

**City of Chicago
Department of Water Management
Sewer Fund**

**Comprehensive Annual Financial Report
For the Years Ended December 31, 2018 and 2017**



**Lori E. Lightfoot, Mayor
Jennie Huang Bennett, Chief Financial Officer
Erin Keane, City Comptroller
Alfonzo Conner, Jr. Commissioner**

Sewer Fund
An Enterprise Fund of
The City of Chicago

**Comprehensive Annual Financial Report
For the Year Ended December 31, 2018 and 2017**



Prepared By:
The Department of Water Management
Bureau of Administrative Support

PART I – INTRODUCTORY SECTION

Letter of Transmittal	1
Certificate of Achievement for Excellence in Financial Reporting	5
Organization Chart / List of Principal Officials	6

PART II – FINANCIAL SECTION

Independent Auditors' Report and Financial Statements

Independent Auditor's Report	7
Management's Discussion and Analysis	9

BASIC FINANCIAL STATEMENTS

Statement of Net Position	18
State of Revenues, Expenses and Changes in Net Position	19
Statements of Cash Flows	20
Notes to the Financial Statements	22

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability and Related Ratios	48
Schedule of Contributions	50

PART III – STATISTICAL DATA (Unaudited)

Net Position by Component, Ten Years Ended December 31, 2018	53
Changes in Net Position, Ten Years Ended December 31, 2018	54
Historical Financial Operations, Ten Years Ended December 31, 2018	55
Five Largest Customers, Ten Years Ended December 31, 2018	56
Customers by Component	57
Recent Sewer Service Rates	58
Sewer System Accounts, Ten Years Ended December 31, 2018	59
Revenue Bond Coverage, Ten Years Ended December 31, 2018	60
Long Term Debt, Ten Years Ended December 31, 2018	61
Capital Improvement Program, 2019–2023	62
Full-Time Equivalent Sewer Fund Employees by Function, Ten Years Ended December 31, 2018	63
Operating Indicators by Function	64
Capital Asset Statistics by Function	65
Population of Service Area, Last Five Census Periods	66
Principal Employers, Current Year and Nine Years Ago	67
Population and Income Statistics	68

INTRODUCTORY SECTION



**DEPARTMENT OF WATER MANAGEMENT
CITY OF CHICAGO**

June 25, 2019

To the Honorable Mayor Lori E. Lightfoot,
Members of the City Council and Citizens of the City of Chicago:

I am pleased to submit to you the Comprehensive Annual Financial Report (CAFR) for the City of Chicago Department of Water Management, Sewer Fund, for the year ended December 31, 2018. Responsibility for both the accuracy of the data and completeness and fairness of the presentation, including all disclosures, rests with management. The purpose of the CAFR is to provide complete and accurate information, which complies with the requirements of the Municipal Code of the City of Chicago.

The CAFR is presented in four sections: introductory, financial, required supplemental information and statistical. The financial section includes management's discussion and analysis (MD & A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it.

REPORTING ENTITY

The Department of Water Management, Sewer Fund, has been accounted for as a separate enterprise fund of the City of Chicago (City) which operates and maintains the City's Sewer system. Effective January 1, 2003 the Sewer Department merged with the Water Department to form the Department of Water Management. The Sewer system collects and transports sanitary and industrial waste and storm water to the interceptor sewers of the Metropolitan Water Reclamation District of Greater Chicago. The system provides sewage and drainage collection and conveyance through over 4,400 miles of sewers and a service area of roughly 230 square miles inhabited by approximately 2.7 million people.

ECONOMIC CONDITION AND OUTLOOK

The Sewer Fund's primary source of revenue is a sewer service charge which is set by City ordinance. The sewer service charge is billed through the water usage charge on customer billings. The sewer service charge covers the costs of operations, maintenance and debt service.

Because of its rate structure, sewer fund revenue is largely dependent upon water usage. As of January 1, 2015, the sewer service charge is set at 100 percent of the water service charge and the metered water rate is set at \$29.49 per 1,000 per cubic feet. There are no large industrial or

commercial users that account for more than five percent of sewer system revenues. It is not expected that there will be a significant change in the population base of the City that would lead to a significant change in revenues.

MAJOR INITIATIVES

The Department of Water Management's, Sewer Division's Five-Year Capital Improvement Program (CIP) for the years 2019 – 2023 is forecasted to be approximately \$1.1 billion. The Sewer Fund's five-year CIP addresses the aggressive efforts to increase the renewal and replacement of the Sewer System's infrastructure and continue to focus on two major areas: sewer replacement and sewer lining.

The Department of Water Management, Sewer Fund, will support the effort of infrastructure renewal by replacing 22 miles of new sewers and lining 42 miles of existing sewers and lining approximately 5,000 structures in 2019. The Chicago Department of Water Management estimates spending \$121.5 million on new sewers, \$60.2 million in lining existing sewers and \$5.0 million in lining catch basins and manholes structures to prevent failures leading to cave-ins in the street.

The Department of Water Management may revise the list of specific improvements and revise cost allocations among improvements, as well as make substitutions to meet current needs and to provide for the efficient operation of the Sewer System.

A master plan for large trunk sewer improvements to provide regional solutions to the sewer system was completed in 2013. The plan continued to be reviewed and refined throughout 2016. A request for proposals was issued in 2016 to start Phase I design of the regional solutions and the selection process was completed. Contract negotiation are ongoing. In 2017, the Department of Water Management completed development of the Full Pipe Model which includes essentially all sewer mains in the City. The Full Pipe Model provides the ability to identify hydraulic deficiencies of small and large sized sewers, develop CIP candidates to improve local and trunk sewers, quantify the impact of green infrastructure, and support other system operation and management activities.

In all, the 5-year CIP is reevaluated annually updated to ensure that areas of the City with the greatest need are given priority.

PROPRIETARY OPERATIONS

The Department of Water Management, Sewer Fund, is responsible for implementing and maintaining an internal control structure to ensure the integrity of the Sewer Fund's operations and to allow for the preparation of financial statements in conformity with accounting principles generally accepted in the United States of America.

The internal control structure is designed to provide that the assets, resources and operations of the Department of Water Management, Sewer Fund, are handled in a manner that protects against waste, theft or neglect that may hinder the financial operations of the Sewer Fund. The objective of these controls is to provide reasonable, rather than absolute assurance, that the financial statements are free of any material misstatement. This objective is being met by adequate supervision of employees, segregation of duties and multiple approval and budgetary controls over all expenditures.

The Sewer Fund's budget is developed and implemented along with the City's annual budget based upon an analysis of its historical operations and maintenance costs. The Commissioner of the Department of Water Management recommends the final proposed budget to the Budget Director. After approval by the Budget Director, the proposed budget is recommended to the Mayor for submission to the City Council for its approval following public hearings.

The budget process is designed to ensure that the Department of Water Management, Sewer Fund, will have adequate funding to meet its operational objectives. The Department of Water Management, Sewer Fund, cannot by law exceed the level of funding as established by the City Council-approved budget. The Budget Director uses an allotment system to manage each department's expenditures against its respective annual appropriation.

The Budget Director, through the allotment system, has the authority to institute economic measures for the Department of Water Management, Sewer Fund, to ensure that its expenditures do not exceed its revenue collections. The Sewer Fund uses encumbrances to control expenditures by preventing appropriated dollars from being used for any purpose other than that for which they have been legally appropriated.

DEBT ADMINISTRATION

The Department of Water Management, Sewer Fund, issues bonds to finance its capital improvement program. The City has covenanted to establish, maintain and collect at all times fees, charges and rates sufficient to produce net revenues available for bonds equal to at least 115 percent of current annual debt service requirements on the outstanding senior lien bonds and equal to at least 100 percent of the maximum annual senior and second lien debt service requirement. The City conducts an annual review of the sewer service charge to ensure that sufficient revenue is being generated to comply with the rate covenant. The ordinances authorizing the issuance of revenue bonds provide for the creation of separate accounts into which net revenues, as defined, or bond proceeds are to be credited, as appropriate.

Any net revenues remaining after providing sufficient funds for all required deposits into bond accounts may be transferred to the Sewer Rate Stabilization Account to be used for any lawful purpose of the Sewer Fund.

The Department of Water Management, Sewer Fund, has entered into continuing disclosure undertakings with respect to bonds issued after July 3, 1995. The Sewer Fund has provided certain annual financial information disclosure for its revenue bonds in the statistical section of this report.

LONG TERM FINANCIAL PLANNING

The Department of Water Management, Sewer Fund's, capital activities are funded through the Sewer Fund revenue bonds and Sewer Fund revenue. The Department of Water Management, Sewer Fund, has realized savings through advance refunding as interest rates have changed.

INDEPENDENT AUDIT

City ordinances require the Department of Water Management's, Sewer Fund, financial statements to be audited by independent certified public accountants. The audit was conducted by Deloitte & Touche LLP and a consortium of Chicago-based of minority and women-owned certified public accounting firms. An unmodified audit opinion rendered by Deloitte & Touche, LLP, is included in the financial section of this report.

AWARD

The Government Finance Officers Association of the United States and Canada (GFOA) awarded the Certificate of Achievement for Excellence in Financial Reporting to Chicago Department of Water Management - Sewer Fund, an Enterprise Fund of the City of Chicago, for its CAFR for the fiscal year ended December 31, 2017.

This was the twenty third year that the government has achieved this prestigious award, which is the highest form of recognition for excellence in state and local government financial reporting. In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

The Certificate of Achievement is valid for a period of one year only. I believe our current report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

ACKNOWLEDGMENTS

This report could not have been prepared without the dedication and effective assistance of the entire staff of the Department of Water Management and the Department of Finance. I wish to express my appreciation to them, and particularly those who contributed directly to the preparation of this report.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Alfonzo Conner, Jr.", is written over the typed name.

Alfonzo Conner, Jr
Commissioner



Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Sewer Fund, and Enterprise Fund
of the City of Chicago, Illinois**

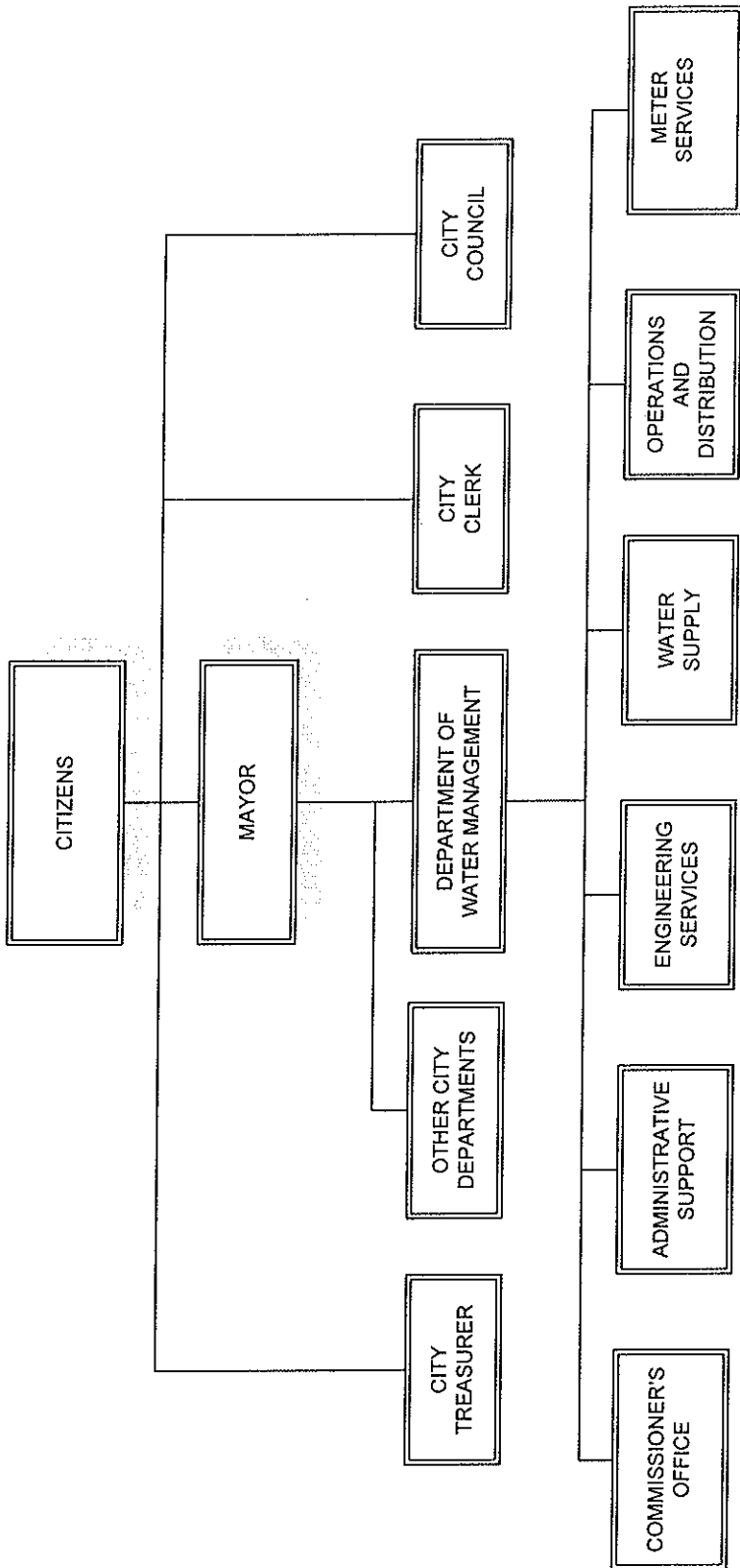
For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2017

Christopher P. Morrill

Executive Director/CEO

CITY OF CHICAGO
 DEPARTMENT OF WATER MANAGEMENT
 As of 12/31/18



List of Principal Officials

Rahm Emanuel	Mayor
Randy Conner	Commissioner

FINANCIAL SECTION

INDEPENDENT AUDITORS' REPORT

To the Honorable Lori E. Lightfoot, Mayor
And Members of the City Council
City of Chicago, Illinois

Report on the Financial Statements

We have audited the accompanying financial statements of the Sewer Fund ("Sewer Fund"), an enterprise fund of the City of Chicago, Illinois (the "City"), as of and for the years ended December 31, 2018 and 2017, and the related notes to the financial statements, which collectively comprise the Sewer Fund's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Sewer Fund, as of December 31, 2018 and 2017, and the changes in its financial position, and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1 to the basic financial statements, the basic financial statements referred to above present only the Sewer Fund, an enterprise fund of the City, and do not purport to, and do not, present the financial position of the City as of December 31, 2018 and 2017, changes in its financial position, or, where applicable, its cash flows, thereof, in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis, the Schedule of Changes in the Net Pension Liability and Related Ratios, and the Schedule of Contributions, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Sewer Fund's basic financial statements. The introductory section and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory section and statistical section have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Deloitte & Touche LLP

June 25, 2019

CITY OF CHICAGO, ILLINOIS SEWER FUND

MANAGEMENT'S DISCUSSION AND ANALYSIS

The following discussion and analysis of the City of Chicago, Illinois (the "City"), Sewer Fund (the "Sewer Fund") financial performance provides an introduction and overview of the Sewer Fund's basic financial activities for the fiscal years ended December 31, 2018 and 2017. Please read this discussion in conjunction with the Sewer Fund's basic financial statements and the notes to basic financial statements following this section.

FINANCIAL HIGHLIGHTS

2018

- Operating gross revenues for 2018 increased by \$3.5 million (0.9%) and remains fairly consistent as compared to prior-year gross operating revenues. This increase is due primarily to pumpage and rate increases during the year that were offset by continued conversion of non-metered customers to metered customers. There was a rate increase of 1.54% during 2018.
- Operating expenses before depreciation and amortization decrease by \$7.7 million (4.7%) as compared to 2017 primarily due to a decrease in pension expense.
- The Sewer Fund's total net position for 2018 increased by \$97.4 million or 20.0% compared to 2017.
- The Sewer Fund's total assets and deferred outflows were greater than total liabilities by \$585.1 million (net position) at December 31, 2018. Net position comprises \$827.8 million of net investment in capital assets, \$115.6 million of restricted for capital projects, and (\$358.3) million of unrestricted.
- Depreciable capital asset additions, net, for 2018 were \$237.5 million, primarily due to the completion of sewer construction and rehabilitation projects.

2017

- Operating gross revenues for 2017 decreased by \$6.9 million (1.8%) compared to prior-year gross operating revenues. This decrease is primarily due to the continued conversion of non-metered customers to metered customers. There was a rate increase of 1.83% during 2017.
- Operating expenses before depreciation and amortization decreased by \$64.4 million (28.3%) compared to 2016 primarily due to a decrease in pension expenses as a result of the changes under Public Act 100-0023 (P.A. 100-0023) which requires increased future contributions to the two single-employer defined benefit pension plans, the Municipal Employees' Annuity and Benefit Fund of Chicago (Municipal Employees'); and the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Laborers') (collectively, the "Plans"). The increase in future required contributions increased the discount rate used to determine the total pension liability and decreased the current year pension expense.

- The Sewer Fund's total net position for 2017 increased by \$75.2 million or 18.2% compared to 2016.
- The Sewer Fund's total assets and deferred outflows were greater than total liabilities by \$487.7 million (net position) at December 31, 2017. Net position comprises \$735.6 million of net investment in capital assets, \$116.3 million of restricted for capital projects, and (\$364.2) million of unrestricted.
- Depreciable capital asset additions, net, for 2017 were \$144.3 million, primarily due to the completion of sewer construction and rehabilitation projects.

OVERVIEW OF THE BASIC FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the Sewer Fund's basic financial statements. The Sewer Fund's basic financial statements comprise the basic financial statements and the notes to basic financial statements. In addition to the basic financial statements, this report also presents statistical data after the notes to basic financial statements.

The statements of net position present all of the Sewer Fund's assets, deferred outflows, liabilities, and deferred inflows using the accrual basis of accounting. The difference between assets, deferred outflows, liabilities and deferred inflows is reported as net position. The increase or decrease in net position may serve as an indicator, over time, whether the Sewer Fund's financial position is improving or deteriorating. However, the consideration of other nonfinancial factors may be necessary in the assessment of overall financial position and health of the Sewer Fund.

The statements of revenues, expenses, and changes in net position present all current fiscal year revenues and expenses, regardless of when cash is received or paid, and the ensuing change in net position.

The statements of cash flows report how cash and cash equivalents were provided and used by the Sewer Fund's operating, capital and related financing, and investing activities. These statements are prepared on a cash basis and present the cash received and disbursed, the net increase or decrease in cash and cash equivalents for the year, and the cash and cash equivalents balance at year-end.

The notes to basic financial statements are an integral part of the basic financial statements; accordingly, such disclosures are essential for a full understanding of the information provided in the basic financial statements.

The required supplementary information section presents the schedule of changes in the net pension liability and related ratios and the schedule of contributions.

In addition to the basic financial statements, this report includes statistical data. The statistical data section presents unaudited debt-service coverage calculations and includes certain unaudited information related to the Sewer Fund's historical financial and nonfinancial operating results and capital activities.

FINANCIAL ANALYSIS

At December 31, 2018, the Sewer Fund's financial position continues to be strong with total assets and deferred outflows of \$3,459.9 million, total liabilities and deferred inflows of \$2,874.8 million, and net position of \$585.1 million. A comparative condensed summary of the Sewer Fund's net position at December 31, 2018, 2017, and 2016, is as follows:

(In thousands)	Net Position		
	2018	2017	2016
Current assets	\$ 491,064	\$ 504,031	\$ 480,086
Restricted and other assets—noncurrent	157,648	201,837	42,975
Utility plant—net	<u>2,735,369</u>	<u>2,576,059</u>	<u>2,455,960</u>
Total assets	3,384,081	3,281,927	2,979,021
Deferred outflows	<u>75,820</u>	<u>108,421</u>	<u>184,729</u>
Total assets and deferred outflows	<u>\$3,459,901</u>	<u>\$3,390,348</u>	<u>\$3,163,750</u>
Current liabilities	\$ 254,076	\$ 280,884	\$ 279,096
Pension liability	453,667	392,602	664,925
Long-term liabilities	<u>2,005,573</u>	<u>1,982,359</u>	<u>1,780,155</u>
Total liabilities	2,713,316	2,655,845	2,724,176
Deferred inflows	<u>161,529</u>	<u>246,802</u>	<u>27,102</u>
Total liabilities and deferred inflows	<u>\$2,874,845</u>	<u>\$2,902,647</u>	<u>\$2,751,278</u>
Net position:			
Net invested in capital assets	\$ 827,773	\$ 735,564	\$ 648,644
Restricted for capital projects	115,576	116,376	117,295
Unrestricted	<u>(358,293)</u>	<u>(364,239)</u>	<u>(353,467)</u>
Total net position	<u>\$ 585,056</u>	<u>\$ 487,701</u>	<u>\$ 412,472</u>

2018

Current assets decreased by \$13.0 million (2.57%) due to a decrease in cash, cash equivalents, and investments which were offset by an increase in accounts receivable. Noncurrent restricted investments and other assets decreased by \$44.2 million (21.9%) and utility plant—net increased by \$159.3 million (6.2%) due primarily to capital activities for sewer construction and rehabilitation projects, funded by the restricted investments. During 2018, the Sewer Fund lined an additional 44.5 miles of sewers.

Current liabilities decreased by \$26.8 million (9.5%), which was primarily due to a decrease in accrued liabilities payable from restricted assets, with an offsetting increase in accounts payable from restricted assets and current liabilities not payable from restricted assets. Long-term liabilities increased by \$23.2 million (1.2%). Pension liability in the amount of \$453.7 million increased \$61.1 million (15.6%) compared to 2017 primarily as a result of a decrease in pension plan assets associated with investment losses caused by market results.

Deferred outflows decreased by \$32.6 (30.1%) and deferred inflows decreased by \$85.3 million (34.6%) compared with 2017 due to the difference between 2018 projected and actual earnings on pension plan investments.

As of December 31, 2018, total net position was \$585.1 million, an increase of \$97.4 million (20.0%) from 2017.

2017

Current assets increased by \$23.9 million (5.00%) due to an increase in cash and cash equivalents and due from other funds with a slight decrease in accounts receivable and inventories. Noncurrent restricted investments and other assets increased by \$158.9 million (369.7%) and utility plant—net increased by \$120.1 million (4.9%) due primarily to capital activities for sewer construction and rehabilitation projects, funded by the restricted investments. During 2017, the Sewer Fund lined an additional 40.7 miles of sewers.

Current liabilities increased by \$1.8 million (.6%), which was primarily due to increased accounts payable, accrued liabilities, with an offsetting decrease in due to other funds, unearned revenue. Long-term liabilities increased by \$202.2 million (11.4%). Pension liability in the amount of \$392.6 million decreased \$272.3 million (41.0%) compared to 2016 as a result of the changes under P.A. 100-0023 which requires increased future contributions to the Plans. The increase in future required contributions increased the discount rate used to determine the total pension liability and therefore decreased the pension liability.

Deferred outflows decreased by \$76.3 (41.3%) and deferred inflows increased by \$219.7 million (810.6%) compared with 2016 due to the changes under P.A. 100-0023 as discussed above.

As of December 31, 2017, total net position was \$487.7 million, an increase of \$75.2 million (18.2%) from 2016.

A summary of revenues, expenses, and changes in net position for the years ended December 31, 2018, 2017, and 2016, is as follows:

(In thousands)	Revenues, Expenses, and Changes in Net Position		
	2018	2017	2016
Revenues:			
Operating revenues:			
Sewer service—net	\$ 368,211	\$ 356,473	\$ 367,820
Other operating revenues	<u>1,492</u>	<u>1,150</u>	<u>1,146</u>
Total operating revenues	<u>369,703</u>	<u>357,623</u>	<u>368,966</u>
Operating expenses:			
Repairs	43,654	41,881	36,408
General Fund reimbursements	51,188	47,522	50,760
Pension expense (Note 6)	18,938	34,397	104,864
Maintenance	24,909	24,660	21,941
Engineering	3,664	2,466	2,158
Administrative and general	13,472	12,591	11,801
Depreciation and amortization	<u>48,504</u>	<u>48,171</u>	<u>40,734</u>
Total operating expenses	<u>204,329</u>	<u>211,688</u>	<u>268,666</u>
Operating income	<u>165,374</u>	<u>145,935</u>	<u>100,300</u>
Nonoperating revenues	7,446	4,354	1,137
Nonoperating expenses	<u>(77,739)</u>	<u>(81,479)</u>	<u>(81,842)</u>
Total nonoperating expenses / revenues	<u>(70,293)</u>	<u>(77,125)</u>	<u>(80,705)</u>
Income before capital grants	95,081	68,810	19,595
Capital grants	<u>2,274</u>	<u>6,419</u>	<u>16,639</u>
Change in net position	97,355	75,229	36,234
Net position beginning of year	<u>487,701</u>	<u>412,472</u>	<u>376,238</u>
Net position end of year	<u>\$ 585,056</u>	<u>\$ 487,701</u>	<u>\$ 412,472</u>

2018

Net sewer service revenues for the years ended 2018 and 2017 were \$368.2 million and \$356.5 million, respectively. Other revenue, which consists primarily of inspection fees and house drain fees, for the years ended 2018 and 2017 was \$1.5 million and \$1.1 million respectively. The 2018 net sewer service revenue of \$368.2 million remained fairly consistent as compared to prior year. This increase is primarily due to pumpage and rate increases during the year that were offset by continued conversion of non-metered customers to metered customers. There was a rate increase of 1.54% during 2018.

Pension expense decreased \$15.5 million (44.9%) from \$34.4 million in 2017 to \$18.9 million in 2018 associated with a decrease in the pension expense from the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Laborers'). The amortization of the deferred outflow associated with the decrease in the discount rate assumption in 2015 was fully amortized in 2017 and is no longer a component of pension expense resulting in the reduction.

Nonoperating revenues increased by \$3.1 million compared to 2017 primarily as a result of grant proceeds from the Illinois Environmental Protection Agency (IEPA) and proceeds from settlements during 2018.

2017

Net sewer service revenues for the years ended 2017 and 2016 were \$356.5 million and \$367.8 million, respectively. Other revenue, which consists primarily of inspection fees and house drain fees, for the years ended 2017 and 2016 was \$1.1 million and \$1.1 million respectively. The decrease in 2017 net sewer service revenue of \$11.3 million (3.1%) is primarily conversion of non-meter customers to metered customers. There was a rate increase of 1.83% during 2017.

Pension expense decreased \$70.5 million (67.2%) from \$104.9 million in 2016 to \$34.4 million in 2017 as a result of the changes in P.A. 100-0023 which requires increased future contributions to the Plans. The increase in future required contributions increased the discount rate used to determine the total pension liability and decreased the current year pension expense. During 2017, \$9.5 million of the \$34.4 million was paid under statutory requirements.

Nonoperating revenues decreased by \$7.0 million compared to 2016 as a result of proceeds primarily from community development block grant during 2016.

A comparative summary of the Sewer Fund's operating expenses, as classified in the basic financial statements, for the years ended December 31, 2018, 2017, and 2016, is as follows:

(In thousands)	Operating Expenses		
	2018	2017	2016
Repairs	\$ 43,654	\$ 41,881	\$ 36,408
Pension	18,938	34,397	104,864
General Fund reimbursements	51,188	47,522	50,760
Maintenance	24,909	24,660	21,941
Engineering	3,664	2,466	2,158
Administrative and general	<u>13,472</u>	<u>12,591</u>	<u>11,801</u>
Operating expenses before depreciation and amortization	155,825	163,517	227,932
Depreciation and amortization	<u>48,504</u>	<u>48,171</u>	<u>40,734</u>
Total operating expenses	<u>\$ 204,329</u>	<u>\$ 211,688</u>	<u>\$ 268,666</u>

2018

Overall, operating expenses before depreciation and amortization for 2018 decreased by \$7.7 million (4.7%) in 2018 primarily due to reduction in pension expense as discussed above. Depreciation and amortization slightly increased due to an increase in utility plant.

2017

Overall, operating expenses before depreciation and amortization for 2017 decreased by \$64.4 million (28.3%) in 2017 primarily due to decrease in pension expense of \$70.5 million. Depreciation and amortization increased due to an increase in utility plant.

A comparative summary of the Sewer Fund's cash flows for the years ended December 31, 2018, 2017, and 2016, is as follows:

(In thousands of dollars)	Cash Flows		
	2018	2017	2016
Cash from activities:			
Operating	\$ 219,847	\$ 213,928	\$ 247,425
Capital and related financing	(289,955)	(38,281)	(267,154)
Noncapital financing activities	4,931	-	-
Investing	148,822	(169,434)	(694)
Net change in cash and cash equivalents	83,645	6,213	(20,423)
Cash and cash equivalents:			
Beginning of year	162,998	156,785	177,208
End of year	\$ 246,643	\$ 162,998	\$ 156,785

2018

As of December 31, 2018, the Sewer Fund's unrestricted and restricted cash and cash equivalents of \$246.6 million represented an increase of \$83.6 million from December 31, 2017, as compared to the increase of \$6.2 million from December 31, 2016 to December 31, 2017, primarily due to investment related activities in 2018. Total unrestricted cash and cash equivalents at December 31, 2018 and 2017, was \$73.1 million and \$55.3 million, respectively.

2017

As of December 31, 2017, the Sewer Fund's unrestricted and restricted cash and cash equivalents of \$163.0 million represented an increase of \$6.2 million from December 31, 2016, as compared to a decrease of \$20.4 million from December 31, 2015 to December 31, 2016, primarily due to investment related activities in 2017. Total unrestricted cash and cash equivalents at December 31, 2017 and 2016, was \$55.3 million and \$30.3 million, respectively.

UTILITY PLANT AND DEBT ADMINISTRATION

2018

At the end of 2018 and 2017, the Sewer Fund had net utility plant of \$2,735.4 million and \$2,576.1 million, respectively. During 2018, the Sewer Fund had capital additions being depreciated of \$237.5 million, and completed projects totaling \$59.0 million were transferred from construction in progress to applicable facilities and structures capital accounts.

2017

At the end of 2017 and 2016, the Sewer Fund had net utility plant of \$2,576.1 million and \$2,456.0 million, respectively. During 2017, the Sewer Fund had capital additions being depreciated of \$144.3 million, and completed projects totaling \$9.1 million were transferred from construction in progress to applicable facilities and structures capital accounts.

The Sewer Fund's net utility plant at December 31, 2018, 2017, and 2016, is summarized as follows:

(In thousands)	Net Utility Plant at Year-End		
	2018	2017	2016
Utility plant not depreciated:			
Land and land rights	\$ 560	\$ 560	\$ 560
Construction in progress	<u>91,925</u>	<u>88,343</u>	<u>35,498</u>
Total utility plant not depreciated	<u>92,485</u>	<u>88,903</u>	<u>36,058</u>
Utility plant being depreciated:			
Facilities and structures	3,270,584	3,071,099	2,958,973
Furniture and equipment	<u>33,473</u>	<u>30,923</u>	<u>31,006</u>
Total utility plant being depreciated	<u>3,304,057</u>	<u>3,102,022</u>	<u>2,989,979</u>
Less accumulated depreciation:			
Facilities and structures	(636,620)	(591,481)	(548,233)
Furniture and equipment	<u>(24,553)</u>	<u>(23,385)</u>	<u>(21,844)</u>
Total accumulated depreciation	<u>(661,173)</u>	<u>(614,866)</u>	<u>(570,077)</u>
Utility plant being depreciated—net	<u>2,642,884</u>	<u>2,487,156</u>	<u>2,419,902</u>
Utility plant—net	<u>\$2,735,369</u>	<u>\$2,576,059</u>	<u>\$2,455,960</u>

The Sewer Fund's capital activities are funded through Sewer Fund revenue bonds, Illinois Environmental Protection Agency Loans, and Sewer Fund revenues. Additional information on the Sewer Fund's capital assets is presented in Note 5 of the notes to basic financial statements.

The Sewer Fund's outstanding debt at December 31, 2018, 2017, and 2016, is summarized as follows:

(In thousands)	Long-Term Outstanding Debt at Year-End		
	2018	2017	2016
Revenue bonds	\$1,893,561	\$1,861,381	\$1,692,820
Add interest accretion on Series 1998 capital appreciation bonds	69,465	64,105	59,018
Unamortized net bond discount/premium	<u>104,893</u>	<u>113,074</u>	<u>77,642</u>
Outstanding debt—net	<u>\$2,067,919</u>	<u>\$2,038,560</u>	<u>\$1,829,480</u>

The Sewer Fund's revenue bonds at December 31, 2018, have underlying credit ratings with each of the three major rating agencies as follows:

	Moody's Investor Services	Standard & Poor's	Fitch Ratings	Kroll
Senior Lien Wastewater Revenue Bonds	Baa2	A+	NR	NR
Junior Lien Wastewater Revenue Bonds	Baa3	A	AA-	AA-

At December 31, 2018, the Sewer Fund was in compliance with the debt covenants as stated within the bond ordinances. Additional information on certain of the Sewer Fund's debt covenants is presented in Note 4 of the notes to the basic financial statements.

REQUESTS FOR INFORMATION

This financial report is designed to provide the reader with a general overview of the Sewer Fund's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the City of Chicago Department of Finance.

BASIC FINANCIAL STATEMENTS

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATEMENTS OF NET POSITION
AS OF DECEMBER 31, 2018 AND 2017
(In thousands)**

	2018	2017		2018	2017
ASSETS			LIABILITIES		
CURRENT ASSETS:			CURRENT LIABILITIES:		
Cash and cash equivalents (Note 2)	\$ 73,084	\$ 55,338	Accounts payable	\$ 3,291	\$ 3,728
Investments (Note 2)	97,690	102,703	Due to other City funds	9,096	8,904
Accounts receivable—net of allowance for doubtful accounts of approximately \$108,981 in 2018 and \$98,927 in 2017	109,429	105,155	Unearned revenue	12,654	13,671
Due from other City funds	20,075	22,238	Accrued liabilities unrestricted	41,227	38,597
Inventories	789	975	Liabilities payable from restricted assets:		
Cash and cash equivalents—restricted (Note 2)	173,559	107,660	Accounts payable	69,149	47,679
Investments—restricted (Note 2)	14,249	108,324	Accrued liabilities	13,222	67,439
Interest receivable—restricted (Note 2)	<u>2,189</u>	<u>1,638</u>	Current portion of long-term debt (Note 4)	62,346	56,201
			Interest payable	<u>43,091</u>	<u>44,665</u>
Total current assets	<u>491,064</u>	<u>504,031</u>	Total current liabilities unrestricted	<u>254,076</u>	<u>280,884</u>
NONCURRENT ASSETS:			NONCURRENT LIABILITIES:		
Investments—restricted (Note 2)	<u>156,439</u>	<u>200,538</u>	Net pension liability (Note 6)	453,667	392,602
Other assets	<u>1,209</u>	<u>1,299</u>	Long-term debt—net of current maturities (Note 4)	<u>2,005,573</u>	<u>1,982,359</u>
Utility plant (Note 5):			Total noncurrent liabilities	<u>2,459,240</u>	<u>2,374,961</u>
Land and land rights	560	560	Total liabilities	<u>2,713,316</u>	<u>2,655,845</u>
Facilities and structures	3,270,584	3,071,099	DEFERRED INFLOWS (Note 9)	<u>161,529</u>	<u>246,802</u>
Furniture and equipment	33,473	30,923	NET POSITION (Note 1):		
Construction in progress	<u>91,925</u>	<u>88,343</u>	Net investment in capital assets	827,773	735,564
Total utility plant	3,396,542	3,190,925	Restricted for capital projects	115,576	116,376
Less accumulated depreciation	<u>(661,173)</u>	<u>(614,866)</u>	Unrestricted	<u>(358,293)</u>	<u>(364,239)</u>
Utility plant—net	<u>2,735,369</u>	<u>2,576,059</u>	Total net position	585,056	487,701
Total noncurrent assets	<u>2,893,017</u>	<u>2,777,896</u>			
DEFERRED OUTFLOWS (Note 9)	<u>75,820</u>	<u>108,421</u>			
TOTAL ASSETS AND DEFERRED OUTFLOWS	<u>\$ 3,459,901</u>	<u>\$ 3,390,348</u>	TOTAL	<u>\$ 3,459,901</u>	<u>\$ 3,390,348</u>

See notes to basic financial statements.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017
(In thousands)**

	2018	2017
OPERATING REVENUES:		
Sewer service:		
Sewer service—gross	380,822	\$ 377,286
Less: provision for doubtful accounts	<u>(12,611)</u>	<u>(20,813)</u>
Sewer service—net	368,211	356,473
Other	<u>1,492</u>	<u>1,150</u>
Total operating revenues	<u>369,703</u>	<u>357,623</u>
OPERATING EXPENSES:		
Repairs	43,654	41,881
General Fund reimbursements	51,188	47,522
Pension expense (Note 6)	18,938	34,397
Maintenance	24,909	24,660
Engineering	3,664	2,466
Administrative and general	<u>13,472</u>	<u>12,591</u>
Total operating expenses before depreciation and amortization	155,825	163,517
Depreciation and amortization	<u>48,504</u>	<u>48,171</u>
Total operating expenses	<u>204,329</u>	<u>211,688</u>
OPERATING INCOME	<u>165,374</u>	<u>145,935</u>
NONOPERATING REVENUE (EXPENSES):		
Investment income	2,436	4,348
Interest expense	(77,619)	(81,359)
Other	<u>5,010</u>	<u>6</u>
Total nonoperating expenses—net	<u>(70,173)</u>	<u>(77,005)</u>
TRANSFERS OUT	<u>(120)</u>	<u>(120)</u>
CAPITAL GRANTS	<u>2,274</u>	<u>6,419</u>
CHANGE IN NET POSITION	97,355	75,229
TOTAL NET POSITION—Beginning of year	<u>487,701</u>	<u>412,472</u>
TOTAL NET POSITION—End of year	<u>\$ 585,056</u>	<u>\$ 487,701</u>

See notes to basic financial statements.

CITY OF CHICAGO, ILLINOIS
SEWER FUND

STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017
(In thousands)

	2018	2017
CASH FLOWS FROM OPERATING ACTIVITIES:		
Received from customers	\$ 364,412	\$ 358,600
Transactions with other City funds	(61,740)	(63,423)
Payments to vendors	(31,185)	(29,299)
Payments to employees	<u>(51,640)</u>	<u>(51,950)</u>
Net cash provided by operating activities	<u>219,847</u>	<u>213,928</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:		
Acquisition and construction of capital assets	(234,702)	(165,650)
Proceeds from issuance of bonds	89,597	506,380
Payment to refund bonds	-	(240,400)
Bond issuance costs	-	(5,394)
Interest paid on revenue bonds	(89,707)	(87,983)
Proceeds from Illinois Environmental Protection Agency	2,067	-
Proceeds from Community Development Block Grant	207	6,419
Principal paid on bonds and notes	<u>(57,417)</u>	<u>(51,653)</u>
Net cash used in capital and related financing activities	<u>(289,955)</u>	<u>(38,281)</u>
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES—		
Proceeds from settlement agreement	<u>4,931</u>	<u>-</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Sales and purchases of investments—net	139,815	(174,695)
Investment interest	<u>9,007</u>	<u>5,261</u>
Net cash provided by (used in) investing activities	<u>148,822</u>	<u>(169,434)</u>
NET CHANGE IN CASH AND CASH EQUIVALENTS	83,645	6,213
CASH AND CASH EQUIVALENTS—Beginning of year	<u>162,998</u>	<u>156,785</u>
CASH AND CASH EQUIVALENTS—End of year	<u>\$ 246,643</u>	<u>\$ 162,998</u>

(Continued)

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017
(In thousands)**

	2018	2017
RECONCILIATION TO CASH AND CASH EQUIVALENTS REPORTED ON THE STATEMENTS OF NET POSITION:		
Unrestricted	\$ 73,084	\$ 55,338
Restricted	<u>173,559</u>	<u>107,660</u>
TOTAL	<u>\$ 246,643</u>	<u>\$ 162,998</u>
RECONCILIATION OF OPERATING INCOME TO CASH FLOWS FROM OPERATING ACTIVITIES:		
Operating income	\$ 165,374	\$ 145,935
Adjustments to reconcile:		
Depreciation and amortization	48,504	48,171
Pension expense other than contribution	6,191	24,921
Provision for uncollectible accounts	12,611	20,813
Changes in assets and liabilities:		
(Decrease) increase in due from other City funds	2,163	(4,766)
Increase in accounts receivable	(16,885)	(19,093)
Decrease in inventories	186	18
Increase (decrease) in accrued liabilities	3,124	(201)
Decrease in accounts payable and due to other City funds	(404)	(1,127)
Decrease in unearned revenue	<u>(1,017)</u>	<u>(743)</u>
CASH FLOWS FROM OPERATING ACTIVITIES	<u>\$ 219,847</u>	<u>\$ 213,928</u>

SUPPLEMENTAL DISCLOSURE OF NONCASH ITEMS—Property additions in 2018 and 2017 of \$82,446 and \$115,648, respectively, have outstanding accounts payable and accrued liabilities.

The fair value adjustment loss to investments for 2018 and 2017 were \$7,805 and \$4,433, respectively.

See notes to basic financial statements.

(Concluded)

CITY OF CHICAGO, ILLINOIS SEWER FUND

NOTES TO BASIC FINANCIAL STATEMENTS AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017 (In thousands)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization—The Sewer Fund (the “Sewer Fund”) collects and transmits wastewater to the treatment facilities of the Metropolitan Water Reclamation District of Greater Chicago. The Sewer Fund is included in the City of Chicago, Illinois (the “City”), reporting entity as an enterprise fund.

The accompanying basic financial statements present only the Sewer Fund and are not intended to present the financial position of the City or the results of its operations and cash flows.

Basis of Accounting—The accounting policies of the Sewer Fund are based upon accounting principles generally accepted in the United States of America as prescribed by the Governmental Accounting Standards Board (GASB). The accounting and financial reporting treatment applied to a fund is determined by its measurement focus. The accounts of the Sewer Fund are reported using the flow of economic resources measurement focus.

The Sewer Fund uses the accrual basis of accounting under which revenues are recognized when earned and expenses are recognized when the liability is incurred.

When both restricted and unrestricted resources are available for use, it is the City’s policy to use restricted resources first, then unrestricted resources as they are needed.

Annual Appropriated Budget—The Sewer Fund has a legally adopted annual budget that is not required to be reported.

Management’s Use of Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash, Cash Equivalents, and Investments—Cash, cash equivalents, and investments generally are held with the City Treasurer as required by the Municipal Code of Chicago (the “Code”). Interest earned on pooled investments is allocated to participating funds based upon their average combined cash and investment balances. Due to contractual agreements or legal restrictions, the cash and investments of certain funds are segregated and earn and receive interest directly.

The Code permits deposits only to City Council-approved depositories, which must be organized state or national banks and federal and state savings and loan associations, located within the City, whose deposits are federally insured.

Investments are limited to those authorized by the Code. Investments authorized by the Code include, but are not limited to, interest-bearing general obligations of the City, the State of Illinois (the "State"), and the U.S. government; U.S. Treasury bills and other non-interest-bearing general obligations of the U.S. government purchased in the open market below face value; domestic money market funds regulated by and in good standing with the Securities and Exchange Commission; and tax anticipation warrants issued by the City (see Note 2). The City is prohibited by ordinance from investing in derivatives, as defined, without City Council approval.

The Sewer Fund values its investments at fair value or amortized cost, as applicable. U.S. government securities purchased at a price other than par with a maturity of less than one year are reported at amortized cost.

Repurchase agreements can be purchased only from banks and certain other institutions authorized to do business in the State. The City Treasurer requires that securities pledged to secure these agreements have a fair value equal to the cost of the repurchase agreement, plus accrued interest.

Investments, generally, may not have a maturity in excess of 30 years from the date of purchase. Certain other investment balances are held in accordance with the specific provisions of applicable bond ordinances.

Cash equivalents include investments with maturities of three months or less when purchased.

Accounts Receivable—The Sewer Fund accounts receivable is comprised of billings and collections for sewer services processed by the Department of Water Management. Management has provided an allowance for amounts recorded at year-end that may be uncollectible.

Transactions with the City—The City's General Fund provides services to all other funds. The amounts allocated to other funds for these services are treated as operating expenses by the Sewer Fund and consist mainly of employee benefits, self-insured risks, and administrative expenses.

Inventories—Inventories, composed mainly of materials and supplies, are stated at cost, determined principally on the first-in, first-out method.

Utility Plant—Utility plant is recorded at cost or, for donated assets at acquisition cost. Utility plant is defined by the Sewer Fund as assets with an initial cost of more than \$5,000 and an estimated useful life in excess of two years. Such assets are recorded at historical cost if purchased. Depreciation is provided using the straight-line method and begins in the year following the year of acquisition or completion. Estimated useful lives are as follows:

Facilities and structures	75 years
Furniture and equipment	5–20 years
Sewer rehabilitation	50 years

Costs of repairs and maintenance that do not significantly extend the useful life of assets are charged to operations.

Deferred Outflows—Deferred outflows represent unamortized loss on bond refundings, differences between estimated and actual investment earnings related to pensions, and changes in actuarial assumptions related to pensions, and other pension related changes.

Deferred Inflows—Deferred inflows represent the differences between projected and actual actuarial experience related to pensions, and other pension related changes.

Net Position—Net position is composed of net earnings from operating and nonoperating revenues, expenses, and capital grants. Net position is displayed in three components: net investment in capital assets, restricted for capital projects, and unrestricted. Net investment in capital assets consists of all capital assets, net of accumulated depreciation and reduced by outstanding debt, net of debt service reserve, and unspent bond proceeds. Restricted for capital projects consists of assets on which constraints are placed by external parties (such as lenders and grantors) and laws, regulations, and enabling legislation, reduced by liabilities and deferred inflows of resources related to those assets. Unrestricted consists of the net amount of all other assets, deferred outflows, liabilities, and deferred inflows not categorized as either of the above.

Employee Benefits—Employee benefits are granted for vacation and sick leave, workers' compensation, and health care. Unused vacation leave is accrued and may be carried over for one year. Sick leave is accumulated at the rate of one day for each month worked, up to a maximum of 200 days. Severance of employment terminates all rights to receive compensation for any unused sick leave. Sick leave pay is not accrued. Employee benefit claims outstanding, including claims incurred but not reported, are estimated and recorded as liabilities.

Employees are eligible to defer a portion of their salaries until future years under the City's deferred compensation plan created in accordance with Internal Revenue Code Section 457. The deferred compensation is not available to employees until termination, retirement, death, or unforeseeable emergency. The plan is administered by third-party administrators who maintain the investment portfolio. The plan's assets have been placed in trust accounts with the plan administrators for the exclusive benefit of participants and their beneficiaries and are not considered assets of the City.

The City is subject to the State Unemployment Compensation Act and has elected the reimbursing employer option for providing unemployment insurance benefits for eligible former employees. Under this option, the City reimburses the State for claims paid by the State.

Bond Insurance Costs, Bond Premiums Discounts, and Refunding Transactions—Bond insurance costs and bond premiums discounts are deferred and amortized over the term of the related debt, except in the case of refunding debt transactions where the amortization period is over the term of the refunding or refunded debt, whichever is shorter.

Capitalized Interest—Interest expense is capitalized during construction of those capital projects that are paid for from the bond proceeds and are being amortized over the depreciable life of the related assets on a straight-line basis. Interest expense capitalized for 2018 and 2017 totaled \$6.1 million and \$2.8 million, respectively.

Capital Grants—Capital grants are reported as contributed revenue in the statements of revenues, expenses, and changes in net position and are recognized when the related capital expenditure is incurred.

Revenue Recognition—Sewer service revenue is billed as 100% of the City’s water billings and is recorded as revenue when the water is consumed by the customers. Of the accounts receivable balances, \$31.3 million and \$32.4 million represent revenue recognized on sewer service that had not yet been billed to customers at December 31, 2018 and 2017, respectively. Unearned revenue represents amounts collected from nonmetered customers prior to usage.

Revenues and Expenses—The Sewer Fund distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with the Sewer Fund’s principal ongoing operations. The principal operating revenues of the Sewer Fund are charges to customers for sales and services. Operating expenses include the cost of sales and services, pension expense, administrative expenses, and depreciation and amortization on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

Adopted Accounting Standards—GASB Statement No. 85, *Omnibus* (“GASB 85”) addresses practice issues that have been identified during implementation and application of certain GASB Statements. GASB 85 addresses various miscellaneous issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (OPEB). Adoption of GASB 85 had no impact to the Sewer Fund.

GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (“GASB 75”), replaces the requirements of Statements No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*, for OPEB. GASB 75 details the recognition and disclosure requirements for employers with payables to defined benefit OPEB plans that are administered through trusts that meet the specified criteria and for employers whose employees are provided with defined contribution OPEB. GASB 75 states that the provisions of the standard need not be applied to immaterial amounts. The OPEB benefit information pertaining expressly to the Sewer Fund employees was deemed to be immaterial to the Sewer Fund basic financial statements. As such, no liability has been recorded in the accompanying basic financial statements. OPEB liabilities for the City are recorded within the City’s government-wide basic financial statements.

GASB Statement No. 86, *Certain Debt Extinguishment Issues* (“GASB 86”) establishes accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired with only existing resources (resources other than the proceeds of refunding debt) are placed in an irrevocable trust for the sole purpose of extinguishing debt. Adoption of GASB 86 had no impact to the Sewer Fund as historical defeasances of debt have not been from existing resources.

Upcoming Accounting Standards—Other accounting standards that the Sewer Fund is currently reviewing for applicability and potential impact on the financial statements include:

GASB Statement No. 83, *Certain Asset Retirement Obligations* (“GASB 83”) addresses accounting and financial reporting for certain asset retirement obligations (AROs). A government that has legal obligations to perform future asset retirement activities related to its tangible capital assets will have to recognize a liability based on the guidance in this statement. GASB 83 also requires disclosure of information about the nature of a

government's AROs, the methods and assumptions used for the estimates of the liabilities, and the estimated remaining useful life of the associated tangible capital assets. GASB 83 will be effective for the Sewer Fund beginning with its year ending December 31, 2019.

GASB Statement No. 84, *Fiduciary Activities* ("GASB 84") improves the guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. GASB 84 will be effective for the Sewer Fund beginning with its year ending December 31, 2019.

GASB Statement No. 87, *Leases* ("GASB 87") requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. GASB 87 will establish a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under GASB 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. GASB 87 will increase the usefulness of governments' financial statements by requiring reporting of certain lease liabilities that are currently not reported. GASB 87 will be effective for the Sewer Fund beginning with its year ending December 31, 2020.

GASB Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements* ("GASB 88") will improve the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. GASB 88 will be effective for the Sewer Fund beginning with its year ending December 31, 2019.

GASB Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period* ("GASB 89") will enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period. GASB 89 requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. GASB 89 will be effective for the Sewer Fund beginning with its year ending December 31, 2020.

GASB Statement No. 90, *Majority Equity Interests an amendment of GASB Statements No. 14 and No. 61* ("GASB 90") aims to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and the relevance of financial statement information for certain component units. GASB 90 will be effective for the Sewer Fund beginning with its year ending December 31, 2019.

GASB Statement No. 91, *Conduit Debt Obligations* ("GASB 91") provides a single method of reporting conduit debt obligations by issuers and aims to eliminate diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. GASB 91 will be effective for the Sewer Fund beginning with its year ending December 31, 2021.

2. RESTRICTED AND UNRESTRICTED CASH, CASH EQUIVALENTS, AND INVESTMENTS

Cash Equivalents and Investments—As of December 31, 2018, the Sewer Fund had the following cash equivalents and investments (in thousands):

	Maturities (in Years)				Fair Value
	Less than 1	1-5	6-10	More than 10	
U.S. treasuries	\$ 69,751	\$ -	\$ -	\$ -	\$ 69,751
U.S. agencies	-	4,579	9,305	-	13,884
Short-term investments	148,649	-	-	-	148,649
Corporate bonds	-	2,923	692	-	3,615
Municipal bonds	<u>44,779</u>	<u>63,572</u>	<u>-</u>	<u>-</u>	<u>108,351</u>
Subtotal	<u>\$263,179</u>	<u>\$71,074</u>	<u>\$9,997</u>	<u>\$ -</u>	344,250
Share of City's pooled funds					<u>134,142</u>
Total					<u>\$478,392</u>

As of December 31, 2017, the Sewer Fund had the following cash equivalents and investments (in thousands):

	Maturities (in Years)				Fair Value
	Less than 1	1-5	6-10	More than 10	
U.S. treasuries	\$180,550	\$ -	\$ -	\$ -	\$180,550
U.S. agencies	2,496	4,597	9,426	-	16,519
Certificates of deposits and other short-term	104,663	-	-	-	104,663
Corporate bonds	-	2,935	-	-	2,935
Municipal bonds	<u>20,326</u>	<u>88,532</u>	<u>-</u>	<u>-</u>	<u>108,858</u>
Subtotal	<u>\$308,035</u>	<u>\$96,064</u>	<u>\$9,426</u>	<u>\$ -</u>	413,525
Share of City's pooled funds					<u>115,349</u>
Total					<u>\$528,874</u>

U.S. agencies include investments in government-sponsored enterprises, such as Federal National Mortgage Association, Federal Home Loan Banks, and Federal Home Loan Mortgage Corporation.

Investment Fair Value Measurements—The Sewer Fund categorizes the fair value measurements of its investments based the hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation techniques used to measure fair value.

Level 1—Inputs are unadjusted quoted prices in active markets for identical assets

Level 2—Observable inputs other than quoted market prices, and

Level 3—Unobservable Inputs

The investments measured at fair value as of December 31, 2018 and 2017 were (dollars in thousands):

	2018			2017		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
U.S. treasuries	\$ -	\$ -	\$ -	\$ -	\$ 19,902	\$ -
U.S. agencies	-	13,884	-	-	16,519	-
Corporate bonds	-	3,615	-	-	2,935	-
Municipal bonds	-	94,173	-	-	103,525	-
Total investments at fair value	<u>\$ -</u>	<u>\$ 111,672</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 142,881</u>	<u>\$ -</u>

Investments that are valued through other observable inputs (Level 2), are valued using methods that include, but are not limited to, model processes, benchmark curves, benchmarking of like securities, sector groupings, and matrix pricing.

Money market investments and participating interest-earning investment contracts that have a remaining maturity at the time of purchase of one year or less and are held by governments other than the external investment pools are measured at amortized cost and are not reflected in the table above. The total of these investments at amortized cost for Sewer are \$232.6 million and \$270.6 million as of December 31, 2018 and 2017, respectively.

The Sewer Fund's share in the City's pooled fund of \$134.1 million and \$115.3 million as of December 31, 2018 and 2017, respectively, is categorized as Level 2 in the fair value hierarchy; however, pooled funds are not reflected in the table above.

Interest Rate Risk—As a means of limiting its exposure to fair value losses arising from rising interest rates, the City's investment policy requires that investments generally may not have a maturity date in excess of 30 years from the date of purchase. Certain other investments are held in accordance with the specific provisions of applicable ordinances.

Credit Risk—With regard to credit risk, the Code limits the investments in securities to:

- (1) Interest-bearing general obligations of the United States and the State of Illinois;
- (2) United States treasury bills and other non-interest bearing general obligations of the United States or United States government agencies when offered for sale at a price below the face value of same, so as to afford the City a return on such investment in lieu of interest;
- (3) Tax anticipation warrants, municipal bonds, notes, commercial paper or other instruments representing a debt obligation issued by the City;

- (4) Commercial paper which: (1) at the time of purchase, is rated in the two highest classifications by at least two accredited ratings agencies; and (2) matures not more than 270 days after the date of purchase;
- (5) Reverse repurchase agreement if: (1) the term does not exceed 90 days; and (2) the maturity of the investment acquired with the proceeds of the reverse repurchase agreement does not exceed the expiration date of the reverse repurchase agreement; Reverse repurchase agreements may be transacted with primary dealers and financial institutions, provided that the City has on file a master repurchase agreement;
- (6) Certificates of deposit of banks or savings and loan associations designated as municipal depositories which are insured by federal deposit insurance; provided that any amount of the deposit in excess of the federal deposit insurance shall be collateralized as noted in Custodial Credit Risk—Cash and Certificates of Deposit below;
- (7) Bankers acceptance of banks whose senior obligations, at the time of purchase, are rated in either the AAA or AA rating categories by at least two accredited ratings agencies;
- (8) Tax-exempt securities exempt from federal arbitrage provisions applicable to investments of proceeds of the City's tax-exempt debt obligations;
- (9) Domestic money market mutual funds regulated by and in good standing with the Securities and Exchange Commission; provided that such money market mutual funds' portfolios are limited to investments authorized by this section;
- (10) Any other suitable investment instrument permitted by state laws governing municipal investments generally, subject to the reasonable exercise of prudence in making investments of public funds;
- (11) Except where otherwise restricted or prohibited, a non-interest-bearing savings account, non-interest-bearing checking account or other non-interest bearing demand account established in a national or state bank, or a federal or state savings and loan association, when, in the determination of the treasurer, the placement of such funds in the non-interest bearing account is used as compensating balances to offset fees associated with that account that will result in cost savings to the City;
- (12) Bonds of companies organized in the United States with assets exceeding \$1.0 billion that, at the time of purchase, are rated not less than A-, or equivalent rating, by at least two accredited ratings agencies;
- (13) Debt instruments of international financial institutions, including but not limited to the World Bank and the International Monetary Fund, that, at the time of purchase, are rated within 4 intermediate credit ratings of the United States sovereign credit rating by at least two accredited ratings agencies, but not less than an A-rating, or equivalent rating. For purposes of this subsection, an "international financial institution" means a financial institution that has been established or chartered by more than one country and the owners or shareholders are generally national governments or other international institutions such as the United Nations;
- (14) United States dollar denominated debt instruments of foreign sovereignties that, at the time of purchase, are rated within 4 intermediate credit ratings of the United States sovereign credit rating by at least two accredited ratings agencies, but not less than an A-rating or equivalent rating;

- (15) Interest-bearing bonds of any county, township, city, village, incorporated town, municipal corporation, or school district, of the State of Illinois, of any other state, or of any political subdivision or agency of the State of Illinois or of any other state, whether the interest earned thereon is taxable or tax-exempt under federal law. The bonds shall be registered in the name of the city or held under a custodial agreement at a bank. The bonds shall be rated, at the time of purchase, not less than A-, or equivalent rating, by at least two accredited rating agencies with nationally recognized expertise in rating bonds of states and their political subdivisions;
- (16) Bonds registered and regulated by the Securities and Exchange Commission and for which the full faith and credit of the State of Israel is pledged for payment; provided that the bonds have an A-rating or above or equivalent rating by at least two accredited ratings agencies;
- (17) Bonds, notes, debentures, or other similar obligations of agencies of the United States rated, at the time of purchase, no less than AAA by at least two accredited rating agencies.

Total holdings across all funds held by the Sewer Fund shall have no less than an overall average rating of Aa1 on a quarterly basis, as rated by two accredited rating agencies. A schedule summarizing the Sewer Fund's exposure to credit risk as of December 31, 2018 and 2017, is as follows (in thousands):

Quality Rating	2018	2017
Aaa/AAA*	\$153,246	\$112,382
Aa/AA	191,004	296,324
A/A	<u>-</u>	<u>4,819</u>
Total	<u>\$344,250</u>	<u>\$413,525</u>

* The Sewer Fund was able to obtain quality ratings for a portion of money market mutual funds as of December 31, 2018 that were previously classified as not rated. The remaining investments that are not rated are primarily composed of money market mutual funds.

The Sewer Fund participates in the City's pooled cash and investments account, which includes amounts from other City funds and is maintained by the City Treasurer. Individual cash or investments are not specifically identifiable to any participant in the pool. The City Treasurer's pooled fund is included in the City's Comprehensive Annual Financial Statements.

Custodial Credit Risk—Cash and Certificates of Deposit—This is the risk that in the event of a bank failure, the City's Deposits may not be returned. The City's Investment Policy states that in order to protect the City's public fund deposits, depository institutions are to maintain collateral pledges on City deposits and certificates of deposit during the term of the deposit.

For certificates of deposit of banks or savings and loan associations designated as municipal depositories which are insured by federal deposit insurance, any amount of the deposit in excess of the federal deposit insurance shall be either: (1) fully collateralized at least 102% by: (i) marketable U.S. government securities marked to market at least monthly; (ii) bonds, notes, or other securities constituting the direct and general obligation of any agency or instrumentality of the United States; or (iii) bonds, notes or other securities constituting a direct and general obligation of any county, township, city, village, incorporated town, municipal corporation, or school district, of the State of Illinois or of any other state, or of any political subdivision or agency of the State of Illinois or any other state which are rated in either the AAA or AA rating categories by at least two accredited ratings agencies and maintaining such rating during the term of such investments; (2) secured by a corporate surety bond issued by an insurance company licensed to do business in Illinois and having a claims-paying rating in the top rating category as rated by a nationally recognized statistical rating organization and maintaining such rating during the term of such investment; or (3) fully collateralized at least 102% by an irrevocable letter of credit issued in favor of the City of Chicago by the Federal Home Loan Bank, provided that the Federal Home Loan Bank's short-term debt obligations are rated in the highest rating category by at least one accredited ratings agency throughout the term of the certificate of deposit.

The collateral required to secure City funds must be held in safekeeping and pursuant to collateral agreements which would prohibit release or substitution of pledged assets without proper written notification and authorization of the City Treasurer. The final maturity of acceptable collateral pledged shall not exceed 120 months.

The bank balance of cash and certificates of deposit with the City's various municipal depositories was \$1,035.1 million. 97.7% of the bank balance was either insured or collateralized with securities held by City agents in the City's name. \$23.7 million was uncollateralized at December 31, 2018, and thus was subject to custodial credit risk.

A schedule summarizing the investments reported in the basic financial statements as of December 31, 2018 and 2017, is as follows (in thousands):

	2018	2017
Per Note 2:		
Investments—Sewer Fund	\$344,250	\$413,525
Investments—City Treasurer pooled fund	<u>134,142</u>	<u>115,349</u>
	<u>\$478,392</u>	<u>\$528,874</u>
Per financial statements:		
Restricted investments—current	\$ 14,249	\$108,324
Restricted investments—noncurrent	156,439	200,538
Unrestricted investments	97,690	102,703
Investments included as cash and cash equivalents on the statements of net position	<u>210,014</u>	<u>117,309</u>
	<u>\$478,392</u>	<u>\$528,874</u>

3. RESTRICTED ASSETS AND ACCOUNTS

Sewer service revenues are pledged to pay outstanding Wastewater Revenue Bonds. The ordinances authorizing the issuance of outstanding Wastewater Revenue Bonds provide for the creation of separate accounts into which net revenues, as defined, or proceeds to be credited, are as follows:

Wastewater Revenue Bonds, 1998A Wastewater Capital Appreciation Bonds and the Senior Lien Bonds.

Bond Principal and Interest Account—No later than 10 days prior to each principal or interest payment date, an amount to pay principal; premium, if any; and interest becoming due, whether upon maturity, redemption, or otherwise.

Debt Service Reserve Account—For each series, an amount equal to the least of (i) the maximum annual debt service requirement; (ii) 10% of the original principal amount, less original issue discount; or (iii) 125% of the average annual debt service requirement. The required balance in this account was met by the purchase of surety bonds.

Construction Account—Proceeds of the Senior Lien Bonds were deposited in this account for the purpose of paying construction costs of projects as defined in the ordinance.

Wastewater Revenue Bonds, Series 2017, 2015, 2014, 2012, 2010, 2008, 2001,(the "Second Lien Bonds").

Bond Principal and Interest Account—No later than the business day immediately preceding January 1 and July 1, an amount to pay principal; redemption premium, if any; and interest on the bonds. The City is also required to make deposits in the Second Lien Bonds' account to meet other payment obligations under the indenture authorizing Second Lien Parity Bonds.

Debt Service Reserve Account—For each series, an amount equal to the least of (i) the highest future debt service requirement; (ii) 10% of the original principal amount, less original issue discount; or (iii) 125% of the average annual debt service requirement. The required balance in this account was met by the purchase of a surety bond.

Construction Account—Proceeds of the Second Lien Bonds were deposited in this account for the purpose of paying construction cost of projects as defined in the ordinance.

Sewer Rate Stabilization Account—Any net revenues remaining after providing sufficient funds for all required deposits in the bond accounts may be transferred to the sewer rate stabilization account upon the direction of the City to be used for any lawful purpose of the Sewer Fund.

For accounts established by ordinances with balances, the amounts as of December 31, 2018 and 2017, are as follows (in thousands):

	2018	2017
Construction	\$201,908	\$283,460
Bond principal and interest	105,437	100,866
Sewer rate stabilization	<u>36,902</u>	<u>32,196</u>
Total	<u>\$344,247</u>	<u>\$416,522</u>

The 2018 and 2017 Sewer rate stabilization balance above includes a fair value adjustment of \$955 thousand and \$655 thousand, respectively.

At December 31, 2018 and 2017, management was not aware of any instances of noncompliance with the above terms of the ordinances.

4. LONG-TERM DEBT

As of December 31, 2018 and 2017, long-term debt consisted of the following (in thousands):

	2018	2017
\$62,423 Series 1998A Wastewater Transmission Revenue Bonds issued April 7, 1998, due through 2028; interest at 4.55% to 5.0%	\$ 35,168	\$ 35,168
\$73,100 Series 2001 Wastewater Transmission Revenue Bonds issued December 6, 2001, due through 2030; interest at 4.0% to 5.5%	46,775	50,925
\$167,635 Series 2008A Wastewater Transmission Revenue Bonds issued November 18, 2008, due through 2038; interest at 3.5% to 5.5%	8,375	12,255
\$332,230 Series 2008C Wastewater Transmission Revenue Bonds (2004A Refunded) issued October 16, 2008, due through 2039; interest rate at 4.0% to 5.0%	300,575	316,780
\$275,865 Series 2010A & B Wastewater Transmission Revenue Bonds issued November 16, 2010, due through 2040; interest at 2.0% to 6.9%	254,365	258,440
\$1,546 Illinois Environmental Protection Agency Loan Agreement signed May 28, 2008, due through 2027; interest at 2.50%	795	874
\$276,470 Series 2012 Wastewater Transmission Revenue Bonds issued September 13, 2012, due through 2042; interest at 3.0% to 5.0%	250,560	256,165
\$15,000 Illinois Environmental Protection Agency Loan Agreement signed January 20, 2010, due through 2031; interest at 0%	9,563	10,328
\$17,812 Illinois Environmental Protection Agency Loan Agreement signed October 8, 2010, due through 2032; interest at 1.25%	13,218	14,077
\$17,564 Illinois Environmental Protection Agency Loan Agreement signed September 22, 2011, due through 2033; interest at 1.25%	13,458	14,300
\$15,000 Illinois Environmental Protection Agency Loan Agreement signed October 2, 2012, due through 2034; interest at 2.295%	12,519	13,160
\$292,405 Series 2014 Wastewater Transmission Revenue Bonds issued September 22, 2014, due through 2044; interest at 3.0% to 5.0%	277,600	282,770
\$87,080 Series 2015 Bonds issued October 19, 2015 due through January 1, 2039; interest at 2.59% to 6.04%	84,815	87,080
\$54,170 Illinois Environmental Protection Agency Loan Agreement signed October 22, 2013, due through 2035; interest at 1.93%	48,349	50,732
\$56,198 Illinois Environmental Protection Agency Loan Agreement signed October 8, 2014, due through 2036; interest at 1.99%	51,512	53,950
\$4,118 Illinois Environmental Protection Agency Loan Agreement signed January 22, 2016, due through 2036; interest at 1.86%	4,033	4,039
\$4,263 Illinois Environmental Protection Agency Loan Agreement signed November 4, 2016, due through 2037; interest at 1.75%	5,849	4,263
\$180,590 Series 2017A Wastewater Transmission Revenue Bonds issued June 21, 2017, due through 2052; interest at 4.0% to 5.25%	180,590	180,590
\$215,485 Series 2017B Wastewater Transmission Revenue Bonds issued June 21, 2017, due through 2044; interest at 5.0%	208,970	215,485
\$63,793 Illinois Environmental Protection Agency Loan Agreement signed May 17, 2016, due through 2038; interest at 1.86%	62,610	-
\$23,861 Illinois Environmental Protection Agency Loan Agreement signed May 16, 2017, due through 2038; interest at 1.75%	23,862	-
Total revenue bonds	1,893,561	1,861,381
Add accretion of Series 1998A Capital Appreciation Bonds	69,465	64,105
Add unamortized net bond premium/(discount)	104,893	113,074
Less current portion (payable from restricted assets)	(62,346)	(56,201)
Long-term portion—net	<u>\$ 2,005,573</u>	<u>\$ 1,982,359</u>

Long-term debt during the years ended December 31, 2018 and 2017, changed as follows (dollars in thousands):

	Balance January 1, 2018	Additions	Reductions	Balance December 31, 2018	Due within One Year
Revenue bonds and loans	\$ 1,861,381	\$ 89,597	\$ (57,417)	\$ 1,893,561	\$ 62,346
Accretion of Series 1998 capital appreciation bonds	64,105	5,360	-	69,465	-
Unamortized net discount/premium	<u>113,074</u>	<u>-</u>	<u>(8,181)</u>	<u>104,893</u>	<u>-</u>
Total revenue bonds and loans	<u>\$ 2,038,560</u>	<u>\$ 94,957</u>	<u>\$ (65,598)</u>	<u>\$ 2,067,919</u>	<u>\$ 62,346</u>
	Balance January 1, 2017	Additions	Reductions	Balance December 31, 2017	Due within One Year
Revenue bonds and loans	\$ 1,692,820	\$ 460,654	\$ (292,093)	\$ 1,861,381	\$ 56,201
Accretion of Series 1998 capital appreciation bonds	59,018	5,087	-	64,105	-
Unamortized net discount/premium	<u>77,642</u>	<u>45,720</u>	<u>(10,288)</u>	<u>113,074</u>	<u>-</u>
Total revenue bonds and loans	<u>\$ 1,829,480</u>	<u>\$ 511,461</u>	<u>\$ (302,381)</u>	<u>\$ 2,038,560</u>	<u>\$ 56,201</u>

Interest expense includes amortization of the loss on bond refunding for 2018 and 2017 of \$2.2 million and \$1.5 million; less amortization of net bond discount/premium of \$8.2 million and \$7.2 million, respectively; and accretion of Series 1998A capital appreciation bonds of \$5.4 million and \$5.1 million, respectively.

As defined in the ordinances, net revenues are pledged for the payment of principal and interest on the bonds. The ordinances require that net revenues available for bonds equal 115% of the senior lien debt service requirement and that net revenues available for bonds equal the sum of 100% of the aggregate annual senior lien debt service requirement and 100% of the aggregate annual second lien debt service requirement and 115% of the annual subordinate lien debt service requirement and annual debt service requirement for the fiscal year on aggregate outstanding debt service on any outstanding Illinois Environmental Protection Agency (IEPA) loans, wastewater line of credit and commercial paper notes. The above requirements were met for 2018 and 2017.

Rate Increases—Sewer service rates are set by ordinance. The sewer service charge is established in an amount designed to pay the costs of Sewer Fund operations and capital improvements, including any related debt service. During 2018 and 2017, the charge for sewer service was increased and was an amount equal to 1.54% of the gross amount charged for water service, whether such water service is metered or nonmetered. The rate charged for water effective June 1, 2018, increased to \$29.49 per 1,000 cubic feet.

Issuance of Debt—A loan agreement was signed on May 17, 2016, with the Illinois Environment Protection Agency to line approximately 157 miles of existing sewer main. In 2018, the Sewer Fund drew \$63.8 million from this loan agreement. The loan agreement has an interest rate of 1.86% with the maturity dates from November 1, 2018 to May 30, 2038.

A loan agreement was signed on January 22, 2016, with the Illinois Environment Protection Agency to install approximately 4,900 lineal feet of reinforced concrete sewer main ranging from 36 to 72 inch diameter pipe on the 56th street corridor. The amount drawn from this loan agreement by the Sewer Fund in 2017 was \$4.0 million. In 2018, the Sewer Fund drew an additional \$0.2 million from this loan agreement. Total funds drawn from this loan agreement are \$4.3 million. The loan agreement has an interest rate of 1.86% with the maturity dates from August 18, 2016 to August 18, 2036.

A loan agreement was signed on November 4, 2016, with the Illinois Environment Protection Agency to install approximately 5,300 lineal feet of reinforced concrete sewer main ranging from 24 to 55 inch diameter pipe on Avenue "L" corridor. The amount drawn from this loan agreement by the Sewer Fund in 2017 was \$4.3 million. In 2018, the Sewer Fund drew an additional \$1.8 million from this loan agreement. Total funds drawn from this loan agreement are \$6.1 million. The loan agreement has an interest rate of 1.75% with the maturity dates from May 3, 2018 to November 3, 2037.

A loan agreement signed on May 16, 2017, with the Illinois Environment Protection Agency as part of a 5-year rehabilitation program conducted throughout the city. Approximately 27,600 linear feet of 12 to 60 inch diameter sewer main will replace existing aging sewer main. In 2018, the Sewer Fund drew \$23.9 million from this loan agreement. Total funds drawn from this loan agreement is \$23.9 million. The loan agreement has an interest rate of 1.75% with the maturity dates of May 7, 2019 to November 7, 2038.

Following is a schedule of debt service requirements to maturity (in thousands):

December 31	Principal	Interest	Total Debt Service
2019	\$ 62,346	\$ 87,652	\$ 149,998
2020	60,322	92,302	152,624
2021	60,344	92,318	152,662
2022	62,491	90,224	152,715
2023	64,895	87,864	152,759
2024–2028	349,225	414,838	764,063
2029–2033	418,326	263,780	682,106
2034–2038	465,722	151,712	617,434
2039–2043	251,205	47,427	298,632
2044–2048	59,215	13,233	72,448
2049–2052	<u>39,470</u>	<u>3,235</u>	<u>42,705</u>
Total	<u>\$ 1,893,561</u>	<u>\$ 1,344,585</u>	<u>\$ 3,238,146</u>

Defeased Bonds—Defeased bonds have been removed from the balance sheet because the related assets have been placed in irrevocable trusts, together with interest earned thereon, will provide amount sufficient for payment of all principal and interest. There were no outstanding defeased bonds as of December 31, 2018.

Debt Covenants—The ordinances authorizing the issuance of outstanding Wastewater Transmission Revenue Bonds provide for the creation of separate accounts into which monies will be deposited, as appropriate. The ordinances require that net revenues available for bonds, as adjusted shall each fiscal year at least equal (A) 115% of the aggregate debt service requirement for the fiscal year on the outstanding senior lien bonds, plus (B) the sum of the aggregate annual debt service requirements for the fiscal

year on of the outstanding second lien bonds, plus (C) 115% of the aggregate outstanding debt service requirements for the fiscal year on of the outstanding IEPA loans, plus (D) annual debt service requirement for the fiscal year on aggregate outstanding debt service on any outstanding wastewater line of credit and commercial paper notes. This requirement was met at December 31, 2018.

5. UTILITY PLANT

During the years ended December 31, 2018 and 2017, utility plant changed as follows (in thousands):

	Balance January 1, 2018	Additions	Disposals and Transfers	Balance December 31, 2018
Utility plant not depreciated:				
Land and land rights	\$ 560	\$ -	\$ -	\$ 560
Construction in progress	<u>88,343</u>	<u>62,614</u>	<u>(59,032)</u>	<u>91,925</u>
Total utility plant not depreciated	<u>88,903</u>	<u>62,614</u>	<u>(59,032)</u>	<u>92,485</u>
Utility plant being depreciated:				
Facilities and structures	3,071,099	234,644	(35,159)	3,270,584
Furniture and equipment	<u>30,923</u>	<u>2,826</u>	<u>(276)</u>	<u>33,473</u>
Total utility plant being depreciated	<u>3,102,022</u>	<u>237,470</u>	<u>(35,435)</u>	<u>3,304,057</u>
Less accumulated depreciation:				
Facilities and structures	(591,482)	(45,651)	513	(636,620)
Furniture and equipment	<u>(23,384)</u>	<u>(1,445)</u>	<u>276</u>	<u>(24,553)</u>
Total accumulated depreciation	<u>(614,866)</u>	<u>(47,096)</u>	<u>789</u>	<u>(661,173)</u>
Utility plant being depreciated—net	<u>2,487,156</u>	<u>190,374</u>	<u>(34,646)</u>	<u>2,642,884</u>
Utility plant—net	<u>\$ 2,576,059</u>	<u>\$ 252,988</u>	<u>\$ (93,678)</u>	<u>\$ 2,735,369</u>

	Balance January 1, 2017	Additions	Disposals and Transfers	Balance December 31, 2017
Utility plant not depreciated:				
Land and land rights	\$ 560	\$ -	\$ -	\$ 560
Construction in progress	<u>35,498</u>	<u>65,463</u>	<u>(12,618)</u>	<u>88,343</u>
Total utility plant not depreciated	<u>36,058</u>	<u>65,463</u>	<u>(12,618)</u>	<u>88,903</u>
Utility plant being depreciated:				
Facilities and structures	2,958,973	144,247	(32,121)	3,071,099
Furniture and equipment	<u>31,006</u>	<u>97</u>	<u>(180)</u>	<u>30,923</u>
Total utility plant being depreciated	<u>2,989,979</u>	<u>144,344</u>	<u>(32,301)</u>	<u>3,102,022</u>
Less accumulated depreciation:				
Facilities and structures	(548,233)	(43,249)	-	(591,482)
Furniture and equipment	<u>(21,844)</u>	<u>(1,721)</u>	<u>181</u>	<u>(23,384)</u>
Total accumulated depreciation	<u>(570,077)</u>	<u>(44,970)</u>	<u>181</u>	<u>(614,866)</u>
Utility plant being depreciated—net	<u>2,419,902</u>	<u>99,374</u>	<u>(32,120)</u>	<u>2,487,156</u>
Utility plant—net	<u>\$ 2,455,960</u>	<u>\$ 164,837</u>	<u>\$ (44,738)</u>	<u>\$ 2,576,059</u>

6. PENSION PLANS

Plan Description—Eligible Sewer Fund employees participate in one of two single-employer defined benefit pension plans (Plans). These Plans are: the Municipal Employees' Annuity and Benefit Fund of Chicago (Municipal Employees'); and the Laborers' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Laborers'). The Plans are administered by individual retirement boards of trustees comprised of City officials or their designees and of trustees elected by plan members. Certain employees of the Chicago Board of Education participate in the Municipal Employees' Fund or the Laborers' and Retirement Board Employees' Annuity and Benefit Fund. Each plan issues a publicly available financial report that includes financial statements and required supplementary information that can be obtained at www.meabf.org and www.labfchicago.org.

Benefits Provided—The Plans provide retirement, disability, and death benefits as established by State law. Benefits generally vest after 10 years of credited service. Employees qualify for an unreduced retirement age minimum formula annuity based on a combination of years of service and age of retirement. Employees may also receive a reduced retirement age minimum formula annuity if they do not meet the age and service requirements for the unreduced retirement age annuity. The requirements of age and service are different for employees depending on when they first became members of their respective Plans. For all the Plans, employees who became members before January 1, 2011 are considered Tier 1 Employees. For those employees who became members on or after January 1, 2011 but before July 6, 2017 are considered Tier 2 Employees. For those employees who became members on or after July 6, 2017 are considered Tier 3 Employees. Public Act 100-0023 (P.A. 100-0023), which established the requirements for Tier 3 employees, includes a provision for Tier 2 employees to elect to be considered as Tier 3 employees. The annuity is computed by multiplying the final average salary by a percentage ranging from 2.2% to 2.5% per year of credited service. The final average salary is the employee's highest average annual salary for any four consecutive years

within the last 10 years of credited service for participants who are Tier 1 Employees and any eight consecutive years within the last 10 years of credited service for participants who are Tier 2 Employees or Tier 3 Employees.

Benefit terms provide for annual adjustments to each employee’s retirement allowance subsequent to the employees’ retirement date. For Tier 1 Employees, the annual adjustments for Municipal Employees’ and Laborers’ are 3.0%, compounded, for annuitants born before January 1, 1966 and 1.5%, simple, born after January 1, 1966 or later. For Tier 2 Employees and Tier 3 Employees, the annual adjustments are equal to the lesser of 3.0% and 50% of CPI-U of the original benefit.

Employees Covered by Benefit Terms—At December 31, 2018, the following City employees were covered by the benefit terms:

	Municipal Employees’	Laborers’	Total
Inactive employees or beneficiaries currently receiving benefits	25,577	3,688	29,265
Inactive employees entitled to but not yet receiving benefits	17,575	1,489	19,064
Active employees	<u>31,285</u>	<u>2,715</u>	<u>34,000</u>
	<u>74,437</u>	<u>7,892</u>	<u>82,329</u>

Contributions—For the Municipal Employees’ and Laborers’ Plans, Public Act 100-0023 (P.A. 100-0023) was enacted on July 6, 2017. P.A. 100-0023 requires the City to contribute specific amounts to the Municipal Employees’ and the Laborers’ Plans in the aggregate amounts as follows: in payment year 2018, \$302.0 million; in payment year 2019, \$392.0 million; in payment year 2020, \$481.0 million; in payment year 2021, \$571.0 million; and in payment year 2022, \$660.0 million. Additionally, P.A. 100-0023 requires that the City’s contributions are at actuarially determined rates beginning in payment year 2023 and future funding be sufficient to produce a funding level of 90% by the year end of 2058.

The City’s contributions are budgeted in the same year as the applicable levy year for the property taxes funding the contributions. The City’s contributions are then paid to the pension funds in the following year (which is when the levy property taxes are collected and paid to the City by the Cook County Treasurer). The Sewer Fund’s proportion of the contribution was determined based on the rates of Sewer Fund’s salaries within each corresponding pension plan to the total budgeted salaries for 2018.

The contribution to the two pension plans from the Sewer Fund was \$12.7 million and \$9.5 million for the years ended December 31, 2018 and 2017, respectively.

Net Pension Liability, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions—At December 31, 2018 and 2017, the Sewer Fund reported a liability of \$453.7 million and \$392.6 million, respectively, for its proportionate share of the net pension liability. The net pension liability was measured as of December 31, 2018 and 2017, respectively, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

The Sewer Fund's proportion of the net pension liability was determined based on the rates of budgeted Sewer Fund's salaries within each corresponding pension plan to the total budgeted salaries for 2018 and 2017. At December 31, 2018 and 2017, the Sewer Fund's proportion was 2.0% of the Municipal Employees' Plan and 12.0% and 11.2%, respectively, of the Laborers' Plan.

For the years ended December 31, 2018 and 2017, the Sewer Fund recognized pension expense of \$18.9 million and \$34.4 million, respectively.

At December 31, 2018 and 2017, the Sewer Fund reported total deferred outflows of resources of \$55.0 million and \$95.7 million, respectively, and deferred inflows of resources of \$159.7 million and \$243.6 million related to pensions from the following sources:

Municipal Employees' (dollars in thousands):

	2018		2017	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 1,548	\$ 3,635	\$ -	\$ 5,359
Changes of assumptions	35,293	95,006	71,172	128,515
Net difference between projected and actual earnings on pension plan investments	<u>5,824</u>	<u>-</u>	<u>-</u>	<u>2,243</u>
Total	<u>\$42,665</u>	<u>\$98,641</u>	<u>\$71,172</u>	<u>\$136,117</u>

Amounts reported as deferred outflows of resources and deferred inflows of resources related to Municipal Employees' pensions will be recognized in pension expense/(benefit) as follows:

**Year Ended
December 31**

2019	\$ 3,554
2020	(32,299)
2021	(29,628)
2022	<u>2,397</u>
Total	<u>\$(55,976)</u>

Laborers' (dollars in thousands):

	<u>2018</u>		<u>2017</u>	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 1,388	\$ 3,701	\$ -	\$ 7,104
Changes of assumptions	-	57,403	17,043	89,158
Net difference between projected and actual earnings on pension plan investments	<u>10,909</u>	<u>-</u>	<u>7,503</u>	<u>11,178</u>
Total	<u>\$12,297</u>	<u>\$61,104</u>	<u>\$24,546</u>	<u>\$107,440</u>

Amounts reported as deferred outflows of resources and deferred inflows of resources related to Laborers' pensions will be recognized in pension benefit as follows:

**Year Ended
December 31**

2019	\$ (36,104)
2020	(17,577)
2021	979
2022	<u>3,895</u>
Total	<u>\$ (48,807)</u>

Deferred Inflows Related to Changes in Proportionate Share of Contributions—For the years ended December 31, 2018 and 2017, the Sewer Fund reported pension benefit/(charge) of \$2.5 million and \$0.9 million, respectively, related to changes in proportionate share of contributions. As of December 31, 2018 and 2017, the Sewer Fund reported deferred inflows of \$1.8 million and \$3.3 million, respectively, and deferred outflows of \$12.2 million and \$1.9 million, respectively, related to changes in its proportionate share of contributions. This deferred amount will be recognized as a pension benefit/(charge) over a period of four years.

Actuarial Assumptions—The total pension liability in the December 31, 2018 and 2017 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

	Municipal Employees'		Laborers'
Inflation	2.50 %		2.25 %
Salary increases	3.50–7.75	(a)	3.00 (b)
Investment rate of return	7.00	(c)	7.25 (c)

(a) (1.50%–6.50% for 2019–2022), varying by years of service

(b) Plus a service—based increase in the first 9 years

(c) Net of investment expense

Post-retirement Mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table (Blue Collar mortality table for Laborers') for males or females, as appropriate. Pre-retirement mortality rates were based on RP-2014 Employee Mortality Table (Blue Collar mortality table for Laborers'). Disabled mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table (Blue Collar mortality table for Laborers'). The actuarial assumptions used in the December 31, 2018 valuation were adjusted based on the results of actuarial experience study for the periods:

Municipal Employees'—January 1, 2012–December 31, 2016

Laborers'—January 1, 2012–December 31, 2016

The long term expected rate of return on pension plan investments was determined using the building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class as of December 31, 2018 and 2017, are summarized in the following table:

2018	Target Allocation		Long-Term Expected Real Rate of Return	
	Municipal Employees'	Laborers'	Municipal Employees'	Laborers'
Asset class:				
Domestic equity	26.0 %	- %	5.1 %	- %
U.S. equity	-	25.0	-	5.7
Non U.S. equity	-	20.0	-	5.2
Global low volatility equity	-	5.0	-	4.7
Infrastructure	2.0	-	5.0	-
International equity	22.0	-	5.3	-
Fixed income	25.0	20.0	0.8	(0.1)
Hedge funds	10.0	10.0	3.4	3.5
Private debt	-	3.0	-	7.6
Private equity	5.0	4.0	8.3	8.7
Real estate	10.0	10.0	4.7	4.9
Private real assets	-	3.0	-	5.3
Total	<u>100.0 %</u>	<u>100.0 %</u>		

2017	Target Allocation		Long-Term Expected Real Rate of Return	
	Municipal Employees'	Laborers'	Municipal Employees'	Laborers'
Asset class:				
Domestic equity	26.0 %	- %	5.6 %	- %
U.S. equity	-	25.0	-	5.8
Non U.S. equity	-	20.0	-	5.7
Global low volatility equity	-	5.0	-	5.0
International equity	22.0	-	5.7	-
Fixed income	27.0	20.0	1.0	(0.2)
Hedge funds	10.0	10.0	3.6	3.6
Private debt	-	3.0	-	8.2
Private equity	5.0	4.0	9.4	9.4
Real estate	10.0	10.0	5.4	5.4
Private real assets	-	3.0	-	5.8
Total	<u>100.0 %</u>	<u>100.0 %</u>		

Discount Rate

Municipal Employees’—The discount rate used to measure the total pension liability as of December 31, 2018 and 2017 was 7.0%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made according to the contribution rate applicable for each member’s tier and that employer contributions will be made as specified by Public Act 100-0023. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Laborers’—A Single Discount Rate of 7.11% and 7.07% was used to measure the total pension liability as of December 31, 2018 and 2017, respectively. This Single Discount Rate was based on an expected rate of return on pension plan investments of 7.25% as of December 31, 2018 and 2017, and a municipal bond rate of 3.71% and 3.31% as of December 31, 2018 and 2017, respectively (based on the rate closest to but not later than the measurement date of the “20-Year Municipal GO AA Index” rate from Fidelity Index). The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at under the statutory funding policy. Based on these assumptions, the pension plan’s fiduciary net position and future contributions were sufficient to finance the benefit payments only through the year 2072. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2072, and the municipal bond rate was applied to all benefit payments after that date.

Sensitivity of the Sewer Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

Municipal Employees’—The following presents the Sewer Fund’s allocated share of the net pension liability as of December 31, 2018 and 2017, calculated using the discount rate of 7.0%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate (dollars in thousands):

Net Pension Liability December 31, 2018	Current		
	1% Decrease	Discount Rate	1% Increase
Municipal Employees’ discount rate	6.00 %	7.00 %	8.00 %
Municipal Employees’ net pension liability	\$304,217	\$261,188	\$225,504

Net Pension Liability December 31, 2017	Current		
	1% Decrease	Discount Rate	1% Increase
Municipal Employees’ discount rate	6.00 %	7.00 %	8.00 %
Municipal Employees’ net pension liability	\$282,012	\$239,542	\$204,366

Laborers’—The following presents the Sewer Fund’s allocated share of the net pension liability as of December 31, 2018 and 2017, calculated using the discount rate of 7.11% and 7.07%, respectively, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower or 1 percentage point higher than the current rate (dollars in thousands):

Net Pension Liability December 31, 2018	Current		
	1% Decrease	Discount Rate	1% Increase
Laborers’ discount rate	6.11 %	7.11 %	8.11 %
Laborers’ net pension liability	\$231,214	\$192,479	\$160,039

Net Pension Liability December 31, 2017	Current		
	1% Decrease	Discount Rate	1% Increase
Laborers’ discount rate	6.07 %	7.07 %	8.07 %
Laborers’ net pension liability	\$188,768	\$153,060	\$123,193

Pension Plan Fiduciary Net Position—Detailed information about the pension plan’s fiduciary net position is available in the separately issued Pension Plan’s financial reports.

7. RELATED-PARTY TRANSACTIONS

Included in operating expenses are reimbursements to the General Fund of the City and certain other funds for services provided by other City departments, employee fringe benefits, and certain payments made on behalf of the Sewer Fund. Such reimbursements amounted to \$70.1 million and \$81.9 million in 2018 and 2017, respectively.

8. COMMITMENTS AND CONTINGENCIES

The Sewer Fund has certain contingent liabilities resulting from litigation, claims, or commitments incident to the ordinary course of business. Management expects that final resolution of these contingencies will not have a material adverse effect on the financial position or results of operations of the Sewer Fund.

The Sewer Fund provides workers’ compensation benefits and employee health benefits under self-insurance programs administered by the City. Such claims outstanding, including claims incurred but not reported, are estimated and recorded as liabilities in the basic financial statements.

Uninsured claim expenditures and liabilities are reported when it is probable that a loss has occurred and the amount of that loss can be reasonably estimated. These losses include an estimate for claims that have been incurred, but not reported. Changes in the claims liability amount for the years ended December 31, 2018 and 2017, are as follows (in thousands):

	2018	2017
Balance—January 1	\$ 22,378	\$ 22,628
Claims incurred on current and prior-year events	12,796	11,240
Claims paid on current and prior-year events	<u>(12,624)</u>	<u>(11,490)</u>
Balance—December 31	<u>\$ 22,550</u>	<u>\$ 22,378</u>

The City purchases annuity contracts from commercial insurers to satisfy certain liabilities; accordingly, no liability is reported for those claims. Property and casualty risks for the Sewer Fund are transferred to commercial insurers. Claims have not exceeded the purchased insurance coverage in the past three years.

At December 31, 2018 and 2017, the Sewer Fund entered into contracts with outstanding commitments of approximately \$386.4 million and \$115.6 million, respectively, for construction projects.

9. DEFERRED OUTFLOWS/INFLOWS OF RESOURCES

(In thousands)	2018	2017
Deferred outflows of resources:		
Deferred outflows from pension activities	\$ 54,962	\$ 95,718
Changes in proportionate share of pension contribution	12,228	1,871
Unamortized deferred bond refunding costs	<u>8,630</u>	<u>10,832</u>
Total deferred outflows of resources	<u>\$ 75,820</u>	<u>\$ 108,421</u>
Deferred inflows of resources:		
Deferred inflows from pension activities	\$(159,745)	\$(243,556)
Changes in proportionate share of pension contribution	<u>(1,784)</u>	<u>(3,246)</u>
Total deferred inflows of resources	<u>\$(161,529)</u>	<u>\$(246,802)</u>

10. SUBSEQUENT EVENTS

The Sewer Fund has evaluated subsequent events through June 25, 2019, the date the financial statements were available to be issued and concluded no subsequent events have occurred that would require recognition that have not already been recognized or that require disclosure that have not already been disclosed.

* * * * *

REQUIRED SUPPLEMENTAL INFORMATION

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS
LAST THREE FISCAL YEARS
(Dollars in thousands)**

Municipal Employees'	2018	2017	2016	2015
TOTAL PENSION LIABILITY:				
Service cost*	\$ 223,528	\$ 572,534	\$ 619,743	\$ 226,816
Interest	1,123,348	915,711	878,369	909,067
Benefit changes	-	-	-	2,140,009
Differences between expected and actual experience	95,540	(177,755)	(127,119)	(109,835)
Assumption changes	-	(7,431,191)	(578,920)	8,711,755
Benefit payments including refunds	<u>(916,198)</u>	<u>(888,174)</u>	<u>(859,672)</u>	<u>(826,036)</u>
Net change in total pension liability	526,218	(7,008,875)	(67,599)	11,051,776
Total pension liability—beginning	<u>16,282,396</u>	<u>23,291,271</u>	<u>23,358,870</u>	<u>12,307,094</u>
Total pension liability—ending ^(a)	<u>16,808,614</u>	<u>16,282,396</u>	<u>23,291,271</u>	<u>23,358,870</u>
PLAN FIDUCIARY NET POSITION:				
Contributions-employer	349,574	261,764	149,718	149,225
Contributions-employee	138,400	134,765	130,391	131,428
Net investment income (loss)	(204,975)	610,515	281,419	114,025
Benefit payments including refunds of employee contribution	(916,198)	(888,174)	(859,672)	(826,036)
Administrative expenses	(6,639)	(6,473)	(7,056)	(6,701)
Other	<u>-</u>	<u>5,394</u>	<u>-</u>	<u>-</u>
Net change in plan fiduciary net position	(639,838)	117,791	(305,200)	(438,059)
Plan fiduciary net position—beginning	<u>4,554,018</u>	<u>4,436,227</u>	<u>4,741,427</u>	<u>5,179,486</u>
Plan fiduciary net position—ending ^(b)	<u>3,914,180</u>	<u>4,554,018</u>	<u>4,436,227</u>	<u>4,741,427</u>
NET PENSION LIABILITY—Ending ^{(a) - (b)}	<u>\$ 12,894,434</u>	<u>\$ 11,728,378</u>	<u>\$ 18,855,044</u>	<u>\$ 18,617,443</u>
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	<u>23.29 %</u>	<u>27.97 %</u>	<u>19.05 %</u>	<u>20.30 %</u>
COVERED PAYROLL **	<u>\$ 1,734,596</u>	<u>\$ 1,686,533</u>	<u>\$ 1,646,939</u>	<u>\$ 1,643,481</u>
EMPLOYER'S NET PENSION LIABILITY AS A PERCENTAGE OF COVERED-EMPLOYEE PAYROLL	<u>743.37 %</u>	<u>695.41 %</u>	<u>1,144.85 %</u>	<u>1,132.81 %</u>
ALLOCATED NET PENSION LIABILITY	<u>\$ 261,188</u>	<u>\$ 239,542</u>	<u>\$ 369,711</u>	<u>\$ 364,150</u>
ALLOCATED PERCENTAGE	<u>2.03 %</u>	<u>2.04 %</u>	<u>1.96 %</u>	<u>1.96 %</u>

* Includes pension plan administrative expense

** Covered payroll is the amount in force as of the actuarial valuation date and likely differs from actual payroll during fiscal year

Note: Beginning with fiscal year 2015, the City will accumulate ten years of data.

(Continued)

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS
LAST THREE FISCAL YEARS
(Dollars in thousands)**

Laborers'	2018	2017	2016	2015
TOTAL PENSION LIABILITY:				
Service cost *	\$ 40,801	\$ 80,232	\$ 82,960	\$ 38,389
Interest	183,135	154,047	150,166	153,812
Benefit changes	-	150	-	384,033
Differences between expected and actual experience	15,143	(62,178)	(30,428)	(46,085)
Assumption changes	(11,788)	(1,074,754)	(62,905)	1,175,935
Benefit payments including refunds	(160,061)	(157,050)	(154,683)	(152,530)
Pension plan administrative expense	<u>(3,933)</u>	<u>(3,985)</u>	<u>(4,080)</u>	<u>(3,844)</u>
Net change in total pension liability	63,297	(1,063,538)	(18,970)	1,549,710
Total pension liability—beginning	<u>2,630,107</u>	<u>3,693,645</u>	<u>3,712,615</u>	<u>2,162,905</u>
Total pension liability—ending ^(a)	<u>2,693,404</u>	<u>2,630,107</u>	<u>3,693,645</u>	<u>3,712,615</u>
PLAN FIDUCIARY NET POSITION:				
Contributions-employer	47,844	35,457	12,603	12,412
Contributions-employee	17,837	17,411	17,246	16,844
Net investment income (loss)	(75,219)	207,981	57,997	(22,318)
Benefit payments including refunds of employee contribution	(160,061)	(157,050)	(154,683)	(152,530)
Administrative expenses	(3,933)	(3,985)	(4,080)	(3,844)
Other	<u>661</u>	<u>-</u>	<u>-</u>	<u>-</u>
Net change in plan fiduciary net position	(172,871)	99,814	(70,917)	(149,436)
Plan fiduciary net position—beginning	<u>1,267,554</u>	<u>1,167,740</u>	<u>1,238,657</u>	<u>1,388,093</u>
Plan fiduciary net position—ending ^(b)	<u>1,094,683</u>	<u>1,267,554</u>	<u>1,167,740</u>	<u>1,238,657</u>
NET PENSION LIABILITY—Ending ^{(a) - (b)}	<u>\$ 1,598,721</u>	<u>\$ 1,362,553</u>	<u>\$ 2,525,905</u>	<u>\$ 2,473,958</u>
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	<u>40.64 %</u>	<u>48.19 %</u>	<u>31.61 %</u>	<u>33.36 %</u>
COVERED PAYROLL **	<u>\$ 211,482</u>	<u>\$ 208,442</u>	<u>\$ 208,155</u>	<u>\$ 204,773</u>
EMPLOYER'S NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	<u>755.96 %</u>	<u>653.68 %</u>	<u>1,213.47 %</u>	<u>1,208.15 %</u>
ALLOCATED NET PENSION LIABILITY	<u>\$ 192,479</u>	<u>\$ 153,060</u>	<u>\$ 295,214</u>	<u>\$ 299,722</u>
ALLOCATED PERCENTAGE	<u>12.04 %</u>	<u>11.23 %</u>	<u>11.69 %</u>	<u>12.12 %</u>

* Includes pension plan administrative expense.

** Covered payroll is the amount in force as of the actuarial valuation date and likely differs from actual payroll during fiscal year

Note: Beginning with fiscal year 2015, the City will accumulate ten years of data.

(Concluded)

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CONTRIBUTIONS
LAST TEN YEARS
(Dollars in thousands)**

Municipal Employees'	Contributions in Relation to the				Contributions as a percentage of
	Actuarially Determined Contributions	Actuarially Determined Contribution	Contribution Deficiency	Covered Payroll*	
Years Ended December 31,					Covered Payroll
2009	\$ 413,509	\$ 148,047	\$ 265,462	\$ 1,551,973	9.54 %
2010	483,948	154,752	329,196	1,541,388	10.04
2011	611,756	147,009	464,747	1,605,993	9.15
2012	690,823	148,859	541,964	1,590,794	9.36
2013	820,023	148,197	671,826	1,580,289	9.38
2014	839,039	149,747	689,292	1,602,978	9.34
2015	677,200	149,225	527,975	1,643,481	9.08
2016	961,770	149,718	812,052	1,646,939	9.09
2017	1,005,457	261,764	743,693	1,686,533	15.52
2018	1,049,916	349,574	700,342	1,734,596	20.15

* Covered payroll is the amount in force as of the actuarial valuation date and likely differs from actual payroll paid during fiscal year.

Laborers'	Contributions in Relation to the				Contributions as a percentage of
	Actuarially Determined Contributions*	Actuarially Determined Contribution	Contribution Deficiency	Covered Payroll**	
Years Ended December 31,					Covered Payroll
2009	\$ 33,518	\$ 14,627	\$ 18,891	\$ 208,626	7.01 %
2010	46,665	15,352	31,313	199,863	7.68
2011	57,259	12,779	44,480	195,238	6.55
2012	77,566	11,853	65,713	198,790	5.96
2013	106,199	11,583	94,616	200,352	5.78
2014	106,019	12,161	93,858	202,673	6.00
2015	79,851	12,412	67,439	204,773	6.06
2016	117,033	12,603	104,430	208,155	6.05
2017	124,226	35,457	88,769	208,442	17.01
2018	129,247	47,844	81,403	211,482	22.62

* The LABF Statutory Funding does not conform to Actuarial Standards of Practice, therefore, the actuarially determined contribution is equal to the normal cost plus an amount to amortize the unfunded liability using dollar payments and a 30 year open amortization period.

** Covered payroll is the amount in force as of the actuarial valuation date and likely differs from actual payroll paid during fiscal year.

(Continued)

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CONTRIBUTIONS**

Actuarial Methods and Assumptions	Municipal Employees'		Laborers'	
Actuarial valuation date	December 31, 2018	(a)	December 31, 2018	(b)
Actuarial cost method	Entry age normal		Entry age normal	
Asset valuation method	5-yr. Smoothed Market		5-yr. Smoothed Market	
Actuarial assumptions:				
Inflation	2.5%		2.25%	
Salary increases	3.50%-7.75%	(c)	3.00%	(d)
Investment rate of return	7.00%	(e)	7.25%	(f)
Retirement age	(g)		(h)	
Mortality	(i)		(j)	
Other information	(k)		(l)	

- (a) Actuarially determined contribution amount is determined as of December 31, with appropriate interest to the end of the year.
- (b) Actuarially determined contribution rates are calculated as of December 31, which is 12 months prior to the end of the fiscal year in which contributions are reported.
- (c) (1.50%–6.5% for 2019–2022), varying by years of service.
- (d) Plus a service-based increase consistent with bargaining contracts.
- (e) Net of investment expense.
- (f) Net of investment expense, including inflation.
- (g) For employees first hired prior to January 1, 2011, rates of retirement are based on the recent experience of the Fund (effective December 31, 2017).
(g) For employees first hired on or after January 1, 2011 and before July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2011).
(g) For employees first hired on or after July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2017).
- (h) Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2018, valuation pursuant to an experience study of the period January 1, 2012, through December 31, 2016.
- (i) Post-retirement mortality rates were based on the RP-2014 Healthy Annuitant Mortality Tables, set forward two years for males and one year for females, and projected generationally using scale MP-2016. Pre-retirement mortality rates were based on 120% of the RP-2014 Employee Mortality Tables projected generationally using scale MP-2016.
- (j) Post Retirement Mortality: Scaling factors of 117% for males, and 102% for females of the RP-2014 Blue Collar Healthy Annuitant mortality table, sex distinct, with generational mortality improvement using MP-2017 2-dimensional mortality improvement scales. No adjustment is made for post-disabled mortality. Other assumptions: Same as those used in the December 31, 2018, actuarial funding valuations. Pre Retirement Mortality: Scaling factors of 109% for males, and 103% for females of the RP-2014 Blue Collar Employee mortality table, sex distinct, with Pre Retirement Mortality: Scaling factors of 109% for males, and 103% for females of the RP-2014 Blue Collar Employee mortality table, sex distinct, with generational mortality improvement using MP-2017 2-dimensional mortality improvement scales.
- (k) Other Assumptions: Same as those used in December 31, 2018, actuarial funding valuations.
- (l) The actuarial valuation is based on the statutes in effect as of December 31, 2018. Benefit changes as a result of Public Act 100-0023 were recognized in the Total Pension Liability as of December 31, 2018.

(Concluded)

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**STATISTICAL DATA
(UNAUDITED)**

STATISTICAL DATA (UNAUDITED)

The statistical data section includes selected financial and operating information, generally presented on a multiyear basis. The statistical section information is presented in five categories: financial trends, revenue capacity, debt capacity, operating information, and demographic and economic information. Schedules in the statistical section are the following:

Financial Trends—These schedules contain trend information to help the reader understand how the Sewer Fund’s financial performance and well-being have changed over time.

Revenue Capacity—These schedules contain information to help the reader assess the Sewer Fund’s most significant revenue source and sewer sales charge.

Debt Capacity—These schedules present information to help the reader assess the affordability of the Sewer Fund’s current levels of outstanding debt and the Sewer Fund’s ability to issue additional debt in the future.

Operating Information—These schedules contain service and infrastructure data to help the reader understand how the information in the Sewer Fund’s financial report relates to the services the Sewer Fund provides and the activities it performs.

Demographic and Economic Information—These schedules offer demographic and economic indicators to help the reader understand the environment within which the City’s financial activities take place.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
NET POSITION BY COMPONENT
TEN YEARS ENDED DECEMBER 31, 2009–2018 (UNAUDITED)
(In thousands)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
NET POSITION:										
Net investment in capital assets	\$ 391,248	\$ 408,564	\$ 448,720	\$ 448,414	\$ 481,946	\$ 520,627	\$ 559,715	\$ 648,644	\$ 735,564	\$ 827,773
Restricted for capital projects	9,533	11,110	24,610	50,014	73,858	111,333	116,107	117,295	116,376	115,576
Unrestricted	<u>52,920</u>	<u>64,828</u>	<u>25,588</u>	<u>60,436</u>	<u>78,509</u>	<u>102,794</u>	<u>(299,584)</u>	<u>(353,467)</u>	<u>(364,239)</u>	<u>(358,293)</u>
TOTAL	<u>\$ 453,701</u>	<u>\$ 484,502</u>	<u>\$ 498,918</u>	<u>\$ 558,864</u>	<u>\$ 634,313</u>	<u>\$ 734,754</u>	<u>\$ 376,238</u>	<u>\$ 412,472</u>	<u>\$ 487,701</u>	<u>\$ 585,056</u>
				*			**			

* Amounts were restated for the implementation of GASB 65

** Amounts were restated for the implementation of GASB 68

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
CHANGES IN NET POSITION
TEN YEARS ENDED DECEMBER 31, 2009–2018 (UNAUDITED)
(In thousands)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
OPERATING INCOME:										
Operating revenues	\$ 175,163	\$ 198,229	\$ 203,349	\$ 253,912	\$ 279,829	\$ 322,228	\$ 375,877	\$ 368,966	\$ 357,623	\$ 369,703
Operating expenses	109,643	113,881	113,930	113,575	109,333	119,279	310,689	227,932	163,517	155,825
Depreciation and amortization	<u>21,878</u>	<u>23,775</u>	<u>25,074</u>	<u>27,187</u>	<u>31,280</u>	<u>36,701</u>	<u>40,444</u>	<u>40,734</u>	<u>48,171</u>	<u>48,504</u>
Total operating income	43,642	60,573	64,345	113,150	139,216	166,248	24,744	100,300	145,935	165,374
NONOPERATING EXPENSES, NET	<u>(57,755)</u>	<u>(26,706)</u>	<u>(51,793)</u>	<u>(55,704)</u>	<u>(66,267)</u>	<u>(65,807)</u>	<u>(149,978)</u>	<u>(80,705)</u>	<u>(77,125)</u>	<u>(70,293)</u>
INCOME (LOSS) BEFORE CAPITAL GRANTS	(14,113)	33,867	12,552	57,446	72,949	100,441	(125,234)	19,595	68,810	95,081
CAPITAL GRANTS	<u>-</u>	<u>3,136</u>	<u>1,864</u>	<u>2,500</u>	<u>2,500</u>	<u>-</u>	<u>-</u>	<u>16,639</u>	<u>6,419</u>	<u>2,274</u>
CHANGE IN NET POSITION	<u>\$ (14,113)</u>	<u>\$ 37,003</u>	<u>\$ 14,416</u>	<u>\$ 59,946</u>	<u>\$ 75,449</u>	<u>\$ 100,441</u>	<u>\$ (125,234)</u>	<u>\$ 36,234</u>	<u>\$ 75,229</u>	<u>\$ 97,355</u>

* Amounts were restated due to the implementation of GASB 65.

** Amounts were restated due to the implementation of GASB 68.

The Sewer Fund intends to provide ten years of information as it becomes available.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
HISTORICAL FINANCIAL OPERATIONS
TEN YEARS ENDED DECEMBER 31, 2009–2018 (UNAUDITED)
(In thousands)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
OPERATING REVENUES:										
Sewer sales	\$ 173,906	\$ 197,455	\$ 202,323	\$ 252,943	\$ 291,110	\$ 337,657	\$ 390,924	\$ 384,140	\$ 377,286	\$ 380,822
Less provision for bad debt	-	-	-	-	(12,461)	(16,557)	(16,154)	(16,320)	(20,813)	(12,611)
Other operating revenue	<u>1,257</u>	<u>774</u>	<u>1,026</u>	<u>969</u>	<u>1,180</u>	<u>1,128</u>	<u>1,107</u>	<u>1,146</u>	<u>1,150</u>	<u>1,492</u>
Total operating revenues	<u>175,163</u>	<u>198,229</u>	<u>203,349</u>	<u>253,912</u>	<u>279,829</u>	<u>322,228</u>	<u>375,877</u>	<u>368,966</u>	<u>357,623</u>	<u>369,703</u>
OPERATING EXPENSES:										
Repairs	42,110	42,509	38,805	35,708	38,910	40,435	42,131	36,408	41,881	43,654
Maintenance	24,380	24,075	23,655	21,819	23,004	24,374	25,322	21,941	24,660	24,909
Administrative and general	14,403	17,179	18,802	21,254	12,008	14,394	12,337	11,801	12,591	13,472
General Fund reimbursements ⁽¹⁾	25,431	27,065	29,124	31,709	32,144	36,740	227,600	155,624	81,919	70,126
Engineering	<u>3,319</u>	<u>3,053</u>	<u>3,544</u>	<u>3,085</u>	<u>3,267</u>	<u>3,336</u>	<u>3,299</u>	<u>2,158</u>	<u>2,466</u>	<u>3,664</u>
Total operating expenses	<u>109,643</u>	<u>113,881</u>	<u>113,930</u>	<u>113,575</u>	<u>109,333</u>	<u>119,279</u>	<u>310,689</u>	<u>227,932</u>	<u>163,517</u>	<u>155,825</u>
NONOPERATING REVENUES	<u>234</u>	<u>643</u>	<u>2,870</u>	<u>867</u>	<u>(2,754)</u>	<u>3,813</u>	<u>3,921</u>	<u>1,137</u>	<u>4,354</u>	<u>7,446</u>
NET REVENUES—As defined	<u>\$ 65,754</u>	<u>\$ 84,991</u>	<u>\$ 92,289</u>	<u>\$ 141,204</u>	<u>\$ 167,742</u>	<u>\$ 206,762</u>	<u>\$ 69,109</u>	<u>\$ 142,171</u>	<u>\$ 198,460</u>	<u>\$ 221,324</u>

Source: City of Chicago Comptroller's Office.

Note 1:

During 2018 the Sewer Fund incurred expenses of the \$18.9 million of pension, \$12.7 million is the portion of the City's pension contribution payable in 2018 to the pension funds and allocable to the Sewer Fund. The remaining portion of the pension expense for 2018 (i.e. \$18.9 million) is recognized on the income statement of the Sewer Fund for 2018 pursuant to GASB 68 but is not due and payable by the City during 2018.

During 2017 the Sewer Fund incurred expenses of the \$34.4 million of pension, \$9.5 million is the portion of the City's pension contribution payable in 2017 to the pension funds and allocable to the Sewer Fund. The remaining portion of the pension expense for 2017 (i.e. \$24.9 million) is recognized on the income statement of the Sewer Fund for 2017 pursuant to GASB 68 but is not due and payable by the City during 2017.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
FIVE LARGEST CUSTOMERS (UNAUDITED)
(In thousands)**

	Amount of Sales									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Department of Aviation	\$ 1,331	\$ 1,744	\$ 1,593	\$ 1,927	\$ 2,165	\$ 1,857	\$ 3,634	\$ 4,498	\$ 4,025	\$ 4,504
Humboldt Park	754	435	1,842	1,179	1,393	1,307	-	-	759	-
Chicago Park Dist	-	-	-	-	-	-	-	-	-	-
WR Grace and Company	347	-	-	-	-	-	-	-	-	589
Calumet Park	270	315	316	-	635	652	-	-	-	-
Pepsi Cola Bottlers	237	-	-	-	-	-	-	-	-	-
Lincoln Park Northwestern University	-	-	310	745	1,418	-	1,344	1,267	1,325	675
Columbus Park	-	258	-	-	-	-	-	-	-	-
Cook County Sheriff	-	-	-	-	1,141	-	-	846	-	-
University of Chicago—HCC	-	-	339	1,428	-	-	-	-	-	-
Uniquema	-	-	-	-	-	680	551	-	-	-
Ford Motor Co	-	-	-	-	-	695	928	912	995	1,311
University of Illinois at Chicago Hometown	-	-	-	1,647	-	-	834	-	-	-
	-	546	-	-	-	-	-	546	551	560
	<u>\$ 2,939</u>	<u>\$ 3,298</u>	<u>\$ 4,400</u>	<u>\$ 6,926</u>	<u>\$ 6,752</u>	<u>\$ 5,191</u>	<u>\$ 7,291</u>	<u>\$ 8,069</u>	<u>\$ 7,655</u>	<u>\$ 7,639</u>

The Sewer Fund intends to provide ten years of information as it becomes available.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
CUSTOMERS BY COMPONENT (UNAUDITED)
(In thousands)**

	Amount of Sales									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residential	\$ 124,600	\$ 144,145	\$ 139,598	\$ 178,399	\$ 195,542	\$ 233,830	\$ 266,878	\$ 246,997	\$ 242,899	\$ 248,622
Industrial/ commercial	38,376	44,540	50,915	57,598	74,696	82,811	95,473	109,655	99,620	98,054
Governmental	<u>10,930</u>	<u>9,544</u>	<u>12,836</u>	<u>17,915</u>	<u>22,052</u>	<u>22,318</u>	<u>29,680</u>	<u>28,634</u>	<u>35,917</u>	<u>35,638</u>
	<u>\$ 173,906</u>	<u>\$ 198,229</u>	<u>\$ 203,349</u>	<u>\$ 253,912</u>	<u>\$ 292,290</u>	<u>\$ 338,959</u>	<u>\$ 392,031</u>	<u>\$ 385,286</u>	<u>\$ 378,436</u>	<u>\$ 382,314</u>

The Sewer Fund intends to provide ten years of information as it becomes available.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
RECENT SEWER SERVICE RATES
(Unaudited)**

Effective Date	Gross Water Rate Per 1,000 Gallons	Gross Water Rate Per 1,000 Cubic Feet	Sewer Rate	
			Percent of Water Bill	Per 1000 Cubic Feet
January 1, 2009	\$ 1.76	\$ 13.15	85 %	\$ 11.18
January 1, 2010	2.01	15.00	86	12.90
January 1, 2011	2.01	15.00	86	12.90
January 1, 2012	2.51	18.75	89	16.69
January 1, 2013	2.88	21.56	92	19.84
January 1, 2014	3.31	24.80	96	23.81
January 1, 2015	3.81	28.52	100	28.52
January 1, 2016	3.81	28.52	100	28.52
June 1, 2017	3.88	29.04	100	29.04
June 1, 2018	3.95	29.49	100	29.49

Source: City of Chicago Department of Water Management.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
SEWER SYSTEM ACCOUNTS
TEN YEARS ENDED DECEMBER 31, 2009–2018
(Unaudited)**

Years Ended December 31	Water Accounts			Exempt	Sewer Accounts
	Non- Metered	Metered	Total		
2009	318,088	179,649	497,737	64,965	432,772
2010	314,002	183,618	497,620	65,450	432,170
2011	304,519	192,304	496,823	65,903	430,920
2012	290,863	205,097	495,960	61,502	434,458
2013	273,426	220,759	494,185	62,393	431,792
2014	250,304	241,304	491,608	62,856	428,752
2015	227,801	266,284	494,085	64,781	429,304
2016	206,913	287,351	494,264	67,130	427,134
2017	190,276	303,877	494,153	66,995	427,158
2018	180,608	313,758	494,366	66,982	427,384

Source: City of Chicago Department of Water Management.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
REVENUE BOND COVERAGE
TEN YEARS ENDED DECEMBER 31, 2009–2018 (UNAUDITED)
(In thousands)**

Combined Senior Lien and Second Lien Debt Service Calculation	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES AVAILABLE FOR BONDS:										
Net revenues—as defined	\$ 65,754	\$ 84,991	\$ 92,289	\$ 141,204	\$ 167,742	\$ 206,762	\$ 69,109	\$ 142,171	\$ 198,460	\$ 221,324
Pension Expense other than contribution (Note 1)	-	-	-	-	-	-	183,165	100,447	24,921	6,191
Transfer to sewer rate stabilization account	-	10,000	-	5,000	3,000	-	-	-	1,281	-
Other Available Funds (Note 2)	<u>22,090</u>	<u>4,403</u>	<u>17,755</u>	<u>19,215</u>	<u>65,298</u>	<u>103,864</u>	<u>108,498</u>	<u>133,501</u>	<u>200,990</u>	<u>221,509</u>
Net revenues available for bonds	87,844	79,394	110,044	155,419	230,040	310,626	360,772	376,119	423,090	449,024
PRIOR LIEN DEBT SERVICE REQUIREMENT	-	-	-	-	-	-	-	-	-	-
NET REVENUES AVAILABLE FOR BONDS	<u>\$ 87,844</u>	<u>\$ 79,394</u>	<u>\$ 110,044</u>	<u>\$ 155,419</u>	<u>\$ 230,040</u>	<u>\$ 310,626</u>	<u>\$ 360,772</u>	<u>\$ 376,119</u>	<u>\$ 423,090</u>	<u>\$ 449,024</u>
DEBT SERVICE REQUIREMENTS:										
Senior lien debt service requirement	<u>\$ 17,777</u>	<u>\$ 16,017</u>	<u>\$ 15,287</u>	<u>\$ 9,231</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Senior lien debt service coverage (1.15 required)	<u>4.94</u>	<u>4.96</u>	<u>7.20</u>	<u>16.84</u>	-	-	-	-	-	-
DEBT SERVICE REQUIREMENTS:										
2000 second lien bonds	2,710	2,711	-	-	-	-	-	-	-	-
2001 second lien bonds	4,200	4,196	6,920	5,036	6,923	6,935	6,942	6,947	6,951	6,957
2001A second lien bonds	2,050	2,047	2,055	1,886	-	-	-	-	-	-
2004A and B second lien bonds	5,505	17,558	17,448	17,301	26,910	27,102	27,242	-	-	-
2006A and B second lien bonds	8,768	8,770	8,765	15,184	15,201	15,210	12,358	12,364	2,734	-
2008A second lien bonds	11,539	11,528	11,537	11,537	8,650	11,536	11,534	11,535	8,031	4,421
2008C second lien bonds	11,792	542	485	2,732	2,786	3,346	14,725	31,907	31,809	32,023
IEPA Loans	-	101	383	665	866	2,916	3,309	4,934	10,612	12,933
2010A & B second lien bonds	-	2,284	19,332	21,036	21,039	21,054	21,627	21,646	21,654	21,785
2012A & B second lien bonds	-	-	-	-	17,485	17,486	17,483	17,485	17,480	17,482
2014 second lien bonds	-	-	-	-	-	3,292	19,127	19,180	19,188	19,192
2015 second lien bonds	-	-	-	-	-	-	-	-	6,902	6,849
2017A & B second lien bonds	-	-	-	-	-	-	-	-	16,751	25,634
Second lien debt service requirement	<u>46,564</u>	<u>49,737</u>	<u>66,925</u>	<u>75,377</u>	<u>99,860</u>	<u>108,877</u>	<u>134,347</u>	<u>125,999</u>	<u>142,112</u>	<u>147,276</u>
COMBINED SENIOR AND SECOND LIEN DEBT SERVICE REQUIREMENTS	<u>\$ 64,341</u>	<u>\$ 65,754</u>	<u>\$ 82,212</u>	<u>\$ 84,608</u>	<u>\$ 99,860</u>	<u>\$ 108,877</u>	<u>\$ 134,347</u>	<u>\$ 125,999</u>	<u>\$ 142,112</u>	<u>\$ 147,276</u>
COMBINED SENIOR AND SECOND LIEN DEBT SERVICE COVERAGE (1.15 REQUIRED)	<u>1.37</u>	<u>1.21</u>	<u>1.34</u>	<u>1.84</u>	<u>2.30</u>	<u>2.85</u>	<u>2.69</u>	<u>2.99</u>	<u>2.98</u>	<u>3.05</u>
SEWER RATE STABILIZATION ACCOUNT YEAR-END BALANCE	<u>\$ 14,629</u>	<u>\$ 25,629</u>	<u>\$ 25,703</u>	<u>\$ 29,629</u>	<u>\$ 32,629</u>	<u>\$ 32,629</u>	<u>\$ 32,629</u>	<u>\$ 32,629</u>	<u>\$ 32,196</u>	<u>\$ 36,902</u>

Source: City of Chicago Comptroller's Office.

Note:

- Of the \$18.9 million of pension expense for 2018, \$6.1 million is the portion of the City's pension contribution payable in 2018 to the pension funds and allocable to the Sewer Fund. The remaining portion of the pension expense for 2017 (i.e. \$6.2 million) is recognized on the income statement of the Sewer Fund for 2017 pursuant to GASB 68 but is not due and payable by the City during 2017; accordingly, that portion is not included in Operating Expenses for purposes of calculation of the debt service coverage ratio.
- As provided in the Ordinance, Gross Revenues remaining in any period after providing sufficient funds for Operations and Maintenance Costs, for paying required debt service on all bonds and notes secured by Sewer System revenues, for paying any required amounts into any other accounts established for any bonds or notes secured by Sewer System revenues and to make any deposits into the Sewer Rate Stabilization Account ("Other Available Funds"), can be applied to debt service for any future period.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
LONG-TERM DEBT
TEN YEARS ENDED DECEMBER 31, 2009–2018 (UNAUDITED)
(In thousands)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
First lien	\$ 110,958	\$ 71,343	\$ 57,988	\$ 43,928	\$ 35,168	\$ 35,168	\$ 35,168	\$ 35,168	\$ 35,168	\$ 35,168
Second lien	790,440	1,053,272	1,041,436	1,290,296	1,284,355	1,541,690	1,592,010	1,548,696	1,660,490	1,527,810
Subordinate lien—IEPA loan	<u>1,442</u>	<u>1,377</u>	<u>12,665</u>	<u>29,550</u>	<u>49,936</u>	<u>62,077</u>	<u>59,000</u>	<u>108,956</u>	<u>165,723</u>	<u>330,583</u>
Total revenue bonds and notes	<u>902,840</u>	<u>1,125,992</u>	<u>1,112,089</u>	<u>1,363,774</u>	<u>1,369,459</u>	<u>1,638,935</u>	<u>1,686,178</u>	<u>1,692,820</u>	<u>1,861,381</u>	<u>1,893,561</u>
Unamortized premium (discount)	14,240	15,883	16,142	37,701	34,707	61,306	83,551	77,642	113,074	104,893
Unamortized deferred loss	(43,332)	(38,063)	(32,276)	-	-	-	-	-	-	-
Accretion of Series 1998 CAB	<u>30,013</u>	<u>33,532</u>	<u>37,242</u>	<u>41,151</u>	<u>45,272</u>	<u>49,615</u>	<u>54,194</u>	<u>59,018</u>	<u>64,105</u>	<u>69,465</u>
Sub-total	<u>921</u>	<u>11,352</u>	<u>21,108</u>	<u>78,852</u>	<u>79,979</u>	<u>110,921</u>	<u>137,745</u>	<u>136,660</u>	<u>177,179</u>	<u>174,358</u>
Total revenue bonds payable—net of unamortized premium (discount)	<u>\$ 903,761</u>	<u>\$ 1,137,344</u>	<u>\$ 1,133,197</u>	<u>\$ 1,442,626</u>	<u>\$ 1,449,438</u>	<u>\$ 1,749,856</u>	<u>\$ 1,823,923</u>	<u>\$ 1,829,480</u>	<u>\$ 2,038,560</u>	<u>\$ 2,067,919</u>

The Sewer Fund intends to provide ten years of information as it becomes available.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
CAPITAL IMPROVEMENT PROGRAM
2019–2023 (UNAUDITED)
(In thousands)**

Years	Amount
2019	\$ 251,140
2020	228,557
2021	225,274
2022	217,031
2023	<u>227,235</u>
Total	<u>\$ 1,149,237</u>

Note: The information presented in the table above reflects the Sewer Fund’s expected allocation of resources to various projects, but does not necessarily represent an expectation of actual cash expenditures for these projects.

Source: City of Chicago Department of Water Management.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
FULL-TIME EQUIVALENT SEWER FUND EMPLOYEES BY FUNCTION
TEN YEARS ENDED DECEMBER 31, 2009–2018
(Unaudited)**

Function	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agency management	5	5	5	4	4	4	4	4	4	5
Capital design and construction services	21	21	23	23	24	26	24	24	25	26
Engineering services	-	-	-	-	-	-	-	-	-	-
Inspection services	18	18	18	18	18	16	18	24	24	24
System installation	10	9	8	8	8	8	9	9	8	8
System maintenance and evaluations	521	521	521	523	523	521	521	515	426	412
Communications and coordination	<u>31</u>	<u>27</u>	<u>26</u>	<u>17</u>	<u>16</u>	<u>16</u>	<u>15</u>	<u>15</u>	<u>13</u>	<u>13</u>
	<u>606</u>	<u>601</u>	<u>601</u>	<u>593</u>	<u>593</u>	<u>591</u>	<u>591</u>	<u>591</u>	<u>500</u>	<u>488</u>

The Sewer Fund intends to provide ten years of information as it becomes available.

Source: City of Chicago’s 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009 Program and Budget Summary.

Note: Schedule includes only Department of Water Management employees.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
OPERATING INDICATORS BY FUNCTION
(Unaudited)**

	2017	2018
Catch basins repaired	<u>3,011</u>	<u>2,872</u>

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
CAPITAL ASSET STATISTICS BY FUNCTION (UNAUDITED)
(In miles)**

	2017	2018
Sewers lined	40.7	44.5
New construction	22.3	21.8

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
POPULATION OF SERVICE AREA
LAST FIVE CENSUS PERIODS
(Unaudited)**

Years	Population
1970	3,369,357
1980	3,005,072
1990	2,783,726
2000	2,896,016
2010	2,695,598

Source: U.S. Department of Commerce—Census Bureau.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
PRINCIPAL EMPLOYERS (NONGOVERNMENT)
CURRENT YEAR AND NINE YEARS AGO
(Unaudited)**

Employer	2018 ⁽¹⁾			2009 ⁽³⁾		
	Number of Employees	Rank	Percentage of Total City Employment	Number of Employees	Rank	Percentage of Total City Employment
Northwestern Memorial Healthcare	19,886	1	1.54 %			
Advocate Health Care	19,513	2	1.51			
University of Chicago	17,345	3	1.35			
Amita Health	16,231	4	1.26			
United Continental Holdings Inc. ⁽²⁾	14,582	5	1.13	6,019	2	0.58 %
Amazon.com Inc	14,018	6	1.09			
JP Morgan Chase & Co.	13,795	7	1.07	8,431	1	0.81
Walgreen Boots Alliance Inc.	12,311	8	0.95			
Wal-Mart Inc.	11,420	9	0.89			
Northwestern University	10,865	10	0.84			
Jewel -Osco				5,833	3	0.56
Northern Trust				5,394	4	0.52
Bank of America NT & SA				4,631	5	0.44
American Airlines				3,394	6	0.33
Accenture LLP				3,341	7	0.32
SBC/AT&T				3,136	8	0.30
CVS Corporation				3,120	9	0.30
Ford Motor Company				2,764	10	0.27

NOTES:

⁽¹⁾ Source: Reprinted with permission, Crain's Chicago Business February 11, 2019 issue of Crain's Chicago Business.

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⁽²⁾ United Continental Holdings Inc. formerly known as United Airlines

⁽³⁾ Source: City of Chicago, Department of Revenue, Employer's Expense Tax Returns.

Prior to 2014, the information was the City of Chicago, Bureau of Revenue-Tax Division report, which is no longer available.

**CITY OF CHICAGO, ILLINOIS
SEWER FUND**

**STATISTICAL DATA
POPULATION AND INCOME STATISTICS
(Unaudited)**

Year	Population ⁽¹⁾	Median Age ⁽²⁾	Number of Households ⁽²⁾	City Employment	Unemployment Rate ⁽³⁾	Per Capita Income ⁽⁴⁾	Total Income ⁽⁶⁾
2009	2,896,016	34.5	1,037,069	1,171,841	10.0	43,727	126,634,091,632
2010	2,695,598	34.8	1,045,666	1,116,830	10.1	45,957	123,881,597,286
2011	2,695,598	33.2	1,048,222	1,120,402	9.3	45,977	123,935,509,246
2012	2,695,598	33.0	1,030,746	1,144,896	8.9	48,305	130,210,861,390
2013	2,695,598	33.5	1,062,029	1,153,725	8.3	49,071	132,275,689,458
2014	2,695,598	33.9	1,031,672	1,264,234	5.7	50,690	136,639,862,620
2015	2,695,598	34.2	1,053,229	1,273,727	5.7	53,886	145,254,993,828
2016	2,695,598	34.4	1,053,986	1,282,117	5.4	55,621	149,931,856,358
2017	2,695,598	34.6	1,047,695	1,289,325	5.4	58,315	157,193,797,370
2018	2,695,598	N/A ⁽⁵⁾	N/A ⁽⁵⁾	1,288,755	4.0	N/A ⁽⁵⁾	N/A ⁽⁵⁾

Notes:

⁽¹⁾ Source: U.S. Census Bureau.

⁽²⁾ Source: American Fact Finder—United States Census Bureau data estimates.
Data not available for 2018

⁽³⁾ Source: Bureau of Labor Statistics 2018, Unemployment rate for Chicago-Naperville-Illinois Metropolitan Area.

⁽⁴⁾ Source: U.S. Department of Commerce, Bureau of Economic Analysis, Per Capita Personal Income for Chicago-Naperville-Illinois Metropolitan Area.