Depreciation/Replacement: Element (Cost) added to the commodity rate for water and sewage treatment charged to residents.

DWSD: The Detroit Water and Sewer Department.

Enterprise Fund: Is an accounting system emphasizing accountability rather than profitability, used by non-profit organizations, governments and municipalities for business operations.

Fixed Cost: A fixed cost is a cost that does not change with an increase or decrease in the amount of goods or services produced or sold (GLWA and MC monthly fixed cost). Fixed costs are expenses that have to be paid by a company, independent of any business activity. The allocation of Fixed Cost can be factored into the price of the projected volume of a commodity, a stand-alone element on the invoice or both to recover the fixed cost expense.

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GLWA: Great Lakes Regional Water Authority has taken over management of the Detroit Water and Sewer Department and provides water and sewer services for the Southeast Michigan.

Infrastructure: Infrastructure is the basic facilities and installations that help a government or community run, including roads, schools, phone lines, water and sewage.

MC: Macomb County Public Works: Provides Wastewater management and treatment.

Mcf: 1,000 cubic feet: The unit size billed to Chesterfield for water from the GLWA. $1,000 \text{ Mcf} \times (7.48 \text{ Conversion Factor}) = 7,480 \text{ gals.}$

ME: Meter Equivalents: Factors/Ratios for sizing water meters and determining certain fees, following the American Water Works Associations EQUIVALENT FACTOR SCHEDULE.

PE: Professional Engineer

RTS: Readiness to Serve Charge: Charge to residents for Water and Sewer Department Cost of Operation and Fixed Overhead.

SAW Grant: A Michigan Department of Environmental Quality grant for \$1,860,000 with a required Chesterfield Twp. match of \$400,000 total amount \$2,286,000. For a Wastewater Asset Management Plan and does not include any new or replacement of infrastructure.

WSRAB: Chesterfield Twp. Water and Sewer Rate Advisory Board formed to research/analyze cost and revenues to accurately, with fairness and equality recommend water and sewer rate increases to the Twp. Board.