



REPORT

LEGISLATIVE REFERENCE BUREAU

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25. DPW—Sewer Maintenance Fund, 2015

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25. Sewer Maintenance Fund

\$103,985,490

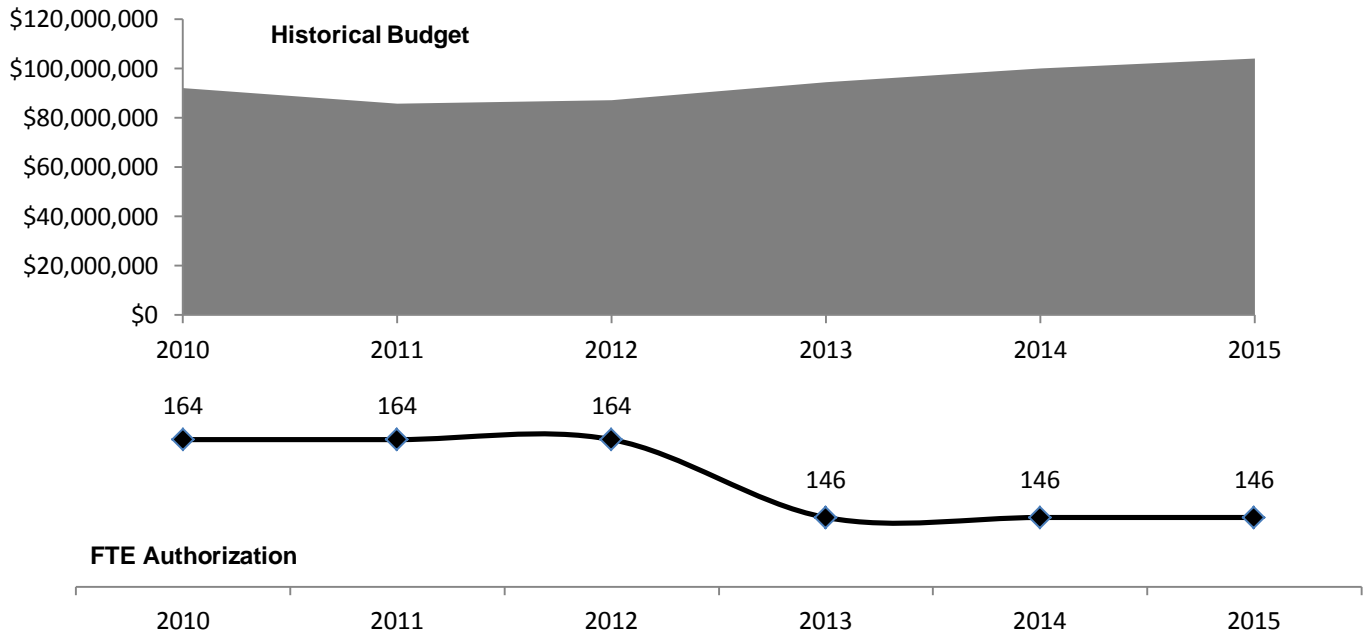
Proposed Department Budget

\$4,019,293

Nominal Change in Proposed Department Budget

4.02%

Percent Change in Proposed Department Budget



0.0%

Percent Change in Authorized Positions 2014 to 2015 Proposed

0

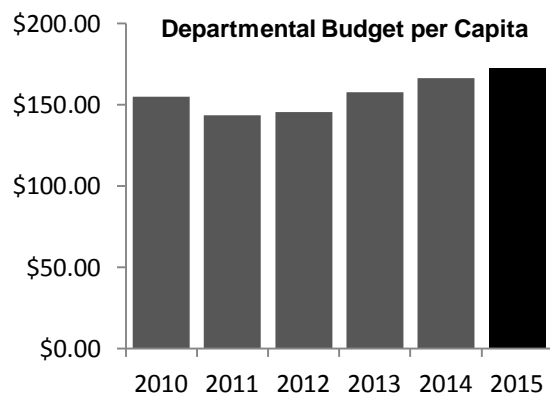
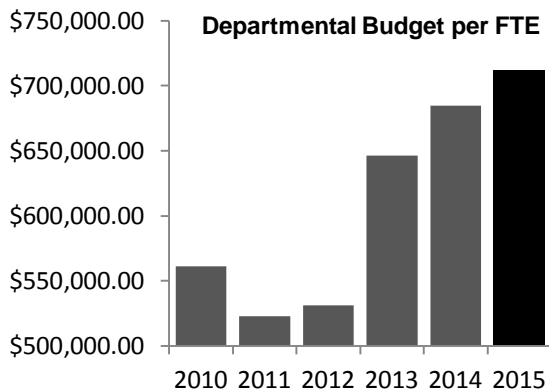
Nominal Change in Authorized Positions 2014 to 2015 Proposed

19

Vacant Positions

60%

% Eligible for Retirement within 10 years



2.44

2015 projected year-end Debt Coverage Ratio indicating strong debt repayment capacity.

\$1,750,000

To disconnect foundation drains and provide sump pumps for 50 homes in the Coopers Park area.

3.2

2015 projected year-end Current Ratio indicating strong liquidity.

\$1,875,071

Projected 2015 increase in Debt Service – up 8.44%.

47%

Infiltration & Inflow reduction when private sewer laterals were repaired after replacing or relining area mains.

\$2,313,564

Projected 2015 Loss on Sewer operations. \$884,498 projected loss in 2014. Both losses funded by drawdowns of cash.

300

Private sewer laterals repaired in Clemens School area in conjunction with area main replacement or relining.

\$33,921,000

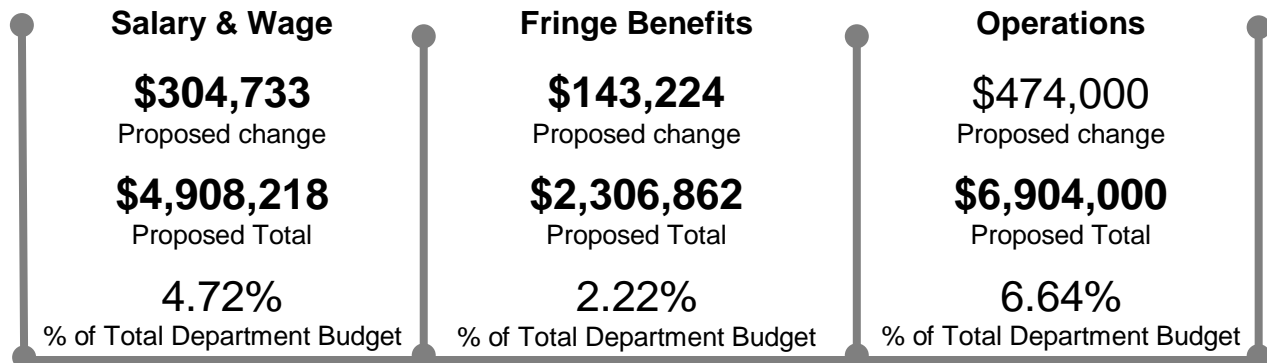
The amount of a 23.2% increase in 2013 actual year-end Bond Debt from actual 2012.

\$206,000

Projected savings by Sewer operating its own equipment rather than depending on DPW-Fleet operators.

\$180,159,000

Actual Year-end 2013 Bond Debt.



I. INITIATIVES AND PROGRAMS.

1. Projected 2015 Losses on Sewer Operations.

The Sewer Maintenance Fund is projected to lose \$2.3 million on operations in 2015 despite proposed increases in both the Sewer Maintenance and Stormwater Management Fees. This comes following of a projected 2014 loss of \$884,498. Ultimately, these losses will be borne by a drawdown of cash reserves. Actual 2013 cash reserves were a financially healthy \$25.3 million, and LRB projects continued financial vitality despite projected cash reserve reductions in 2014 and 2015 due to Sewer's projected losses. LRB projects cash reserves of \$24.4 million in 2014 and \$22.1 million in 2015.

2. Reliance on Debt Financing and Continued Financial Vitality.

Sewer relies almost exclusively on debt to finance its capital improvements, borrowing 93% of its capital needs over the last 5 years, with just over 5% financed with cash and the remaining 2% coming from grants as indicated in Table 25.10.

Year-end 2013 Sewer bond debt (General Obligation, Revenue Bonds and State Loans) was \$180.2 million on a Net Position (Equity) of \$261.6 million.

Mindful of the importance of financial vitality to both access to the bond market and Sewer's ability to make transfers to the City's General and Capital Funds, LRB provides 2 ratios analyzing the utility's debt load, and 2 concerning its overall liquidity. The results of this 4-ratio analysis are somewhat mixed, but the overall picture suggests a financially vital City utility.

Sewer's Bond Debt Ratio (Table 25.1), a measure of the utility's financial leverage, is somewhat high. As a capital intensive operation with 40% to 50% of its total annual expenditures for capital improvements, Sewer is expected to have a fairly high debt ratio. However, benchmarks for sewerage operations tend to be closer to Sewer's 0.58 2012 debt ratio, so the actual increase to 0.69 in 2013 and LRB's projected climb in 2014 to 0.77 and 0.85 in 2015 on debt of \$220.4 million is of mild concern.

Table 25.1. Sewer's Debt Ratio.

Year	Bond Debt	Equity (Net Position)	Debt Ratio
2010	\$179,436,000	\$236,399,000	0.76
2011	\$195,395,000	\$243,508,000	0.80
2012	\$146,238,000	\$252,757,000	0.58
2013	\$180,159,000	\$261,581,000	0.69
2014	\$200,816,308 *	\$260,696,502 *	0.77
2015	\$220,681,081 *	\$258,382,938 *	0.85

* Estimated by Legislative Reference Bureau

It should be noted, while Sewer's use of Extendable Municipal Commercial Paper (EMCP) is included as a current liability on its 2012 and 2013 Comprehensive Annual Financial Report (\$67 million and \$44 million respectively), EMCP debt is excluded from Sewer's debt ratio calculation.

Sewer's Debt Coverage Ratio (Table 25.2), a measure the utility's capacity to make its annual debt service payments, is strong at 3.63 for 2013, indicating the utility generated \$3.63 in operating profits (after other expenses) for every \$1.00 needed for debt repayment. Although LRB's projects small declines in Sewer's Debt Coverage Ratio in 2014 and 2015, the utility will be earning more than \$2 for every \$1 needed for debt service payments.

Table 25.2. Sewer's Debt Coverage Ratio.

Year	Bond Debt	Operating Income	Debt Coverage
2010	\$179,436,000	\$31,623,536	2.51 ^a
2011	\$195,395,000	\$37,531,537	2.69 ^a
2012	\$146,238,000	\$40,942,796	3.19
2013	\$180,159,000	\$41,372,359	3.63
2014	\$200,816,308 ^b	\$36,381,886 ^b	2.35
2015	\$220,681,081 ^b	\$37,808,891 ^b	2.44

a. CAFR Projected Bond Debt Service

b. Estimated by Legislative Reference Bureau

Sewer's Current Ratio (Table 25.3), a measure of the utility's overall liquidity, is strong, indicating the utility's general financial vitality. It should be noted, however, \$67 million in EMCP in 2012 and \$44 million in 2013 (listed as current liabilities) were excluded from this current ratio calculation. LRB estimates that even including the current portion of the long-term bond which eventually would replace these EMCP obligations, the current ratios for 2012 and 2013 would still be above 3.0.

Sewer's Days in Receivables (Table 25.4), a measure how long it takes collect the utility's fees after service are provided, is also high, given Sewer's billing practices. While, slow collections can sometimes cause cash binds and force short-term borrowing to fund day-to-day operations, Sewer's healthy cash reserve, and the fact collections appear to be chronically over 100 days, suggests no reason for concern.

Table 25.3. Sewer's Current Ratio.

Year	Net Fund Change	Transfers to General Fund	Cash Reserves	Current Ratio
2010	\$6,838,294	\$12,190,000	\$19,655,000	3.0
2011	\$10,859,013	\$12,734,075	\$17,646,000	2.6
2012	\$15,974,557	\$12,140,000	\$23,765,000	3.7
2013	\$15,524,540	\$14,437,000	\$25,328,000	3.4
2014	(\$884,498) *	\$15,059,000	\$24,443,502 *	3.3 *
2015	(\$2,313,564) *	\$16,040,000	\$22,129,938 *	3.2 *

* Estimated by Legislative Reference Bureau

Table 25.4. Sewer's Days in Receivables.

Year	Receivables	Maintenance & Stormwater Fees	Days in Receivables
2010	\$16,342,858	\$58,428,955	102.09
2011	\$15,756,355	\$55,940,548	102.81
2012	\$15,692,000	\$55,604,667	103.01
2013	\$15,631,000	\$53,289,450	107.06
2014	\$15,508,000 *	\$50,013,883 *	113.18
2015	\$15,816,000 *	\$50,214,392 *	114.96

* Estimated by Legislative Reference Bureau

3. Infiltration and Inflow project preliminary results.

Flow meters in the Coopers Park area of the city, where Sewer replaced or relined sewer mains and used MMSD grant funds to repair private sewer laterals at 526 homes, indicate a 47% reduction in I&I during 2013. Flows are currently being monitored for 2014.

Sewer plans to use its \$1.75 million MMSD grant in 2015 (year 7 of MMSD's 10-year, \$50 million grant commitment) to disconnect foundation drains and provide sump pumps for 50 homes in the Coopers Park area, roughly N. 86th Street between Center and Chambers Streets.

In 2014, Sewer used MMSD funding to repair private sewer laterals for 300 houses in the Clemens School area. Samuel Clemens High School is located at 3600 W. Good Hope Road.

See also CAPITAL PROJECTS, Section VI.

II. EXPENDITURES.**Table 25.5. Changes in Operating Budget Expenditures by Account.**

Expenditure Account	2013 Actual	2014 Adopted Budget	% Change	2015 Proposed Budget	% Change
Salaries and Wages	\$4,303,046	\$4,603,485	6.98%	\$4,908,218	6.62%
Fringe Benefits	\$1,967,954	\$2,163,638	9.94%	\$2,306,862	6.62%
Operating Expenditures	\$6,984,734	\$6,430,000	-7.94%	\$6,904,000	7.37%
Equipment Purchases	\$6,916	\$460,000	6551.24%	\$730,000	58.70%
Special Funds	\$30,005,730	\$41,759,074	39.17%	\$44,936,410	7.61%
Total Operating Budget	\$43,268,380	\$55,416,197	28.08%	\$59,785,490	7.88%

1. Operating Budget Summary.

Sewer makes significant Capital Budget expenditures in addition to its Operating Budget as noted at the end of this section.

The total 2015 \$59,785,490 Proposed Operating Budget is up \$4,369,293, or 7.88%, over 2014's Adopted Budget of \$55,416,197, which in turn is a \$12,147,817, or 28.08%, increase over 2013 actual spending. Most significant in the 2015 proposed increase is more than \$3 million in Special Funds spending.

2. Special Funds.

Special Funds expenditures are up \$3,177,336, or 7.61%. Roughly \$1.3 million of this increase stems from a nearly \$1 million increase in transfers to the General Fund and a \$320,000 increase in transfers to the Capital Fund to finance the City's Emerald Ash Borer Readiness and Response program. Transfers to the General Fund finance all tree care costs and pension payments associated with street-sweeping, leaf collection, brush collection, pruning, and include \$40,000 to fund the Health Department's Beach Water Quality and Advisory program.

Transfers to the General and Capital Funds are mainly driven by overall City policy, and are by in large outside the control of the utility.

Nearly all the remaining \$1.8 million increase is the result of additional Debt Service costs, highlighting Sewer's reliance on debt financing of capital improvements discussed above in the INITIATIVES AND PROGRAMS, SECTION I.

A breakdown of Special Funds spending is found in Table 25.6.

Table 25.6. Special Funds Budget Expenditures.

Special Funds	2013 Actual	2014 Adopted Budget	% Change	2015 Proposed Budget	% Change
Water Administration	\$423,000	\$427,735	1.12%	\$429,000	0.30%
Debt Service – Rev. Bonds	\$5,183,019	\$15,423,000	197.57%	\$18,126,129	17.53%
Payment to General Fund	\$14,437,000	\$15,059,000	4.31%	\$16,040,000	6.51%
Payment to Capital Fund	\$2,872,000	\$2,685,000	-6.51%	\$3,005,000	11.92%
Payment to G.O. Debt	\$6,227,800	\$6,784,384	8.94%	\$5,956,326	-12.21%
Tower Facility Lease	\$844,000	\$844,000	0.00%	\$844,000	0%
Pension Contribution	\$0	\$495,955	N/A	\$495,955	0%
Channel Maintenance	\$18,911	\$40,000	111.52%	\$40,000	0%
Total Special Funds Budget	\$30,005,730	\$41,759,074	39.17%	\$44,936,410	7.61%

3. Personnel Costs.

Total personnel costs are up \$447,957 (6.62%) while Salary and Wages are up \$304,733 (6.62%) and Fringe Benefits are up \$143,224 (6.62%). Changes, including the cost of eliminating furlough days, 1.79% net pay raises and \$50,000 for additional overtime, are detailed in Table 25.7.

Table 25.7. Payroll Cost Changes for 2015.

Category	Change
Reclassified Environmental Engineer as Engineer in Charge	\$1,730
Retirement of Services District Manager - New Hire at Lower Rate	(\$15,111)
1.79% Net Salary Rate Increases	\$90,883
Sub-Total Changes	\$77,502
Payroll Adjustments	
Overtime	\$50,000
Personnel Cost Adj	(\$1,550)
Furlough	\$63,575
Capital Services Deduction	\$115,206
Total Payroll Adjustments	\$227,231
Total Salary Changes & Adj	\$304,733
Fringe Benefits	\$143,224
Total Changes	\$447,957

4. Operating Expenditures.

Operating Expenditures are up \$474,000 (7.37%). A breakdown of Operating Expenditures changes proposed in the 2015 Budget is found in Table 25.8.

Table 25.8. Changes in Operating Expenditures for 2015.

Category	Change	Percent
Construction Supplies	\$100,000	16.67%
Energy	\$6,000	13.33%
Vehicle Rental	(\$206,000)	-9.78%
Non-Vehicle Equipment Rental	\$1,000	2.00%
Professional Services	\$105,000	77.78%
Other Operating Services	\$48,000	58.54%
Reimburse Other Departments	\$420,000	21.99%
Total	\$474,000	7.37%

Vehicle Rental down \$206,000: Sewer expects to save \$206,000 by operating its own sewer jet/vacuum equipment rather than relying on DPW-Fleet Services operators as in the past. This is part of a program begun in 2012, and made possible by Act 10, for Sewer to operate its own equipment rather than rely on DPW-Fleet Services operators. Reliance on DPW-Fleet operators

at times delayed sewer work projects, or created scheduling difficulties when DPW-Fleet operators were unavailable.

Construction Supplies and Energy combined up \$106,000: Increase due to price increases for commodities and energy.

Reimburse Other Departments and Other Operating Services combined up \$468,000: Increase is to match projections with historic actual material disposal costs and charges from other City departments for services associated with sewer work.

Professional Services up \$105,000: Increase due to additional costs to operate River Skimmer, to provide stormwater management information and education and the root treatment program.

5. Equipment Purchases.

Equipment Purchases are up \$270,000 (58.7%). Proposed equipment purchases for 2015 include a small dump truck (\$125,000), and excavator (\$120,000) and 19 computer workstations (\$36,000) deemed by ITMD as passed their useful lives and no longer supported by service contracts. This total (\$281,000) is offset by a \$10,000 reduction in radio purchases and \$1,000 saving on computer monitor purchases.

6. Capital Budget.

Sewer makes significant capital expenditures in addition to its Operating Budget as noted in Table 25.9.

Table 25.9. Capital Budget as percent of Operating Budget.

Year	Operating Budget	Capital Budget	%	Total
2010	\$43,993,920	\$41,172,721	48.3%	\$85,166,641
2011	\$43,396,115	\$31,433,967	42.0%	\$74,830,082
2012	\$42,455,765	\$28,667,909	40.3%	\$71,123,674
2013	\$43,268,380	\$35,597,805	45.1%	\$78,866,185
2014	\$55,416,197	\$44,550,000	44.6%	\$99,966,197
2015	\$59,785,490	\$44,200,000	42.5%	\$103,985,490

Sewer relies almost exclusively on debt to finance its capital improvements, borrowing 93% of its capital needs over the last 5 years, with just over 5% financed with cash and the remaining 2% coming from grants as indicated in Table 25.10.

Table 25.10. Capital Budget Financing.

	2011	2012	2013	2014	2015
TL Capital Improvements	\$32,059,755	\$28,961,798	\$35,702,196	\$45,850,000	\$48,250,000
Financing					
Debt	\$29,019,650	\$28,667,909	\$34,809,140	\$39,500,000	\$39,650,000
Grants & Aids	\$106,302	\$0	\$0	\$1,650,000	\$1,650,000
Cash	\$2,308,015	\$0	\$788,665	\$3,400,000	\$2,900,000
Total Financing	\$31,433,967	\$28,667,909	\$35,597,805	\$44,550,000	\$44,200,000

Nearly 75% of Sewer's proposed 2015 Capital Budget, \$32,800, will be used to replace 20 miles of sewer mains and reline 12 miles.

See CAPITAL PROJECTS, Section VI for details on Sewer's capital spending.

III. PERSONNEL.

Table 25.11. Changes in Full-Time Equivalent (FTE) and Authorized Positions.

Position Category	2013 Actual	2014 Adopted Budget	Change	2015 Proposed Budget	Change
O&M FTEs	91.12	100.05	8.93	103.05	3.00
Non-O&M FTEs	8.61	14.95	6.34	11.95	(3.00)
Total Authorized Positions	146	146	0	146	0.00

1. Personnel Changes.

The total number of authorized positions in the department under the 2015 Proposed Budget is 146, the same as the 2014 Adopted Budget. See Table 25.7 for a position reclassification and a retirement/new hire.

2. Vacancies.

There are currently 19 vacant positions in the department totaling an estimated \$791,695 in salaries. Twelve of these vacancies are expected to be filled this year, and one is in the process of being filled. Of the remaining 6, the utility's older vacancies, 5 are being evaluated for reclassification or possible duty consolidation, and one will only be filled if funding for Infiltration & Inflow remediation on private property is received. Vacancies are summarized in Table 25.12.

Table 25.12. Summary of Vacant Positions, 2015.

POS.	Position	Est. Salary	Date Vacated	Plans to Fill
1	Civil Engineer III	\$76,041	January, 2012	Possible Reclasp to Civil Eng. II
1	Civil Engineer II	\$57,475	October, 2012	Processing to Fill
1	Civil Engineer II	\$57,475	October, 2012	Dependent on private property I & I program development
1	Office Assistant II	\$25,652	July, 2012	Possible consolidation
6	Sewer Laborer II	\$214,647	Late 2013 & 2014	Fill in 2014
5	Sewer Laborer I	\$161,508		Fill in 2014 with City seasonal workers
1	Sewer Operations Supervisor	\$54,561	2014	Fill in 2014
2	Sewer Crew Leader II	\$88,190	2013	Possible Reclasp to Crew Leader I
1	Electrical Mechanic.	\$56,148	2010	Possible Reclassification
19	Total	\$791,695		

IV. SPECIAL PURPOSE ACCOUNTS (SPA).

None.

V. REVENUES.

The Proposed Budget estimates Sewer will generate \$103,985,490 in revenue and other funding during 2015, an increase of \$4,019,293, or 4.02% over 2014's Adopted Budget of \$99,966,197. A revenue increase of \$2,540,227, or 4.39%, principally due to increases in Sewer Maintenance and Stormwater fees, makes up 63% of the overall funding increase. The remaining 47% stems from a \$1.4 million increased drawdown of retained earnings, and a net increase in borrowing over decreases in developer provided financing. This drawdown of retained earnings indicates that despite fee increases, Sewer will lose \$2.3 million on operations in 2015, after budgeting to lose \$884,498 in 2014.

Table 25.13 summarizes Sewer's projected revenues and other funding compared to actual 2013 results.

Table 25.13. Changes in Revenue by Category.

Funding Category	2013 Actual	2014 Adopted Budget	% Change	2015 Estimated	% Change
Revenues					
Sewer Maintenance Fee	\$29,399,780	\$28,934,192	-1.58%	\$29,802,218	3.00%
Stormwater Mgmt. Fee	\$26,204,887	\$27,006,356	3.06%	\$28,626,737	6.00%
Charges for Service	\$1,665,534	\$1,727,338	3.71%	\$1,779,158	3.00%
Interest	\$29,610	\$163,813	453.24%	\$163,813	0.00%
Miscellaneous	\$1,490,097	\$0	-100.00%	\$0	N/A
Total Revenues	\$58,789,908	\$57,831,699	-1.63%	\$60,371,926	4.39%
Other Funding Sources					
Proceeds from Borrowing	\$35,597,805	\$39,500,000	10.96%	\$39,650,000	0.38%
Retained Earnings	\$0	\$884,498	N/A	\$2,313,564	161.57%
Grant and Aid	\$0	\$1,650,000	N/A	\$1,650,000	0.00%
Assessable	\$0	\$0	N/A	\$0	N/A
Developer Financed	\$3,012	\$100,000	3,220.05%	\$0	-100.00%
Total Other Funding Sources	\$35,600,817	\$42,134,498	18.35%	\$43,613,564	3.51%
Total Funding	\$94,390,725	\$99,966,197	5.91%	\$103,985,490	4.02%

1. Sewer Maintenance and Stormwater Management Fees

The 2015 Proposed Budget increases the Sewer Maintenance Fee, the charge assessed on properties for use of the local sanitary sewer, 2.99% to \$1.38 per 100 cubic feet of water used (CCF) from \$1.34 in 2014. The increase is expected to increase the typical residential fee by \$2.70 to \$93.27 in 2015.

The 2015 Proposed Budget also increases the Stormwater Management Fee by 6.02% to \$17.96 per quarter per Equivalent Residential Unit (ERU) or \$71.84 annually, an increase of \$4.08 from the 2014 annual charge of \$67.76.

As noted in the introduction to this section and the INITIATIVES AND PROGRAMS, SECTION I, Sewer is projected to lose \$2.3 million on operations in 2015 despite these proposed fee increases.

Table 25.14 summarizes recent increases in Sewer Maintenance and Stormwater Management Fees.

Table 25.14. Sewer Maintenance and Stormwater Management Fee Increases.

Budget	Maintenance		Stormwater	
2015 Proposed	\$1.38	2.99%	\$17.96	6.02%
2014	\$1.34	3.88%	\$16.94	5.02%
2013	\$1.29	4.88%	\$16.13	7.97%
2012	\$1.23	6.03%	\$14.94	5.06%
2011	\$1.16	0.00%	\$14.22	1.57%
2010	\$1.16		\$14.00	

VI. CAPITAL PROJECTS.

The 2015 Proposed Budget includes \$44.2 million in funding for 6 capital projects, a decrease of \$350,000 (0.8%) from the 2014 Budget. The sewer main program decreases by \$1.1 million and the Inflow & Infiltration (I&I) program decreases by \$2.0 million. The reductions in these programs are largely offset by the addition of \$2.75 million a new flood mitigation project. Capital projects for 2015 are summarized in Table 25.15 and the discussion that follows.

Funding for the City's sewer system has increased significantly in recent years. In addition to replacing and relining sewer mains, the City is using a more diversified approach to improve the performance of the sewer system. Strategies include reducing the amount of clear water that enters the sewer system, constructing bio-swales to help manage storm water runoff and restoring capacity to various channels and drainage ditches.

The City anticipates issuing \$39.65 million of debt to support improvements to the sewer system; \$30.8 million for the Sewer Main program, \$5 million for the I&I program, \$1.1 million for water quality projects and \$2.75 million for flood mitigation. The remainder of the capital program will be funded with revenues collected from the Sewer Maintenance and the Storm Water Management fees. The City also anticipates receiving \$1.65 million in grant funding from MMSD for the private property I&I program.

Table 25.15. Capital Program Summary, 2015.

Program	2015 Proposed Budget	2014 Actual Budget	Increase (decrease)	% Chng.	6-year Request
Sewer Relief & Relay Program	\$32,800,000	\$33,900,000	(\$1,100,000)	-3.2%	\$194,000,000
Water Quality for TMDLs (BMPs for TSS Reduction)	\$1,100,000	\$1,000,000	\$100,000	10%	\$3,500,000
Pump Facility Projects	\$700,000	\$700,000	\$0	0%	\$4,200,000
River Channel Maintenance	\$200,000	\$200,000	\$0	0%	\$1,200,000
I&I Reduction Projects	\$6,650,000	\$8,650,000	(\$2,000,000)	-23.1%	\$50,800,000
Flood Mitigation	\$2,750,000	\$0	\$2,750,000	----	\$2,500,000
Developer Out of Program	\$0	\$100,000	(\$100,000)	-100%	\$0
Total	\$44,200,000	\$44,550,000	(\$350,000)	-0.8%	\$256,200,000

1. Currently-Funded Projects.

Sewer Relief and Relay Program, \$32,800,000.

This on-going program provides funding for the replacement and rehabilitation of the City's sanitary, storm and combined sewer main and other miscellaneous repairs. The 2015 Proposed Budget provides \$32.8 million to replace and reline sewers, a decrease of \$1.1 million (3.2%) from 2014. The replacement cycle based on current funding is between 65 and 70 years. The replacement cycle in 2010 was approximately 160 years.

Although funding has been trending upward, gains in the replacement cycle have largely been the result of the increased number of sewer lining projects. Improvements in construction technology have allowed the City to make greater use of sewer liners. This eliminates the need to excavate the roadway to install new sewer pipe and it allows the department to improve more miles of sewer with the same amount of funding. The miles of sewer replaced in 2015 is expected to be somewhat lower than in 2014 because the 2015 program has more, larger diameter replacement projects compared to 2014 which had a larger number of sewer lining projects.

Financing

The type of bonds used to finance the Sewer Relay Program influences the actual amount of work that is to be done. If revenue bonds are issued, a portion of the budgeted program must be held in reserve and may not be used to finance construction. The reserve requirement is usually 10%. If general obligation bonds are used, more sewers can be constructed with the budgeted amount, but concerns about the City's statutory debt limit may constrain the amount of debt the City can issue. The 2015 Proposed Budget includes a reserve for each project that requires borrowing authority.

Project Backlog

Although the increased level of funding will address on-going maintenance and rehabilitation needs, it does not address the existing backlog of older sewers. There are currently over 200 miles of sewers that are more than 90 years old. DPW estimates that even at the current level of funding, which exceeds the recommended 90-year replacement cycle, there will be nearly 250 miles of sewer mains that will have exceeded their useful lives by 2020.

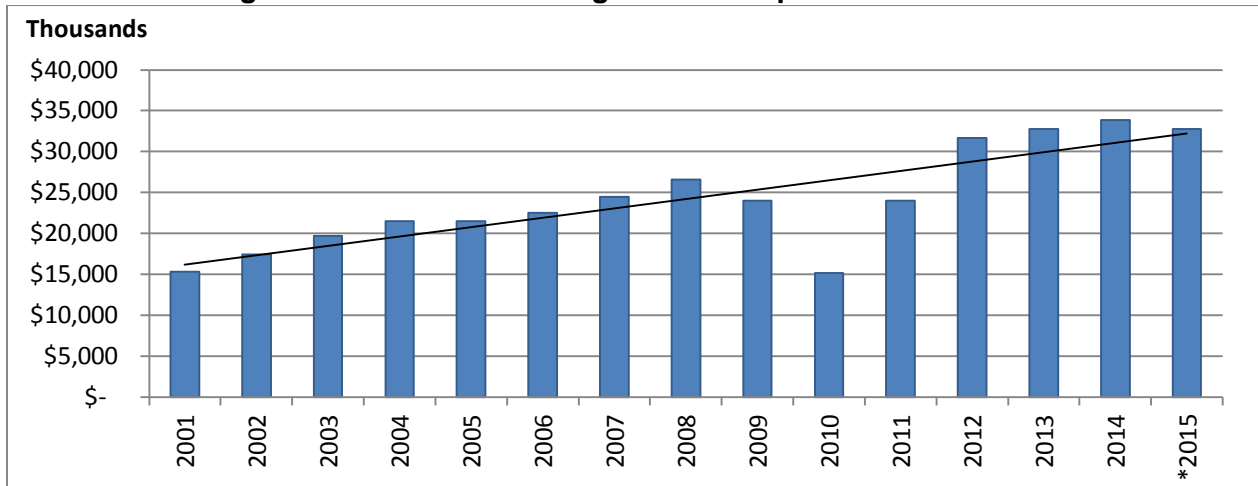
This is in part because the department uses the condition of a sewer, in addition to other metrics, to determine whether replacement is warranted. Sewers that have not reached the end of their useful lives may be in poorer condition than an older sewer and would therefore be replaced sooner. Sewers may also be replaced sooner than would generally be warranted by their age or condition if they are in a street that is scheduled for repaving. As the amount of funding allocated for street repaving increases to address the poor condition of the local roads, paving-related sewer replacements will become a higher percentage of the overall sewer program. Other factors may also divert funding from the oldest mains in the system. The older mains are generally performing well but may pose a higher risk of failure as they continue to age significantly past their expected useful lives.

Useful Life Estimates

The estimates of useful life do not take into consideration that a significant portion of the sewer main program consists of sewer lining projects – not replacement projects. Sewer-lining is a technique that has proven to be a cost-effective alternative for rehabilitating many sewers that in

the past would have required complete replacement. So far, the relining projects have exceeded expectations for extending useful sewer main life, but it is unknown if the lined sewers will achieve the same 90-year useful life as traditionally installed sewer mains.

Table 25.16. Budgeted Sewer Main Funding 2001 to Proposed 2015.



*Proposed Budget

Pump Facility Projects, \$700,000.

Funding for this program provides for the inspection, rehabilitation and replacement of sanitary pump facilities. The 2015 Proposed Budget provides the same level of funding as the 2014 budget. This program was funded as requested by the department. A backlog of projects in this program has been addressed, allowing annual funding to be reduced.

The City owns and maintains 7 sanitary lift stations and 83 sanitary bypass pump stations. These pumps reduce the risk of sewage backing up into homes and businesses. Pumps are located in areas that historically had sewer backup occurrences during periods of heavy rain.

The City's lift stations pump sanitary flow from low areas into gravity sanitary sewers so the flow can reach the Milwaukee Metropolitan Sewerage District's collection and treatment system. The sanitary bypass pump stations are covered under the Sanitary Bypass permit issued by the DNR. If the bypass pumps operate during large rain events, DNR has not objected to their use. If the bypass pumps operate during dry weather, or during small rain events, the DNR will work with the City to establish a course of action to prevent these types of operations. The 2005 stipulation with the Wisconsin Department of Justice allows for the DNR to assess a fine for the operation of bypass pumps during small events or dry weather.

The DNR has established new sanitary sewer overflow rules. There are no specific guidelines on sanitary bypass pumps. It is DPW's understanding that the revised rules will not eliminate the use of sanitary bypass pumps as long as the municipality is maintaining its system and addressing infiltration and inflow problems.

Funding for this program began in 2008. Since that time, \$4.65 million has been budgeted. Actual expenditures for 2013 total \$983,841.

Infiltration and Inflow (I&I) Reduction Projects, \$6,650,000.

Infiltration and Inflow is the occurrence of stormwater or groundwater entering into municipal wastewater systems. The extraneous water enters the sanitary sewer system through cracked pipes (mains and laterals), leaking manholes, and downspouts, sump pumps and foundation drains that are connected directly to the sanitary sewer system. When too much excess water enters the system, sewage may back up into buildings, overflow from manholes or bypass treatment facilities. In 2005, the Milwaukee County Circuit Court stipulated a variety of actions that the City must take to eliminate sanitary sewer overflows. These actions included identifying and correcting leaks in selected sewer basins.

Funding for this program began in 2008. Since that time, \$57.2 million in funding has been budgeted, including \$9.7 million in grant funding. The 2015 Proposed Budget reduces City funding by \$2 million (23%) from the 2014 Budget. The reduction is in borrowing authority. Anticipated grant funding for 2015 is \$1.65 million, the same amount as in the 2014 Budget. All work on private property done to date has been paid for with grant funding from MMSD. There is no provision in the 2015 Proposed Budget to assess property owners for work done in conjunction with this program.

To determine the most effective way to reduce the amount of clear water in the sewer system, the City has initiated a number of pilot and demonstration projects.

- **Cooper Park Sewer Lateral Demonstration Project.**

This project repaired defective sanitary sewer laterals on private property. The project was located in an area bounded by West Burleigh Street, West Center Street, North 82nd Street and North 92nd Street, which is an area where multiple homes have experienced basement backups and which has been shown to have excessive I&I. The cost of the project, which included some public lateral work, was jointly funded by the City and MMSD. Property owners were not assessed for the work.

Sanitary laterals were inspected and rehabilitated using a cured-in-place lining. Approximately 95% of property owners chose to participate in the voluntary program. Work began in November, 2011, and was completed in September, 2012. DPW began monitoring sanitary flows in the area to observe improvements. The extended drought in 2012 delayed the collection of meaningful data. Although rain totals increased in 2013, the pattern of rain events was not optimal for the direct evaluation of system improvements. A consultant calibrated the computer model before finalizing the results.

- **Clemens School Neighborhood Lateral Demonstration Project.**

This project also repaired defective laterals on private property. The project was located in the Clemens School neighborhood (north of Capitol Drive and west of 35th Street). The project had 449 properties with an average cost of \$6,700 per property. Work began in March 2013 and was completed in October 2013. The average cost per lateral is \$116 less than in the Cooper Park project primarily because the average lateral length is shorter. The per-foot price was slightly higher in the Clemens project even though there were more bidders. The same contractor was awarded both projects.

- **Cooper Park Foundation Drain Disconnection Project.**

This project will disconnect foundation drains from the sewer system. The project is located in the Cooper Park area on N. 86th Street from W. Center Street to W. Chambers Street.

Work will include the disconnection of the foundation drain and the installation of a sump pump. There is no charge to the property owner for the disconnection and the pump installation. Upgrades to the electrical system that may be required to accommodate the sump pump are the property owner's responsibility. There are 61 properties in the pilot area. The contract was let in August 2014.

- **Pilot Rehabilitation Project.**

In addition to the area-wide I&I demonstration project, the City has also piloted a rehabilitation project on 5 City-owned homes. The scope of the work included the rehabilitation of the sewer lateral with a cured-in-place liner, removal of the palmer valve and floor drain replacement, installation of a sump pump and discharge piping, and the installation of a backflow valve to prevent sewer backups. The total cost per home was approximately \$18,600. Work was completed in 2011.

The key challenges that were encountered with this project were the need to upgrade the existing electrical system to accommodate the installation and operation of the sump pump, difficulties locating the sump pump discharge piping, and the extensive coordination that was required to schedule work with the tenants.

Information about these projects, as well as I&I projects in other communities, is available on the MMSD website (basementconnection.mmsd.com).

The department has not established policies regarding the repair of private sewer laterals to address I&I issues because the effectiveness of the lateral lining and foundation drain disconnection projects has not yet been determined. The City's consultant is currently evaluating data and working to finalize the results.

Water Quality for Total Maximum Daily Loads (TMDL), \$1,100,000. (formerly BMPs for TSS Reduction)

This program has provided funding to construct various Best Management Practices (BMPs), such as green streets, rain gardens, wet detention ponds, bio-infiltration areas, and end of pipe treatments to reduce the amount of Total Suspended Solids (TSS) that enter waterways. Because new DNR regulations are pending, this program is being transitioned to a more comprehensive water quality program that will take a broader approach to water quality, focusing on bacteria and total phosphorus as well as total suspended solids. It is anticipated that complying with the bacteria loads will be the most challenging aspect of the new standards. Between 2009 and 2014, the City has allocated over \$6.6 million for this program.

MMSD and the DNR are working jointly to develop the standards that will apply to impaired watersheds with respect to TMDLs. These watersheds include the Menomonee River, the Milwaukee River, the Kinnickinnic River and estuary areas. The standards are not expected to be released until sometime in 2015. The City will have 3 permit cycles (5 years each) to comply with the new standards.

Total Suspended Solids (TSS) Compliance

The Wisconsin Department of Natural Resources' regulation in ch. 151, Wis. Adm. Code, required the City to reduce the amount of TSS in runoff by 40%. The project began in 2009 and was intended to continue until the 40% TSS goal was reached. The original deadline for compliance was March 10, 2013. To meet the compliance deadline, the City worked with the

DNR to be given credit for the TSS removed by the treatment of storm water in the combined sewer area. With the allowance of this credit, the City had attained the 40% compliance rate. The new TMDL standards will measure compliance on a watershed by watershed basis which may affect the City's overall compliance rate and the amount of work that may need to be done in the future.

River Channel Maintenance, \$200,000.

This capital program was created in 2012 to provide funding for the restoration of the channels and drainage ditches which carry stormwater to local waterways during rain events. Over time, sediment and vegetation can reduce their capacity and intensify the effects of excessive rainfall. As part of a broader strategy for managing storm water run-off and preventing flooding, the City will be reviewing these channels and restoring their capacity as necessary. This account is not intended for routine maintenance or mowing activities. Budgeted funding was \$400,000 in 2012, \$160,000 in 2013 and \$200,000 in 2014. There were no expenditures from this account in 2013.

Flood Mitigation, \$2,750,000.

This is a new, one-year project to implement the findings of a flood mitigation study in the Dineen Park Neighborhood. It is anticipated that funding will be used to construct a storm water detention pond. The memorandum of understanding between the City of Milwaukee, Milwaukee County and MMSD can be found as an attachment to Common Council File Number 121683.

2. Unfunded Capital Requests.

None.

3. Project Updates.

There are no significant capital projects that are not part of an on-going program.

4. Future Capital Requests.

There are no out-year requests except those related to on-going programs.

VII. ISSUES TO CONSIDER.

1. Consider alternative funding resources to more aggressively remediate the inflow of rainwater into the sewer system through leaking and faulty private sewer laterals and the replacement of foundation drains in light the 47% decrease in inflow in the Cooper Park area.
2. Consider partnering with Milwaukee Water Works to share water flow technology and monitoring to eliminate any duplication of efforts and spending.
3. Consider ways to more aggressively replacing DPW-Fleet equipment operators with Sewer staff operators to reduce costs and increase efficiency.

Capital ISSUES TO CONSIDER.**4. Policy Questions.**

Now that the DPW has completed 2 pilot I&I reduction projects and is in the process of conducting a foundation drain pilot project, the City may soon be able to address best management practices for I&I reduction on City and private property.

Policy questions include the appropriateness of using public funds to improve private property, the use of special assessments as a form of cost recovery, the level of cost recovery, and the appropriateness of the City mandating that property owners make repairs to their laterals to reduce the amount of I&I. User fees, taxes and special assessments could all be used to defray sewer maintenance costs. So far, all work done on private laterals has been grant-funded, but policy decisions regarding funding for sewer maintenance and replacement in the future, especially on private property, will need to be discussed, especially given the City's limited ability to increase the levy, decreases in water consumption, and recent shifts away from the use of special assessments.

5. TMDL Regulations.

New water quality standards being developed by MMSD and the DNR may change how the City implements water quality projects. In addition to more efficiently conveying water once it enters the sewer system, SMF management may need to increase emphasis on preventing water from entering the system in the first place and improving the quality of water that does reach waterways through the reduction of non-point source pollution.

It is expected that the state's new Total Maximum Daily Load (TMDL) requirements will place limits on phosphorus and bacteria, in addition to total suspended solids. Meeting anticipated bacteria requirements in particular could be very challenging, and may require significant work in the future to modify storm sewer outfalls to ensure the City is not exceeding maximum daily loads for the waterway. Compliance will be measured on a watershed-by-watershed basis. It is expected the City will have 3 full permit cycles (5 years each) to meet the new requirements, but until the new rules have been finalized, it will be difficult to say what impact these regulations will have on SMF operations. The 2015 capital budget includes \$1,100,000 for the installation of various water quality projects.

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