

Louisville and Jefferson County
Metropolitan Sewer District

COMPREHENSIVE ANNUAL FINANCIAL REPORT

Fiscal Years Ended June 30, 2020 and 2019



A Component Unit of Louisville
Jefferson County Metro Government
Commonwealth of Kentucky

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**Louisville/Jefferson County Metropolitan Sewer District
Louisville, Kentucky**

**A Component Unit of Louisville/Jefferson County Metro Government
Commonwealth of Kentucky**



Fiscal Years Ended June 30, 2020 and 2019

**Prepared by the Department of Finance, Louisville MSD
Brad Good, Chief Financial Officer**

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Workers being lowered into MSD's 4-mile Waterway Protection Tunnel. The tunnel will protect the community and our waterways from combined sewer overflows.

INTRODUCTORY SECTION



700 West Liberty Street | Louisville, KY 40203-1911
Phone: 502.540.6000 | LouisvilleMSD.org

October 30, 2020

Letter of Transmittal

To the customers and investors of Louisville and Jefferson County Metropolitan Sewer District,

As the Chief Financial Officer of Louisville and Jefferson County Metropolitan Sewer District (MSD) it is my pleasure to present the Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2020.

Responsibility for the accuracy, completeness and fairness of the data presented herein, including all disclosures, rests with MSD. To provide a reasonable basis for making these representations, the management of MSD has established a comprehensive internal control framework that is designed to both protect its assets from loss, theft, or misuse and to compile sufficient reliable information for the preparation of MSD's financial statements in conformity with Generally Accepted Accounting Principles (GAAP).

MSD's comprehensive framework of internal controls has been designed to provide reasonable rather than absolute assurance that the financial statements will be free from material misstatement. To the best of MSD's knowledge and belief, the accompanying data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of the operations of MSD. All disclosures necessary to enable the reader to understand MSD's financial activities have been included. GAAP requires that management provide a narrative to accompany the basic financial statements in the form of Management's Discussion and Analysis which is found beginning on page 3. This letter of transmittal is intended to be read in conjunction with that analysis.

MSD was created in 1946 as a public body corporate and subdivision of the Commonwealth of Kentucky. MSD has complete control, possession and supervision of the sewer and drainage systems within the majority of Louisville Metro, which now comprises all of Jefferson County, Kentucky. In addition, MSD has control, possession and supervision of the sewer system in portions of Oldham and Shelby County, Kentucky. Chapter 76 of the Kentucky Revised Statutes authorizes MSD to construct additions, betterments, and extensions within its service area and to recover the cost of its services in accordance with rate schedules adopted by its Board.

MSD is a component unit of the Louisville/Jefferson County Metro Government. The Louisville Metro Mayor appoints, with the approval of the Louisville Metro Council, the members to MSD's governing Board, its Executive Director, Chief Engineer and Secretary/Treasurer. The Board, which has statutory authority to enter into contracts and agreements for the management, regulation and financing of MSD, manages its business and activities. The Board has full statutory responsibility for approving and revising MSD's annual budgets, for financing deficits and for disposition of surplus funds. MSD has no special financial relationship with the Louisville Metro Government; however, effective July 1, 2006, MSD began providing free sewer and drainage services to Louisville Metro Government. The value of these services in fiscal year 2020 was \$6.6 million.

MSD is required by law and by its Revenue Bond Resolution to undergo an annual independent audit of its financial statements. The goal of the independent audit is to provide reasonable assurance that the financial statements of MSD for the fiscal years ended June 30, 2020 and 2019 are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; assessing the accounting principles used and significant estimates made by management; and evaluating the overall financial statement presentation. The independent auditor's report can be found at the beginning of the financial section of this report.

Customer Base:

MSD's revenue is derived from wastewater and drainage service charges collected from residential, commercial, and industrial customers. Wastewater service charges are distributed to respective customer classes on the basis of actual costs incurred to collect and treat wastewater. For fiscal 2020, 60% of MSD's sewer service charge revenue came from residential customers, 31% came from commercial customers and 9% from industrial customers. Drainage service charges are assessed based on the equivalent service units (ESU) for each parcel of property. An ESU is defined by MSD as 2,500 square feet of impervious area. For fiscal 2020, 38% of MSD's

drainage service charge revenue came from residential customers, 56% came from commercial customers and 6% from industrial customers.

Local Economy:

A report entitled Louisville Metro Demographic and Economic Projections published by the University of Louisville's Urban Studies Institute (USI) in December 2015 projects Jefferson County will grow by 131,135 people, or 18%, between 2010 and 2040. USI predicts an increase in population within MSD's service area of nearly 12%. This translates to an approximate increase in wastewater flows of 7% during the next 20 years although growth is not expected to be uniform. Population growth outside the core market area (generally defined as the areas surrounding downtown that were not part of the original City of Louisville) is projected to continue at a faster pace than growth inside the core. Jefferson County is projected to gain 65,425 households, a 21% increase, between 2010 and 2040.

Trade and transportation are central to the Louisville economy. Louisville sits at the crossroads of three major Interstate highways, I-64, I-65, and I-71 and is home to the UPS Worldport air hub.

The United States Department of Labor's Bureau of Labor Statistics listed the unemployment rate for Jefferson County Kentucky as 6.5% in June 2020 which was lower than the United States overall unemployment rate of 10.2% for the same time period. The latest published U.S. Census Bureau statistics lists median household income in Jefferson County as \$51,307 (2018 dollars). Additional information on demographic and economic conditions for Louisville can be found in the Statistical Section of this report.

2020 Highlights:

- *Blueprint 2025:* MSD invested significant time and effort in fiscal year 2020 implementing an Integrated Strategic Business Plan, Blueprint 2025. Blueprint 2025 is our action plan to transform MSD into the Utility of the Future by the year 2025. The strategic purpose behind Blueprint 2025 is to deliver MSD's three core business functions in a collaborative, efficient, innovative manner to meet regulatory requirements and community level of service through a sustainable, purpose driven and skilled workforce. Blueprint 2025 establishes the following Vision, Mission and Critical Success Factors:

Vision: The innovative, regional utility for safe, clean waterways.

Mission: Provide quality wastewater, drainage and flood protection services to protect public health and safety through sustainable solutions, fiscal stewardship and strategic partnerships.

Critical Success Factors:

- Sustain quality and compliant wastewater, stormwater and flood protection services.
 - Earn the community's trust daily as the leading provider of quality wastewater, stormwater and flood protection services.
 - Transform into an employer of purpose where employees are provided the opportunity to thrive.
 - Ensure fiscal stewardship and sustainability of community resources.
 - Realize operation efficiencies and revenue generation through strategic partnerships and innovations.
- *Consent Decree:* Fourteen years ago MSD began an effort, now projected to cost \$1.15 billion, to eliminate sanitary sewer overflows and reduce combined sewer overflows by 98% in a typical rainfall year. Because much of Louisville's sewer system was installed nearly 100 years ago, rainwater can mix with wastewater and overwhelm the pipes causing a combination of wastewater and stormwater to overflow into the Ohio River and our local streams.

Underground storage basins and the Waterway Protection Tunnel are part of MSD's solution to prevent sewage from overflowing into Louisville's waterways. The basins and tunnel are designed to capture rainwater and sewage which would otherwise flow untreated into our waterways. These underground storage areas retain the mixture of rainwater and sewage until the rain subsides and system capacity is available. Water is then conveyed to one of MSD's Water Quality Treatment Centers, treated, and returned to our local streams or the Ohio River. When the storage basins and tunnel are complete MSD will have approximately 250 million gallons of storage capacity.

- *Capital Project Awards:* In June of 2020, MSD's Shawnee Park Combined Sewer Overflow Basin was named one of twelve new "Infrastructure Gamechangers" by the American Society of Civil Engineers. The basin previously won a National Award of Excellence, a National Best Design for Engineering, and a

National Award of Merit from the Design-Build Institute of America. It was also named the Slag Cement Association Project of the Year and won the Engineering Excellence Award from the American Council of Engineering Companies of Kentucky.

The 20-million gallon basin is a large capture and release basin used to temporarily store wastewater and stormwater during wet-weather events and gradually release them back to the sewer system for treatment when capacity is available. The basin project also included a pledge from the design-build contractor, Ulliman Schutte Construction, to hire local labor. The project had 225 Jefferson County residents working in various positions. Ulliman Schutte reported 83 percent local labor usage along with 21 percent Minority Business Enterprise and 14 percent Women Business Enterprise participation. The \$78 million project is part of MSD's Consent Decree work and was placed into service on June 21, 2019.

- *Rate Increase:* On July 29, 2019 the MSD Board approved a rate increase of 6.9 percent for wastewater and drainage service charges on all bills effective August 1, 2019. The average monthly residential wastewater bill (based on 5,000 gallons per month) increased by \$3.47 from \$50.10 to \$53.59. Monthly drainage service charges increased by \$0.68 from \$9.90 to \$10.58.
- *OCEA Merger:* MSD acquired the Oldham County Environmental Authority (OCEA) wastewater system on June 30, 2020. Day-to-day work at the facilities will continue to be performed under a contract with Veolia Water North America until 2022. The merger adds about 6,000 customers (primarily residential) to MSD's wastewater system.

Regionalization is a part of MSD's Blueprint 2025 strategic business plan to transform into the utility of the future. A regional approach to wastewater treatment allows MSD to bring economies of scale and improvements that benefit the entire area. One of our initial projects in Oldham County will be to decommission the outdated Ash Avenue Wastewater Treatment Plant, which was designed to operate for 20 years but has been in service for more than 30 years. MSD will replace this outdated plant with a more cost-effective solution by directing that wastewater to our existing Floyds Fork Water Quality Treatment Center. This will improve sewer service reliability and improve the health of local waterways. The project will be complete by the end of 2021.

- *Supplier Diversity and Community Benefits Program Commitment:* MSD's new Supplier Diversity program launched on June 1, 2020. The new program has higher inclusiveness goals for minority and women-owned businesses. This will improve the diversity of firms that receive MSD contracts and create community benefits in neighborhoods where MSD is working. With this initiative, MSD renews our commitment to equity, justice and transparency in how we serve our customers.

Construction and construction-related services valued at or above \$150,000 must now include goals for the following qualified vendors who can perform a commercially useful scope of work on the project:

- African-Americans – 18 percent
- Asian-Indian Americans – 2 percent
- Caucasian Females – 15 percent

MSD formalized a Community Benefits program in July 2019. The goal of this program is to leverage the economic and social impact MSD has in the community with its large-scale projects by ensuring ratepayers benefit from MSD's capital investment. The Community Benefits program provides opportunities in workforce development, skills-trade training, small business outreach and mentorship, and exposes youth to careers in the water sector. The vendor provides a financial contribution, volunteer hours or in-kind services to local non-profits and schools in Jefferson County.

Financial Planning:

MSD is focused on continuously strengthening its financial position through planning and analysis in order to meet its short-term and long-term operational and infrastructure plans.

MSD's short-term plan looks forward five years at a time. Formalized budgets are developed and approved annually by the Board for operating and capital spending. Budgets are developed with an eye toward maintaining operational efficiency and achieving incremental improvement of MSD's critical debt service coverage and debt to operating ratios.

MSD's long-term financial planning window is twenty years and is supported by the Critical Repair and Reinvestment Program and a twenty year comprehensive financial model. The financial model enables MSD to analyze alternative scenarios in order to optimize resources in the face of competing priorities. Rate adjustments are carefully considered in conjunction with bond issues and other debt with an eye toward maintaining affordability for the ratepayer. Key long-term considerations are debt service coverage, maintaining level debt service payments, and maintaining adequate cash reserves.

Awards

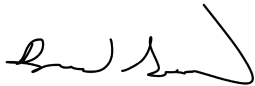
The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to MSD for its comprehensive annual financial report (CAFR) for the fiscal year ended June 30, 2019. This was the 30th consecutive year that MSD has achieved this prestigious award. In order to be awarded a Certificate of Achievement, MSD must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current CAFR continues to meet the Certificate of Achievement Program's requirements and we will submit it to GFOA to determine its eligibility for another certificate.

Acknowledgements

The Finance division of MSD has worked hard to produce the 2020 CAFR and I would like to thank them for their individual contributions. I would also like to take this opportunity to thank the MSD Board of Directors and the Executive Leadership Team for their continued support.

Respectfully Submitted,



Brad Good
Chief Financial Officer



Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Louisville and Jefferson County
Metropolitan Sewer District, Kentucky**

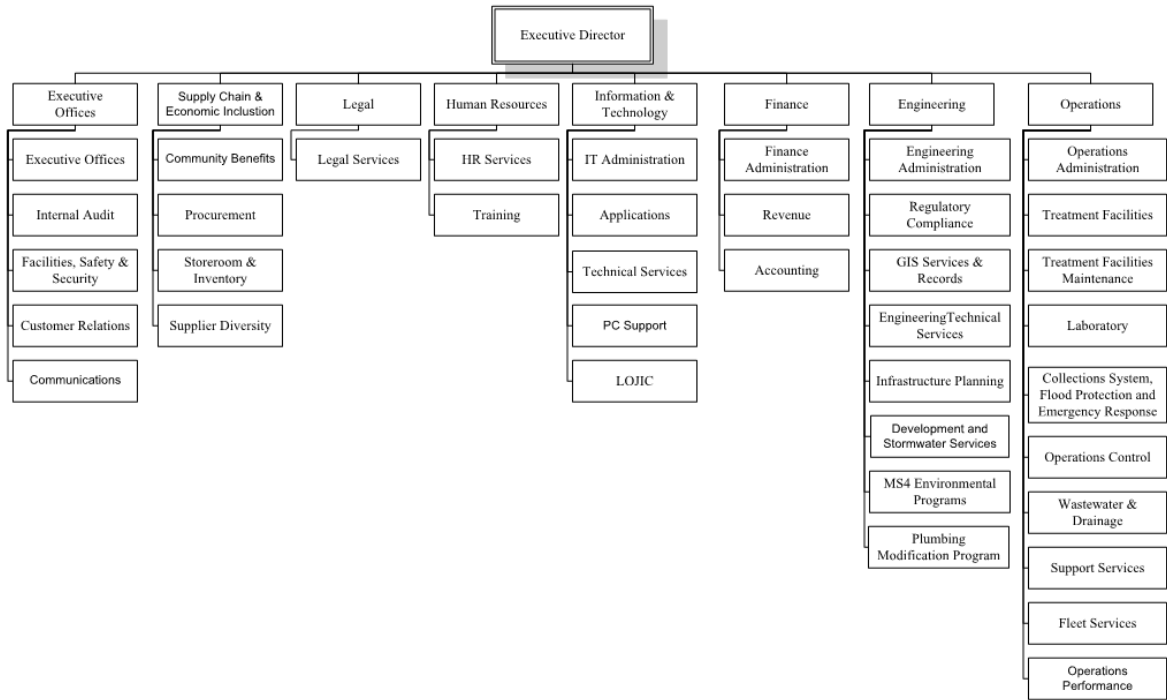
For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2019

Christopher P. Morill

Executive Director/CEO

Louisville and Jefferson County
Metropolitan Sewer District
Organization Chart



BOARD OF DIRECTORS



Marita Willis
Chair



Dan Arbough
Vice Chair



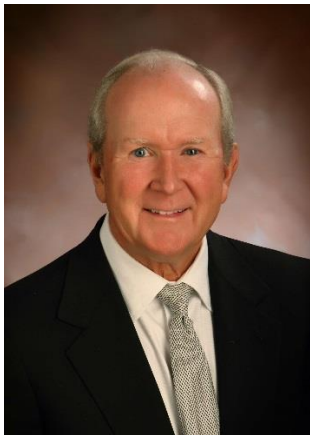
Andrew Bailey



Keith Jackson



Ricky Mason



JT Sims



Jason Williams



Cyndi Caudill

PRINCIPAL OFFICERS



James A. Parrott
Executive Director
Secretary/Treasurer



Angela Akridge
Chief Strategy Officer



David Johnson
Chief Engineer



Brad Good
Chief Financial Officer



Brian Bingham
Chief of Operations



Lynne Fleming
Human Resources Director



Paula Middleton Purifoy
General Counsel and
Legal Director

PRINCIPAL OFFICERS



M. Tom Lockett
One Water
Chief Information Officer



Kimberly Reed
One Water
Chief Innovation Officer



Rene' Lindsay
One Water
Chief Procurement Officer



A kayaker enjoying a channel off the Ohio River near downtown Louisville.

FINANCIAL SECTION

INDEPENDENT AUDITOR'S REPORT

Board of Directors
Louisville and Jefferson County Metropolitan Sewer District
Louisville, Kentucky

Report on Financial Statements

We have audited the accompanying financial statements of the Louisville and Jefferson County Metropolitan Sewer District, a component unit of the Louisville-Jefferson County Metro Government, as of and for the years ended June 30, 2020 and 2019, and the related notes to the financial statements, which collectively comprise the Louisville and Jefferson County Metropolitan Sewer District'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.

Auditor's 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 and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. 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 Louisville and Jefferson County Metropolitan Sewer District, as of June 30, 2020 and 2019, and the changes in financial position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 3 through 11, the Schedule of Proportionate Share of the Net Pension Liability on page 62, and the Schedule of Pension Contributions on page 64, the Schedule of Proportionate Share of the Net OPEB Liability on page 65, and the Schedule of OPEB Contributions on page 66 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by 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.

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Louisville and Jefferson County Metropolitan Sewer District's basic financial statements. The introductory and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements. The introductory and statistical sections have not been subjected to the auditing procedures applied in the audits of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Governmental Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 30, 2020 on our consideration of the Louisville and Jefferson County Metropolitan Sewer District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Louisville and Jefferson County Metropolitan Sewer District's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Louisville and Jefferson County Metropolitan Sewer District's internal control over financial reporting and compliance.


Crowe LLP

Louisville, Kentucky
October 30, 2020

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT MANAGEMENT'S DISCUSSION AND ANALYSIS

The management of Louisville and Jefferson County Metropolitan Sewer District (MSD) present this Management's Discussion and Analysis (MD&A) for the fiscal year ended June 30, 2020 and 2019. This narrative provides the reader with condensed comparative financial data, an analysis of the results of our operations, a description of capital asset and long term debt activity, and a discussion of future economic factors that will impact our operations. This MD&A is intended to be read in conjunction with the financial statements immediately following this section.

FINANCIAL HIGHLIGHTS

- MSD merged with Oldham County Environmental Authority (OCEA) as of June 30, 2020. At the merger date, total assets increased by \$42.6 million, total liabilities increased by \$28.8 million and net position increased by \$13.7 million¹.
- Total net position increased from fiscal 2019 to fiscal 2020 by \$26.1 million, or 3.4%.
- Total assets and deferred outflows of resources increased \$197.6 million, or 5.7%, from fiscal 2019 to fiscal 2020.
- Operating revenues increased in fiscal 2020 by \$24.7 million, or 8.4% primarily due to a rate increase of 6.9% effective August 1, 2019.
- Operating expenses increased by \$23.2 million, or 11.4% as a result of increases in depreciation and amortization expense of \$11 million and service and administrative costs of \$6.6 million over fiscal 2019.
- MSD maintained unrestricted cash and investments totaling \$100 million as of June 30, 2020. This is equal to 331 days cash on hand compared to 283 days cash on hand at June 30, 2019.
- Total debt coverage was 1.60x for fiscal 2020 compared to 1.54x for fiscal 2019 while senior debt coverage was 1.88x for fiscal 2020 compared to 1.81x for fiscal 2019.

OVERVIEW OF THE FINANCIAL STATEMENTS

MSD uses the accrual basis of accounting to prepare its financial statements wherein revenues are recorded when earned and expenses are recorded at the time a liability is incurred. MD&A serves as a narrative introduction to the financial statements which consist of the following parts:

Statement of Net Position: This statement includes all of MSD's assets, liabilities and deferred outflow and inflow of resources. It provides information about the nature and amounts of investments in assets and the obligations to creditors. In addition, it provides the basis for computing rate of return, evaluating the capital structure of MSD and assessing the liquidity and financial flexibility of the organization.

Statement of Revenues, Expenses and Changes in Net Position: This statement identifies the revenues generated and expenses incurred during the fiscal year and helps the user to assess the financial efficiency of MSD during the time period for which the statement relates.

Statement of Cash Flows: This statement provides information related to MSD's cash receipts and cash expenditures during the fiscal year. It reports cash receipts, cash payments, and net changes in cash resulting from operations, investing, and financing activities.

Notes to the Financial Statements: The notes contain descriptions of the policies underlying the amounts displayed in the financial statements along with other information that is essential to a full understanding of the data provided in the financial statements.

Required Supplementary Information: Information is presented related to MSD's pension and Other Post-Employment Benefits (OPEB) including annual contributions made to the plans and annual investment returns.

¹ See Note 1 – Reporting Entity for additional details.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

Other supplemental information is presented for comparative analysis and is not part of the basic financial statements. Other supplemental information consists of:

Statistical Section: Ten years of financial statement information, operating indicators, and demographic information is presented for comparative analysis.

FIGURE 1 - CONDENSED NET POSITION INFORMATION

(amounts in thousands)	FY 2020	FY 2019	FY 2018	2020-2019		2019-2018	
				Increase (Decrease)	% Change	Increase (Decrease)	% Change
Unrestricted current assets	\$ 136,424	\$ 116,928	\$ 109,940	\$ 19,496	16.7%	\$ 6,988	6.4%
Restricted current assets	17,776	52,520	29,987	(34,744)	(66.2%)	22,533	75.1%
Capital assets	3,302,757	3,118,659	2,925,982	184,098	5.9%	192,677	6.6%
Restricted non-current assets	79,555	76,678	152,438	2,877	3.8%	(75,760)	(49.7%)
Other non-current assets	29,799	31,644	32,221	(1,845)	(5.8%)	(577)	(1.8%)
Total assets	3,566,311	3,396,429	3,250,568	169,882	5.0%	145,861	4.5%
Deferred outflows of resources	79,767	52,018	54,267	27,749	53.3%	(2,249)	(4.1%)
Total assets and deferred outflows	3,646,078	3,448,447	3,304,835	197,631	5.7%	143,612	4.3%
Current liabilities	24,176	18,168	16,342	6,008	33.1%	1,826	11.2%
Current liabilities from restricted assets	105,856	95,537	108,978	10,319	10.8%	(13,441)	(12.3%)
Non-current liabilities	2,702,796	2,551,235	2,460,458	151,561	5.9%	90,777	3.7%
Total liabilities	2,832,828	2,664,940	2,585,778	167,888	6.3%	79,162	3.1%
Deferred inflows of resources	16,520	12,955	10,383	3,565	27.5%	2,572	24.8%
Total liabilities and deferred outflows	2,849,348	2,677,895	2,596,161	171,453	6.4%	81,734	3.1%
Net investment in capital assets	684,412	672,304	528,377	12,108	1.8%	143,927	27.2%
Restricted, net	80,421	81,207	156,425	(786)	(1.0%)	(75,218)	(48.1%)
Unrestricted	31,897	17,041	23,872	14,856	87.2%	(6,831)	(28.6%)
Total net position	796,730	770,552	708,674	26,178	3.4%	61,878	8.7%
Total liabilities, deferred inflows & net position	\$ 3,646,078	\$ 3,448,447	\$ 3,304,835	\$ 197,631	5.7%	\$ 143,612	4.3%

STATEMENT OF NET POSITION

Net Position: MSD's net position increased \$26.1 million, or 3.4%, in fiscal 2020 and increased \$61.8 million, or 8.7%, in fiscal 2019 (see Figure 1). Increases or decreases in net position serve as useful indicators of MSD's financial condition over time.

The largest portion of MSD's net position is its net investment in capital assets. Net investment in capital assets increased \$12.1 million in fiscal 2020 and increased \$143.9 million in fiscal 2019. Capital asset construction and acquisitions were funded in 2020 by \$135 million of commercial paper notes², cash generated from operations, and contributions in aid of construction from developers. Capital asset construction and acquisitions were funded in 2019 by a \$120 million of commercial paper notes, cash generated from operations, and contributions in aid of construction from developers

Funds restricted for a specific purpose by the 1993 Sewer and Drainage System Revenue Bond Resolution (the General Bond Resolution) are classified as restricted net position. MSD is required by the resolution to make monthly transfers to its debt service accounts sufficient to meet the semi-annual debt service payments on outstanding bonds. The General Bond Resolution sets a debt service reserve requirement equal to at least 10% of the face amount of all bonds issued under the resolution, 100% of the maximum aggregate net debt service in the current or any future fiscal year or 125% of the average aggregate net debt service in the current or any future fiscal year. MSD funds the reserve at 100% of maximum aggregate net debt service with a combination of invested cash and a \$75 million debt service reserve surety policy³. Restricted net position decreased \$0.7 million from fiscal 2019 to fiscal 2020. Restricted net position decreased \$75.2 million from fiscal 2018 to fiscal 2019 as the remaining funds in the 2017 construction fund were spent and assets previously restricted for the debt reserve were freed up by the issuance of the debt service reserve surety policy were spent on construction.

² See Note 7 – Long-Term Debt

³ See Note 3 for additional information.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

The remaining balance of MSD's net position is unrestricted and may be used for any allowable purpose. Unrestricted net position increased \$14.8 million from fiscal 2019 to fiscal 2020 primarily as the result of the OCEA merger. Unrestricted net position decreased \$6.8 million from fiscal 2018 to fiscal 2019 as MSD's pension and OBEB obligations increased.

Total assets and deferred outflows of resources increased by \$197.6 million in fiscal 2020. This increase can be attributed primarily to additions to plant, lines and other facilities. Total assets and deferred outflows of resources increased by \$143.6 million in fiscal 2019. This increase can be attributed primarily to additions to plant, lines and other facilities.

Total liabilities and deferred inflows of resources increased in 2020 by \$171.4 million. Noncurrent liabilities account for most of this growth with \$135 million in additional commercial paper notes issued and outstanding at the end of the year. Deferred inflows of resources increased by \$3.5 million primarily due to an increase in the OPEB deferred inflow. Total liabilities and deferred inflows of resources increased in 2019 by \$81.7 million. Current liabilities decreased by \$11.6 million. Noncurrent liabilities increased by \$90.7 million as commercial paper issuances were offset by a reduction in bonds payable. Deferred inflows of resources increased by \$2.5 million primarily due to an increase in the OPEB deferred inflow.

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

FIGURE 2 - CONDENSED STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION INFORMATION							
<i>(amounts in thousands)</i>	FY 2020	FY 2019	FY 2018	2020-2019		2019-2018	
				Increase (Decrease)	%	Increase (Decrease)	%
Operating revenues							
Service charges	\$ 312,859	\$ 289,173	\$ 274,504	\$ 23,686	8.2%	\$ 14,669	5.3%
Other operating income	6,198	5,195	4,645	1,003	19.3%	550	11.8%
Total operating revenues	319,057	294,368	279,149	24,689	8.4%	15,219	5.5%
Non-operating revenues	592	18,692	16,529	(18,100)	(96.8%)	2,163	13.1%
Total revenues	319,649	313,060	295,678	6,589	2.1%	17,382	5.9%
Operating expenses							
Service and administrative costs	110,302	103,699	93,800	6,603	6.4%	9,899	10.6%
GASB 68/75 pension expense	17,826	12,243	10,852	5,583	45.6%	1,391	12.8%
Depreciation & amortization expense	98,872	87,882	77,954	10,990	12.5%	9,928	12.7%
Total operating expenses	227,000	203,824	182,606	23,176	11.4%	21,218	11.6%
Non-operating expenses							
Interest expense	100,387	96,214	90,779	4,173	4.3%	5,435	6.0%
Amortization of debt discount/premium	(10,284)	(11,527)	(12,051)	1,243	(10.8%)	524	(4.3%)
Change in fair value - swaps	(812)	13,597	(16,317)	(14,409)	(106.0%)	29,914	(183.3%)
Total non-operating expenses	89,291	98,284	62,411	(8,993)	(9.2%)	35,873	57.5%
Total expenses	316,291	302,108	245,017	14,183	4.7%	57,091	23.3%
Income before capital contributions	3,358	10,952	50,661	(7,594)	(69.3%)	(39,709)	(78.4%)
Capital contributions	9,085	50,926	12,726	(41,841)	(82.2%)	38,200	300.2%
Increase (decrease) in net position	12,443	61,878	63,387	(49,435)	(79.9%)	(1,509)	(2.4%)
Net position - Beginning	770,552	708,674	645,287	61,878	8.7%	63,387	9.8%
Net position - OCEA Merger	13,735	-	-	13,735	0.0%	-	0.0%
Net position - Ending	\$ 796,730	\$ 770,552	\$ 708,674	\$ 26,178	3.4%	\$ 61,878	8.7%

Operating Revenues: Operating revenues as of June 30, 2020 were \$319 million (see Figure 2). This represents an increase of \$24.6 million, or 8.4%, in fiscal 2020. The increase in operating revenues was driven by a Board-approved rate increase of 6.9% effective August 1, 2019. In addition, \$6.9 million in wastewater service charges were recognized in connection with the OCEA merger⁴. Wastewater service charges totaled \$237.8 million which is an increase of \$18.3 million, or 8.4%, from a year ago. Drainage service charges totaled \$75 million which represents an increase of \$5.3 million, or 7.7%, from the same

⁴ See Note 1 – Reporting Entity for additional information.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT MANAGEMENT'S DISCUSSION AND ANALYSIS

period one year ago. Other operating income totaled \$6.2 million, which is \$1 million more than one year ago.

Operating revenues as of June 30, 2019 were \$294.4 million. This represents an increase of \$15.2 million, or 5.5%, in fiscal 2019. The increase in operating revenues was driven by a Board-approved rate increase of 6.9% effective August 1, 2018. Wastewater service charges totaled \$219.5 million which is an increase of \$8.9 million, or 4.2%, from fiscal 2018. Drainage service charges totaled \$69.7 million which represents an increase of \$5.9 million, or 9.2%, from fiscal 2018. Other operating income totaled \$5.2 million or \$0.6 million more than fiscal 2018.

Non-operating Revenues: Non-operating revenues, which represent gain or loss on disposal of assets, interest income earned on investments and the federal interest subsidy on MSD's Build America Bonds, decreased \$18.1 million in fiscal 2020. Liquidation of investments previously held in the debt service reserve account for \$3 million of this decrease. These funds were released upon the issuance of a debt service reserve surety policy in June 2019⁵. The remaining \$15.1 million is a loss on the disposal of the remaining drum dryer assets at the Morris Forman Water Quality Treatment Center. Non-operating revenues increased \$2.1 million in fiscal 2019 largely due to improved yields on the investment portfolio.

Operating Expenses: Service and administrative costs increased by \$6.6 million, or 6.4%, in fiscal 2020 from fiscal 2019. This increase is largely due to service and administrative costs totaling \$5.4 million recognized in connection with the OCEA merger⁶.

Service and administrative costs increased by \$9.9 million in fiscal 2019 from fiscal 2018. Salary and benefit costs increased \$6.6 million to 49.8% of net service and administrative costs compared to 48.7% in fiscal 2018. This increase was made up of salary increases, workers compensation claim increases and higher CERS pension contributions. Utility expenses increased by \$2.8 million due to higher peak-demand rates as a result of a February 2018 flooding event. Bad Debt expense totaled 1.29% of service charge revenue for fiscal 2019 compared to 1.43% for fiscal 2018.

Non-operating Expenses: Non-operating expenses increased \$8.9 million in fiscal 2020 from fiscal 2019. Net interest expense increased \$4.1 million largely as a result of a decrease in capitalized interest expense due to lower borrowing costs. The change in fair value of MSD's swap portfolio decreased \$14.4 million. Non-operating expenses increased \$35.8 million in fiscal 2019 from fiscal 2018. Net interest expense increased \$5.4 million largely as a result of a decrease in capitalized interest expense due to a smaller construction in progress balance. The change in fair value of MSD's swap portfolio increased \$29.9 million as interest rates increased.

⁵ See Note 3 for additional information.

⁶ See Note 1 – Reporting Entity for additional information.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

Capital Contributions: Capital contributions decreased \$41.8 million in fiscal 2020 from fiscal 2019. This change was driven by a decrease in contributions of drainage infrastructure constructed by developers. Capital contributions increased \$38.2 million in fiscal 2019 from fiscal 2018. This increase was driven by an increase in contributions of drainage infrastructure constructed by developers. In addition, MSD also received \$3.3 million on its 2018 flood event property insurance claim. See Figure 3 for additional information.

FIGURE 3 - CAPITAL CONTRIBUTIONS

<i>(amounts in thousands)</i>	FY 2020	FY 2019	FY 2018	2020-2019		2019-2018	
				Increase (Decrease)	% Change	Increase (Decrease)	% Change
Cash flows from:							
Developer's capital - wastewater	\$ 2,474	\$ 12,267	\$ 5,543	\$ (9,793)	(79.8%)	\$ 6,724	121.3%
Developer's capital - drainage	4,826	29,286	-	(24,460)	100.0%	29,286	0.0%
Federal grants	937	5,903	7,183	(4,966)	(84.1%)	(1,280)	(17.8%)
Capital recovery	436	156	-	280	100.0%	156	0.0%
Miscellaneous claims recovery	412	3,314	-	(2,902)	100.0%	3,314	0.0%
Total capital contributions	\$ 9,085	\$ 50,926	\$ 12,726	\$ (41,841)	(82.2%)	\$ 38,200	300.2%

STATEMENT OF CASH FLOWS

FIGURE 4 - CONDENSED STATEMENT OF CASH FLOWS INFORMATION

<i>(amounts in thousands)</i>	FY 2020	FY 2019	FY 2018	2020-2019		2019-2018	
				Increase (Decrease)	% Change	Increase (Decrease)	% Change
Cash flows from:							
Operating activities	\$ 214,052	\$ 189,618	\$ 181,561	\$ 24,434	12.9%	\$ 8,057	4.4%
Capital and related financing activities	(231,573)	(245,133)	(147,727)	13,560	(5.5%)	(97,406)	65.9%
Investing activities	93,525	40,666	(51,717)	52,859	130.0%	92,383	(178.6%)
Change in cash and cash equivalents	76,004	(14,849)	(17,883)	90,853	(611.8%)	3,034	(17.0%)
Cash and temporary investments, Beginning of year	66,813	81,662	99,545	(14,849)	(18.2%)	(17,883)	(18.0%)
Cash and cash equivalents, End of year	\$ 142,817	\$ 66,813	\$ 81,662	\$ 76,004	113.8%	\$ (14,849)	(18.2%)

Cash and cash equivalents were \$142.8 million at the end of fiscal 2020 which is an increase of \$76 million from fiscal 2019 or 113.8% (see Figure 4). Cash flows from operating activities increased as revenue and customer receipts grew. Cash used by financing activities in fiscal 2020 decreased primarily as a result of a reduction in borrowing. Cash provided by investing activities in fiscal 2020 increased as MSD liquidated investments previously held in the debt service reserve to finance construction⁷.

Cash and cash equivalents were \$66.8 million at the end of fiscal 2019 which is a decrease of \$14.8 million from fiscal 2018 or 18.2% (see Figure 4). Cash flows from operating activities increased as revenue and customer receipts grew. Cash used by financing activities in fiscal 2019 decreased primarily as a result of a reduction in borrowing. Cash provided by investing activities in fiscal 2019 increased as several bonds in the investment portfolio were called and MSD liquidated its commercial paper holdings to finance construction.

⁷ See Note 3 for additional information.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

CAPITAL ASSETS

FIGURE 5 - CAPITAL ASSETS NET OF DEPRECIATION

<i>(amounts in thousands)</i>	FY 2020	FY 2019	Increase (Decrease) 2020-2019	FY 2018	Increase (Decrease) 2019-2018
Sewer lines	\$ 1,363,408	\$ 1,292,272	\$ 71,136	\$ 1,159,110	\$ 133,162
Wastewater treatment facilities	215,163	222,196	(7,033)	229,950	(7,754)
Drainage facilities	697,632	651,346	46,286	410,390	240,956
Pumping and lift stations	157,849	159,063	(1,214)	111,902	47,161
Administrative facilities	11,379	11,869	(490)	11,827	42
Maintenance facilities	5,419	5,329	90	1,941	3,388
Machinery and equipment	23,722	28,188	(4,466)	10,015	18,173
Miscellaneous	1,481	2,074	(593)	2,357	(283)
Capitalized interest	288,691	285,821	2,870	276,835	8,986
Construction in progress	538,013	460,501	77,512	711,655	(251,154)
Total	<u>\$ 3,302,757</u>	<u>\$ 3,118,659</u>	<u>\$ 184,098</u>	<u>\$ 2,925,982</u>	<u>\$ 192,677</u>

MSD's total capital assets net of depreciation increased by \$184 million in fiscal 2020 (see Figure 5). Construction in progress contained the biggest increase with \$77.5 million of additions due to capital project activity during the year. Sewer line increases are due to the completion of large scale sewer rehabilitation projects in the Camp Taylor area and the Ohio River Interceptor along Main Street. Depreciation expense was \$98.9 million or \$11 million more than fiscal 2019.

MSD's total capital assets net of depreciation increased by \$192.7 million in fiscal 2019 (see Figure 5). Drainage facilities contained the biggest increase with \$241 million of additions. Depreciation expense was \$87.9 million or \$9.9 million more than fiscal 2018.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

DEBT ADMINISTRATION

FIGURE 6 - SCHEDULE OF BONDS AND OTHER FINANCING

<i>(amounts in thousands)</i>	FY 2020	FY 2019	Increase (Decrease) 2020-2019	FY 2018	Increase (Decrease) 2019-2018
Senior Revenue Bonds					
Series 2009A	\$ -	\$ -	\$ -	\$ 6,640	\$ (6,640)
Series 2009B	-	35,155	(35,155)	52,975	(17,820)
Series 2009C	180,000	180,000	-	180,000	-
Series 2010A	330,000	330,000	-	330,000	-
Series 2011A	246,225	248,440	(2,215)	250,565	(2,125)
Series 2013A	115,790	115,790	-	115,790	-
Series 2013B	112,575	114,100	(1,525)	115,550	(1,450)
Series 2013C	99,250	99,375	(125)	99,500	(125)
Series 2014A	79,750	79,800	(50)	79,850	(50)
Series 2015A	173,160	173,360	(200)	173,735	(375)
Series 2015B	71,515	74,160	(2,645)	76,685	(2,525)
Series 2016A	149,290	149,530	(240)	149,760	(230)
Series 2016B	23,915	25,825	(1,910)	28,095	(2,270)
Series 2016C	50,515	67,685	(17,170)	67,685	-
Series 2017A	161,895	169,270	(7,375)	175,000	(5,730)
Series 2017B	32,885	33,670	(785)	34,520	(850)
Series 2018A	60,380	60,380	-	60,380	-
Series 2019A	24,770	-	24,770	-	-
Bond Anticipation Notes					
Series 2017A	-	-	-	226,340	(226,340)
Series 2018A	-	226,340	(226,340)	-	226,340
Series 2019A	226,340	-	226,340	-	-
Other Subordinate Debt					
General Obligation Bonds	12,453	-	12,453	-	-
Commercial Paper Notes	255,000	120,000	135,000	-	120,000
SRF Loans	15,818	2,658	13,160	1,871	787
KACO Lease	2,180	-	2,180	-	-
Notes Payable - LOC	100	100	-	-	100
	<u>\$ 2,423,806</u>	<u>\$ 2,305,638</u>	<u>\$ 118,168</u>	<u>\$ 2,224,941</u>	<u>\$ 80,697</u>

Excludes bond premiums/discouts

MSD ended fiscal 2020 with \$2.4 billion in outstanding long-term debt compared to \$2.3 billion in outstanding long-term debt at the end of fiscal 2019⁸ (see Figure 6). This is primarily due to the issuance of additional commercial paper to finance ongoing construction. Short term debt outstanding payable from restricted assets at the end of fiscal 2020 totaled \$330.4 million compared to \$95.5 million at the end of fiscal 2019. This increase is due to \$225 million of commercial paper notes planned to be redeemed in fiscal 2021 with proceeds from a long term bond offering⁹. Net interest expense totaled \$89.7 million in fiscal 2020, an increase of \$5.0 million from fiscal 2019.

MSD ended fiscal 2019 with \$2.3 billion in outstanding long-term debt compared to \$2.2 billion in outstanding long-term debt at the end of fiscal 2018¹⁰ (see Figure 6). Short term debt outstanding payable

⁸ See Note 7 for additional information.

⁹ See Note 13 – Series 2020A for additional information.

¹⁰ See Note 7 for additional information.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS**

from restricted assets at the end of fiscal 2019 totaled \$95.5 million compared to \$109.1 million at the end of fiscal 2018. Net interest expense totaled \$84.7 million in fiscal 2019, an increase of \$6.0 million from fiscal 2018.

Debt Service Ratio: Although net operating income is the most significant component of determining MSD's debt service coverage ratio, other sources, including investment income and current period payments of property owner assessments, are also included in available revenues and net revenues for purposes of demonstrating MSD's compliance with the debt service ratio tests in the General Bond Resolution.

The General Bond Resolution and its supplements require MSD to provide available revenues for each fiscal year sufficient to pay the sum of 110% of each year's aggregate net debt service on revenue bonds, the amount, if any, required to be paid into the reserve account, all operating expenses as estimated in the annual budget, debt service on senior subordinated debt and any other subordinate debt and amounts necessary to pay and discharge all charges or liens payable out of available revenues. Available revenues, as used for purposes of the resolution, means all revenues and other amounts received by MSD and pledged as security for payment of bonds issued pursuant to the resolution, but excludes interest income which is capitalized in accordance with generally accepted accounting principles.

Net operating expenses include all reasonable, ordinary, usual or necessary current expenses of maintenance, repair, and operation determined in accordance with generally accepted accounting principles and the enterprise basis of accounting. Operating expenses do not include reserves for extraordinary maintenance and repair or administrative and engineering expenses of MSD which are necessary or incidental to capital improvements for which debt has been issued and which may be paid from proceeds of such debt.

Aggregate net debt service is debt service on all bonds issued pursuant to the resolution including principal payments, excluding (i) interest expense which, in accordance with generally accepted accounting principles, is capitalized and which may be paid from the proceeds of debt and (ii) other amounts, if any, available or expected to be available in the ordinary course of business for payment of debt service.

MSD's debt service coverage ratio¹¹, calculated on the foregoing basis, was 188% in 2020, 181% in 2019 and 190% in 2018 (see Figure 7).

FIGURE 7 - DEBT SERVICE COVERAGE					
<i>(amounts in thousands)</i>	FY 2020	FY 2019	Increase (Decrease) 2020-2019	FY 2018	Increase (Decrease) 2019-2018
Total available revenues	\$335,566	\$314,318	6.8%	\$296,912	5.9%
Total net operating expenses	110,302	103,699	6.4%	93,800	10.6%
Net revenue	225,264	210,619	7.0%	203,112	3.7%
Aggregate net debt service	\$119,868	\$116,607	2.8%	\$107,088	8.9%
Debt service coverage ratio	188%	181%	4.0%	190%	(4.8%)

¹¹ Excludes GASB 68 pension expense and GASB 75 OPEB expense.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT MANAGEMENT'S DISCUSSION AND ANALYSIS

FUTURE ECONOMIC FACTORS

On March 16, 2020, in response to the COVID-19 pandemic, Louisville Water Company stopped disconnecting water service for non-payment of water and sewer bills and Louisville Water and MSD ceased assessing late charges on past due balances. Since that date, MSD's number of delinquent accounts has grown from approximately 500 accounts prior to the pandemic to 10,500 accounts by June 30, 2020. MSD is working in conjunction with Louisville Water to offer payment plans and other assistance programs to enable customers to bring their accounts current. MSD estimates lost revenue from the cessation of late charge penalties amounts to approximately \$750 thousand in fiscal year 2020 and could range up to \$1.5 million in fiscal year 2021. As of June 30, 2020, MSD and Louisville Water have no current timeline for resuming water service disconnections or late charge penalties.

As the federal, state, and local governments, including MSD, continue efforts to contain and limit the spread of COVID-19, billable revenue and revenue collections may deviate from historical performance and may have an adverse impact on the financial position and operations of MSD to a degree that cannot currently be estimated. As of June 30, 2020, MSD has approximately \$100 million of unrestricted operating cash on hand, which is expected to be adequate to fund essential services and make timely debt service payments. In addition, MSD can issue program notes to provide short-term funding for its capital improvement program. MSD, however, is not able to predict and makes no representations as to the future economic impact of the COVID-19 pandemic on its operations.

On July 27, 2020, the MSD Board approved a 5.0% rate increase for wastewater and drainage volume and service charges as well as optional and quality charge rates that are assessed to commercial and industrial wastewater customers effective August 1, 2020. This rate increase is coupled with an Emergency Wastewater Rate Assistance Program (EWRAP) that provides a 10% discount on the wastewater portion of the bill to eligible households.

On September 11, 2020, Standard and Poor's Rating Service assigned its SP-1+ rating to MSD's \$226.3 million sewer and drainage system subordinated Bond Anticipation notes, series 2020. At the same time, they assigned their AA rating on the MSD's 2020C sewer and drainage system revenue refunding taxable bonds and maintained its AA long-term rating and stable outlook on MSD's outstanding series of revenue bonds and the A-1+ commercial paper program rating.

On September 14, 2020, Moody's Investors Service assigned its MIG 1 rating to MSD's \$226.3 million sewer and drainage system subordinated bond anticipation notes, series 2020. Moody's also assigned a Aa3 rating to MSD's 2020C sewer and drainage system revenue refunding taxable bonds and maintained its Aa3 long-term rating and stable outlook on MSD's outstanding series of revenue bonds.

CONSENT DECREE

In April 2009, MSD agreed to enter into an amended consent decree with the Commonwealth of Kentucky's Environmental and Public Protection Cabinet (KEPPC) and the U.S. Environmental Protection Agency (EPA) that superseded the original consent decree entered on August 12, 2005. The amended consent decree focuses on eliminating sewer overflows in MSD's service area through an Integrated Overflow Abatement Plan (IOAP). The IOAP was amended in 2012 and 2014 to improve compliance and adjust capital project schedules. The cost of these projects is currently estimated to be \$1.15 billion of which MSD has spent \$974.3 million as of June 30, 2020. To date, MSD has complied with all submittals and reports requirements contained in the amended Consent Decree¹².

REQUESTS FOR ADDITIONAL INFORMATION

This report is intended to provide readers with a general overview of MSD's finances and to provide information regarding the receipts and uses of funds. If you need clarification regarding a statement(s) made in the report or need additional information, please contact the Louisville and Jefferson County Metropolitan Sewer District, 700 West Liberty Street, Louisville Kentucky 40203. You can also submit a request for additional information via MSD's website, www.msdlouky.org.

¹² See Note 12 – EPA Consent Decree for additional information.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF NET POSITION
AS OF JUNE 30,
DOLLARS IN THOUSANDS

	2020	2019
Current Assets		
Unrestricted Current Assets		
Cash and cash equivalents	\$ 99,973	\$ 43,728
Investments	100	36,744
Accounts receivable, less allowance for doubtful accounts of \$2,054 (2020), \$959 (2019)	27,227	27,915
Inventories	4,977	4,623
Accrued interest receivable	186	957
Prepaid expenses and other current assets	3,961	2,961
Total unrestricted current assets	136,424	116,928
Restricted Current Assets		
Cash and cash equivalents	17,776	22,348
Investments	-	30,172
Total restricted current assets	17,776	52,520
Total Current Assets	154,200	169,448
Noncurrent Assets		
Unrestricted Noncurrent Assets		
Accounts receivable, non-current	12,776	13,730
Restricted Noncurrent Assets:		
Cash and cash equivalents	25,068	737
Investments	54,487	75,941
Other non-current assets	17,023	17,914
Total restricted non-current assets	96,578	94,592
Capital Assets		
Utility plant in service	4,114,641	3,962,588
Less allowance for depreciation	(1,349,897)	(1,304,430)
	2,764,744	2,658,158
Construction in progress	538,013	460,501
Net capital assets	3,302,757	3,118,659
Total Non-current Assets	3,412,111	3,226,981
Total Assets	3,566,311	3,396,429
Deferred Outflow of Resources		
Deferred outflow - pension	31,784	26,931
Deferred outflow - OPEB	14,331	10,571
Deferred outflow - derivative instruments	20,822	-
Unamortized loss on refunding	12,830	14,516
Total deferred outflow of resources	79,767	52,018
Total Assets and Deferred Outflow of Resources	\$ 3,646,078	\$ 3,448,447

See the accompanying notes to the financial statements.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF NET POSITION (continued)
AS OF JUNE 30,
DOLLARS IN THOUSANDS

	2020	2019
Current Liabilities		
Current Liabilities To Be Paid From Unrestricted Assets		
Accounts payable	\$ 14,689	\$ 10,567
Accrued salaries and related benefits	9,487	7,601
Total unrestricted current liabilities	24,176	18,168
Current Liabilities To Be Paid From Restricted Assets		
Accounts payable and accrued expenses (capital), includes contractor retainage of \$13,216 (2020), \$12,190 (2019)	39,860	31,945
Accrued interest payable	17,315	17,819
Refundable deposits	2,954	2,928
Revenue bonds payable	43,460	42,200
Bank notes	100	100
Other subordinate debt	2,167	545
Total restricted current liabilities	105,856	95,537
Total Current Liabilities	130,032	113,705
Noncurrent Liabilities		
Bonds payable, net	1,942,913	1,994,761
Bond anticipation note	226,340	226,340
Commercial paper notes	255,000	120,000
Other subordinate debt	28,284	2,113
Investment derivative asset liability	72,228	73,040
At-market derivative asset liability	20,822	-
Net pension liability	126,866	104,511
Net OPEB obligation	30,343	30,470
Total Noncurrent Liabilities	2,702,796	2,551,235
Total Liabilities	2,832,828	2,664,940
Deferred Inflow of Resources		
Deferred inflow - pension	2,581	3,198
Deferred inflow - OPEB	10,609	5,780
Other deferred inflows	3,330	3,977
Total deferred inflow of resources	16,520	12,955
Total Liabilities and Deferred Inflow of Resources	\$ 2,849,348	\$ 2,677,895
Net Position		
Net investment in capital assets	\$ 684,412	\$ 672,304
Restricted for debt service	80,421	81,207
Unrestricted	31,897	17,041
Total net position	796,730	770,552
Total Liabilities, Deferred Inflow of Resources and Net Position	\$ 3,646,078	\$ 3,448,447

See the accompanying notes to the financial statements.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
FOR THE YEARS ENDED JUNE 30,
DOLLARS IN THOUSANDS

	<u>2020</u>	<u>2019</u>
Operating Revenues		
Service charges	\$ 312,859	\$ 289,173
Other operating income	6,198	5,195
Total operating revenues	<u>319,057</u>	<u>294,368</u>
Operating Expenses		
Service and administrative costs	110,302	103,699
GASB 68 pension/GASB 75 OPEB actuarial expense	17,826	12,243
Depreciation and amortization	98,872	87,882
Total operating expenses	<u>227,000</u>	<u>203,824</u>
Income from Operations	<u>92,057</u>	<u>90,544</u>
Non-operating Revenue (Expenses)		
Gain/Loss disposal of assets	(15,008)	15
Investment income	5,275	8,338
Build America bond refund	10,325	10,339
Interest expense - bonds	(92,274)	(94,831)
Interest expense - swaps	(8,027)	(6,468)
Interest expense - other	(13,129)	(13,497)
Amortization of debt discount / premium	12,688	14,344
Amortization of loss on refunding	(2,404)	(2,817)
Capitalized interest	13,043	18,582
Change in fair value - swaps	812	(13,597)
Total non-operating revenue (expenses) - net	<u>(88,699)</u>	<u>(79,592)</u>
Income before capital contributions	3,358	10,952
Capital contributions	<u>9,085</u>	<u>50,926</u>
Increase in net position	12,443	61,878
Net position, beginning	770,552	708,674
Net position, OCEA merger	<u>13,735</u>	<u>-</u>
Net position, beginning of year, as adjusted	<u>784,287</u>	<u>708,674</u>
Net position, ending	<u>\$ 796,730</u>	<u>\$ 770,552</u>

See the accompanying notes to the financial statements.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF CASH FLOWS
FOR THE YEARS ENDED JUNE 30,
DOLLARS IN THOUSANDS

	<u>2020</u>	<u>2019</u>
Cash Flows from Operating Activities		
Cash received from customers	\$ 319,701	\$ 292,791
Cash paid to suppliers	(57,043)	(55,816)
Cash paid to employees	(48,606)	(47,357)
Net Cash Provided by Operating Activities	214,052	189,618
Cash Flows from Capital and Related Financing Activities		
Proceeds from issuance of bond anticipation note	230,079	230,334
Proceeds from issuance of commercial paper	770,000	319,112
Proceeds from issuance of notes	90,200	100
Payments for retirement of revenue bonds	(43,120)	(40,190)
Payments for retirement of bond anticipation note	(226,340)	(226,340)
Payments for retirement of commercial paper	(635,000)	(200,000)
Payments for retirement of notes	(90,200)	-
Payments for retirement of other subordinated debt	(2,120)	(317)
Payments for interest expense	(106,312)	(108,511)
Payments for interest on swaps	(7,622)	(6,468)
Build America bond interest subsidy	10,325	10,339
Proceeds from capital grants	1,786	9,373
Proceeds from sale of capital assets	-	15
Payments for capital assets	(224,418)	(233,360)
Proceeds from assessments	1,169	780
Net Cash Provided (Used) by Capital and Related Financing	(231,573)	(245,133)
Cash Flows from Investing Activities		
Purchase of investments	(394,721)	(45,576)
Maturity of investments	481,382	80,004
Investment income	6,864	6,238
Net Cash Provided (Used) by Investing Activities	93,525	40,666
Net Increase (Decrease) in Cash and Cash Equivalents	76,004	(14,849)
Cash and Cash Equivalents, Beginning of Year	66,813	81,662
Cash and Cash Equivalents, End of Year	\$ 142,817	\$ 66,813

See the accompanying notes to the financial statements.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF CASH FLOWS (continued)
FOR THE YEARS ENDED JUNE 30,
DOLLARS IN THOUSANDS

	<u>2020</u>	<u>2019</u>
Reconciliation of Operating Income to Net Cash provided by Operating Activities		
Income from operations	\$ 92,057	\$ 90,544
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation and amortization	98,872	87,882
Accounts receivable	617	(1,644)
Inventories	(354)	(216)
Prepaid expense	(1,000)	(1,084)
Accounts payable	4,122	141
Customer deposits	26	67
Accrued liabilities	1,886	1,685
Pension liability	16,885	10,971
OPEB liability	941	1,272
Net Cash Provided by Operating Activities	<u>\$ 214,052</u>	<u>\$ 189,618</u>
 Non-Cash Capital Financing and Investing Activities		
Contribution of plant, lines and other facilities by developers and property owners	\$ 7,300	\$ 41,554
Construction costs in accounts payable	39,860	31,945
Change in fair value of investments	1,208	(600)
Decrease in interest rate swap deferred revenue	672	918
Change in fair value - swap agreements	812	(13,597)
Bonds issued for refunding of debt - Series 2019A	30,910	-
Long term debt and other liabilities related to OCEA merger	28,687	-
Capital assets and other receivables related to OCEA merger	41,751	-

See the accompanying notes to the financial statements.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

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LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

NOTE 1 – SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Louisville and Jefferson County Metropolitan Sewer District (MSD), a discreetly presented component unit of Louisville/Jefferson County Metro Government, are prepared in conformity with accounting principles generally accepted in the United States of America as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. MSD follows GASB Pronouncements as codified under GASB 62, including electing to report as a regulated operation. MSD uses proprietary fund accounting (enterprise fund). Due to the election as a regulated operation under GASB 62, to meet industry accounting standards and follow transactional intent, MSD uses, as applicable, ASC 980, Regulated Accounting.

Reporting Entity: MSD is a public body corporate, and political subdivision of the Commonwealth of Kentucky. MSD was created in 1946 pursuant to Chapter 76 of the Kentucky Revised Statutes, in the interest of the public health and for the purpose of providing adequate sewer and drainage facilities in the urbanized area of the Louisville Metropolitan Area. Pursuant to Chapter 76, MSD is governed by a Board which consists of eight members who are appointed by the Mayor of Louisville Metro Government, subject to approval of Louisville Metro Council. Not more than five Board members may be of the same political party. However, there is not a continuing supervisory relationship exercised by Louisville Metro Government over MSD with respect to MSD's statutory public functions.

Chapter 76 authorizes MSD to provide sewer and drainage facilities and services. MSD is further authorized by the statute to establish and collect service charges and to budget accordingly for operations and maintenance, capital outlays and debt service on obligations it is authorized by the statute to incur. No special financing relationship exists between Louisville Metro Government and MSD, nor is Louisville Metro Government empowered by law or custom to approve MSD's operating or capital budgets; nor are they responsible for financing deficits or disposing of surplus funds.

MSD has complete control, possession and supervision of the sewer and drainage system in large portions of Jefferson County, and has statutory authority to construct additions, betterments and extensions within its service area. Additionally, MSD has statutory responsibility for approval of the design and proper construction of sewer and drainage facilities within the County's boundaries. There are cities within Jefferson County that, by statute, have the option of using MSD sewer services on a contractual basis. Third and fourth class cities also have the option of obtaining drainage services from MSD.

In 2018 the Kentucky General Assembly amended KRS 76.080 to allow MSD to enter into agreements with other entities to acquire by purchase, any real or personal property, or any interest, right, easement, or privilege therein, outside of its Jefferson County boundaries in connection with the acquisition, construction, operation, repair or maintenance of any sewage, wastewater or drainage facility. Subsequent to this change MSD has reached three agreements extending its service area outside of Jefferson County. On May 31, 2019, MSD acquired the Crestwood wastewater collection system pursuant to the terms and conditions of an Interlocal Cooperation Agreement (ILA) dated April 9, 2019. On April 27, 2020, MSD entered into an ILA with Shelby County to own, maintain, and operate sewer and wastewater facilities and collections systems in a prescribed service area in the easternmost corner of Shelby County. On June 30, 2020, MSD completed a merger with the Oldham County Environmental Authority (OCEA) pursuant to the terms of an ILA. This agreement provided for the transfer of the OCEA wastewater collection and treatment system to MSD and OCEA's 6,000 customers became customers of MSD.

MSD classified the ILA with OCEA as a merger as no significant consideration was exchanged. GASB Statement No. 69, Government Combinations and Disposals of Government Operations, requires that for government mergers, the combined assets and liabilities should be recognized and measured in the Statement of Net Position as of the beginning of the initial reporting period, or July 1, 2019. No significant adjustments were made to bring amounts into conformity with MSD's accounting policies or to adjust for impairment of capital assets resulting from the merger.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

A summary of the amounts recognized as of the beginning of fiscal year 2020 follows:

(dollars in thousands)	July 1, 2019
Reported in Statements of Net Position:	
Current and other assets	\$ 4,291
Capital assets	<u>38,320</u>
Total assets	<u>\$ 42,611</u>
Current liabilities	\$ 1,944
Noncurrent liabilities	<u>26,932</u>
Total liabilities	<u>\$ 28,876</u>
Net investment in capital assets	\$ 9,981
Unrestricted	<u>3,754</u>
Total net position	<u>13,735</u>
Total liabilities and net position	<u>\$ 42,611</u>

MSD's enterprise business activities are managed by its Board, which has statutory authority to elect officers, enact bylaws and enter into agreements and contracts for the management and regulation of MSD's affairs. MSD's revenue is derived from wastewater and drainage service charges which are collected from residential, commercial and industrial customers. MSD controls the collection of all revenue, disbursement of payables and title to all sewer and drainage assets. Wastewater service charges are distributed among customer classes on the basis of actual costs incurred to collect and treat wastewater. Drainage service charges are distributed among customer classes on the basis of actual costs of drainage services per equivalent unit of impervious surface.

Changes in MSD's service charges are implemented by MSD's Board. Kentucky statute provides that MSD's service charge revenues shall be sufficient to provide for the operation and maintenance of the system and for debt service. By ordinance, Louisville Metro Government has provided that MSD's Board may amend its service charge schedule to maintain a debt service ratio of 1.10 for MSD's sewer and drainage revenue bonds, and that such amendments will be effective within the metropolitan area when adopted by MSD's Board, so long as the amended rates do not generate additional revenue from service charges in excess of 7% during the twelve months succeeding the period in which the deficiency was identified. Amendments that would generate additional revenues in excess of 7% require Louisville Metro Council approval.

Chapter 76 permits MSD to finance sewer and drainage system construction, acquisition and other capital improvements through the issuance of its revenue bonds and with the proceeds of governmental grants, property owner contributions in aid of construction and bonds and loans for which pledge of repayment is subordinated to the pledge of all revenues given by MSD for the security of its revenue bond holders. MSD indebtedness does not constitute indebtedness of Louisville Metro Government or the Commonwealth, but Louisville Metro Government must authorize by ordinance the issuance by MSD of revenue bonds to finance projects within the service area.

Basis of Accounting: The sewer and drainage system owned and operated by MSD is accounted for using a flow of economic resources measurement focus. With this measurement focus, all assets and all liabilities associated with the operation of the system are included on the Statement of Net Position. Total

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

net position is segregated into net investment in capital assets, restricted for payment of bond principal and interest and unrestricted. Operating statements present increases (e.g., revenues) and decreases (e.g., expenses) in net position. MSD utilizes the accrual basis of accounting wherein revenues are recorded when earned and expenses are recorded at the time the liability is incurred.

Cash and Cash Equivalents: For purposes of the Statements of Cash Flows, MSD includes repurchase agreements and other investments with an original maturity of three months or less in cash and cash equivalents. Both restricted and unrestricted amounts are included on the Statements of Cash Flows.

Restricted and Unrestricted Funds: Restricted funds are reserved for the purpose of bond debt service, funding of capital construction, cost of issuance, and debt service reserves. Unrestricted funds, generated from service fees and other operating income, are used to pay for operating expenses. When an expense or outlay is incurred for which both restricted and unrestricted net position is available, it is MSD's general practice is to use revenue from operations to finance construction, then to reimburse from restricted net position for construction as it is needed.

Investment Securities: Investments are stated at fair value. Investment income consists of interest income and the change in fair value of investments¹. Investment income is reduced by applicable estimated federal arbitrage liability.²

Revenues, Expenses and Receivables: Operating revenues are those revenues that are generated directly from the primary activity of MSD. These revenues are wastewater and drainage service charges and other operating income. The Louisville Water Company and Oldham County Water are responsible for the billing and collection of these charges on behalf of MSD on a monthly basis. Operating expenses are expenses incurred through the activities of operating and maintaining MSD facilities.

Non-operating revenues and expenses are comprised of investment and financing earnings and costs, changes in the fair value of derivatives, as well as contributions from outside sources.

Accounts receivable are stated at the amount management expects to collect from outstanding customer accounts. Accounts are considered past due 30 days from the invoice date. Management provides an allowance for doubtful account that is based on historical collection experience and a review of the current status of individual accounts. Accounts that remain outstanding after management has exerted reasonable collection efforts are written off through a charge to allowance for doubtful accounts and a credit to accounts receivable. The allowance for doubtful accounts was valued at June 30, 2020 and June 30, 2019 as \$2,054,343 and \$959,140, respectively.

Assessment receivables represent amounts billed to residents to have sewer lines installed in their neighborhood. Assessment receivables are considered past due once the balance is 90 days in arrears. Management considers all amounts collectible on the basis that liens are placed on properties at the time of assessment. These receivables may be current or non-current assets.

Inventory: Inventory is stated at cost. Inventory consists of supplies and parts used in the operation of MSD's treatment plants and for the maintenance of sewers, fleet vehicles and other related equipment. Inventory totaled \$4,977,115 at June 30, 2020 and \$4,622,556 at June 30, 2019.

Contributed Capital and Construction Grants: MSD finances construction of sewer and drainage plant, lines and other facilities, in part, through government grants and contributions from property owners and developers. Governmental grants in aid of construction represent the estimated portion of construction costs incurred for which grants are expected to be paid to MSD by the governmental grantor. These amounts are recorded as a receivable and revenues from contributions at the time the related expenditures are incurred. Revenues from contributions are part of the change in net position. Government grants in aid

¹ See Note 2 – Deposits and Investments

² See Note 7 – Long-Term Debt

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

of construction and other recoveries at June 30, 2020 and June 30, 2019 were \$1,784,849 and \$9,372,512, respectively. Contributed capital in the form of sewer and drainage infrastructure constructed by developers at June 30, 2020 and June 30, 2019 were \$7,300,151 and \$41,553,937, respectively.

Capital Assets - Plant, Lines and Other Facilities: Plant, lines and other facilities are recorded at historical cost or, if contributed, at acquisition value as determined by engineering estimates on the date the contribution is received. It is MSD's policy to depreciate the costs of these assets over their estimated useful lives on a straight line basis³.

Estimated useful lives on depreciable assets are as follows:

Building and other structures	30-50 years
Land improvements	10-30 years
Miscellaneous machinery	10-20 years
Vehicles	6-12 years
Equipment, heavy	15-30 years
Equipment, light	5-15 years
Sewer lines and drainage channels	20-80 years

Costs incurred for capital construction and acquisition are carried in construction in progress until disposition or completion of the related projects. The major components of construction in progress are sewer lines, wastewater treatment and drainage facilities. Costs relating to projects not pursued are expensed, while costs relating to completed projects are capitalized as plant, lines and other facilities.

Capitalized Interest: Interest capitalized on projects funded from bond proceeds is recorded as the average cumulative expenditures multiplied by the weighted average borrowing rate.⁴ Interest is not capitalized on project costs that are reimbursed by contributions of capital from government, property owners and developers.

Impairment of Capital Assets: In accordance with GASB Statement No. 42, *Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries*, management evaluates prominent events or changes in circumstances affecting capital assets to determine whether impairment of a capital asset has occurred. Such events or changes in circumstances that may be indicative of impairment include evidence of physical damage, enactment or approval of laws or regulations, other changes in environmental factors, technology changes or evidence of obsolescence, changes in the manner of duration of use of a capital asset, and construction stoppage. A capital asset is generally considered impaired if both (a) the decline in service utility of the capital asset is large in magnitude and (b) the event or change in circumstance is outside the normal life cycle of the capital asset. No impairment losses were recognized in fiscal 2020. In fiscal 2019, MSD recognized an impairment loss of \$3,209,647 on the remaining book value of one of the four dryers that comprise the drum dryer asset at the Morris Forman Water Quality Treatment Center. The dryer is no longer in use. The impairment loss was recognized as a component of depreciation expense.

Bonds Payable: Bonds payable are recorded at the principal amount outstanding, net of any applicable premium or discount⁵.

Bonds outstanding, which have been refunded and economically defeased, are not included in long-term debt. The related assets are not included in investments. Any loss on refunding, which is the difference between the reacquisition price and the net carrying amount of the old debt, is deferred outflow of resources and amortized as a component of interest expense over the shorter of either 1) the original life of the refunded debt or 2) the life of the refunding debt.

³ See Note 5 – Capital Assets – Plant, Lines, and Other Facilities

⁴ See Note 6 – Capitalized Interest

⁵ See Note 7 – Long-Term Debt

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

MSD enters into interest rate swap agreements to modify interest rates on outstanding debt. MSD records the net interest expenditures resulting from these agreements and amortizes gains/losses resulting from the termination of these agreements until the original termination date of the agreement. The changes in fair value of derivative instruments that are classified as hedging derivative instruments are reported in the Statement of Net Position as deferred outflow of resources. Changes in fair value of investment derivative instruments are reported in non-operating revenue (expenses) on the Statement of Revenues, Expenses and Changes in Net Position⁶.

Bond issue costs are capitalized and amortized over the life of the respective bond issue using the straight-line method, which approximates the effective interest method, pursuant to the election of regulatory operation under GASB 62, as they are deemed recoverable through future rates.

Original issue discounts and premiums on bonds are amortized as a component of interest expense using the straight-line method, which approximates the effective interest method, over the lives of the bonds to which they relate.

Compensated Absences: Vacation and personal pay benefits are accrued as accumulated and vested by MSD employees.

Allocation of Overhead: MSD allocates overhead costs to its core business processes: operations and maintenance; design, construction and acquisition of plant lines and other facilities; and subsidiary business enterprises.

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 assumptions and estimates that affect the reported amounts of assets and liabilities and 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.

Income Tax Status: MSD is exempt from federal income tax under the Internal Revenue Code as a political subdivision of the Commonwealth of Kentucky.

Adoption of New Accounting Pronouncements: Effective July 1, 2019 MSD adopted the following GASB pronouncement:

- Statement No. 95: *Postponement of the Effective Dates of Certain Authoritative Guidance*

Recent Accounting Pronouncements: GASB has issued additional guidance that is not yet effective. MSD is currently reviewing the provisions of the following GASB Statements to determine the impact of implementation in future periods.

- Statement No. 84: *Fiduciary Activities (fiscal 2021)*
- Statement No. 87: *Leases (fiscal 2021)*
- Statement No. 89: *Accounting for Interest Cost Incurred Before The End of a Construction Period (fiscal 2022)*
- Statement No. 90: *Majority Equity Interests – An Amendment of GASB Statements No 14 and No. 61 (fiscal 2021)*
- Statement No. 91: *Conduit Debt Obligations (fiscal 2022)*
- Statement No. 92: *Omnibus 2020 (fiscal 2021)*
- Statement No. 93: *Replacement of Interbank Offered Rates (fiscal 2022)*
- Statement No. 94: *Public-Private and Public-Public Partnerships and Availability Payment Arrangements (fiscal 2024)*

⁶ See Note 9 – Derivative Instruments.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

- Statement No. 96: *Subscription-based Information Technology Arrangements (fiscal 2023)*
- Statement No. 97: *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans – an Amendment of GASB Statements No. 14 and No. 84 and a Supersession of GASB Statement No. 32 (fiscal 2022)*

Reclassifications: Prior period financial statement amounts have been reclassified to conform to current period presentation. These reclassifications had no effect on the changes in net position or total net position.

NOTE 2 – CASH DEPOSITS AND INVESTMENTS

A reconciliation of cash, cash equivalents and investments as shown on the Comparative Statement of Net Position for MSD follows:

(dollars in thousands)	June 30,	
	2020	2019
Reported in Statements of Net Position:		
Cash and cash equivalents		
Unrestricted	\$ 99,973	\$ 43,728
Restricted - current	17,776	22,348
Restricted - noncurrent	25,068	737
Total cash and cash equivalents	<u>142,817</u>	<u>66,813</u>
Investments		
Unrestricted	100	36,744
Restricted - current	-	30,172
Restricted - noncurrent	54,487	75,941
Total investments	<u>54,587</u>	<u>142,857</u>
Total Cash, Cash Equivalents and Investments	<u>\$ 197,404</u>	<u>\$ 209,670</u>

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

The following comparative schedule presents the cash, cash equivalents and investments in MSD's portfolio at fair value with investment maturities and credit risk ratings from Moody's Investors Service.

June 30, 2020 (dollars in thousands)			
	Reported Value	Weighted Average Maturity in Years	Credit Rating
U.S. treasuries	\$ 12,434	0.05	Aaa
U.S. agency securities	24,823	0.07	Aaa
Municipal bonds	17,230	1.07	Aa
Money market funds	103,368	0.08	Aaa
Repurchase agreement/cash	39,449		
Certificate of Deposit	100	0.00	
Total cash, cash equivalents and investments	<u>\$ 197,404</u>	<u>4.27</u>	
Accrued interest	\$ 186		
June 30, 2019 (dollars in thousands)			
	Reported Value	Weighted Average Maturity in Years	Credit Rating
U.S. treasuries	\$ 19,550	1.22	Aaa
U.S. agency securities	78,402	1.25	Aaa
Municipal bonds	44,805	13.47	Aa
Money market funds	27,688	0.08	Aaa
Repurchase agreement/cash	39,125		
Certificate of Deposit	100	0.00	
Total cash, cash equivalents and investments	<u>\$ 209,670</u>	<u>4.27</u>	
Accrued interest	\$ 957		

Section 66.480 of the Kentucky Revised Statutes and MSD's bond resolutions authorize MSD to invest money subject to its control in, among other securities, (i) obligations of the United States and of its agencies and instrumentalities, including obligations subject to repurchase agreements, (ii) certificates of deposit or other interest-bearing accounts of any bank or savings and loan institution which are insured by the Federal Deposit Insurance Corporation or, to the extent not so insured, collateralized by obligations described in clause (i) above, (iii) securities issued by a state or local government, or any instrumentality or agency thereof, in the United States, and rated in either of the two highest categories by a nationally recognized rating agency, and (iv) money market mutual funds investing in any of the securities described above.

Investments are made based upon prevailing market conditions at the time of the transaction with the intent to hold the instrument until maturity. With this strategy, investments would be expected to reach maturity with limited realized gains or losses. If the yield of the portfolio can be improved upon by the sale of an investment, prior to its maturity, with the reinvestment of the proceeds, then this provision is also allowed.

Risks: *Concentration of Credit Risk:* MSD's Investment Policy (the Policy) requires that investments be diversified to eliminate the risk of loss resulting from over-concentration of assets in a specific maturity, a specific issuer, or a specific class of securities. Section 4.4.1 of the Policy limits the amount of money invested at any time in one or more categories of the investments authorized by KRS 66.480 1e, 1f, 1g, and 1i shall not exceed 20% of the total amount invested. MSD was in compliance with its investment policy at June 30, 2020 and 2019.

Interest Rate Risk: MSD minimizes interest rate risk by structuring the investment portfolio so that securities mature to meet cash requirements for ongoing operations, thereby avoiding the need to sell securities on the open market prior to maturity. The weighted average maturity in years represents the interest rate risk for MSD.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

Custodial Credit Risk: This is the risk that, in the event of the failure of the counterparty, MSD would not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The collateral provided by financial institutions is considered adequate to cover all balances in excess of limits set forth by the Federal Deposit Insurance Corporation. All of MSD's investments are held by MSD or in the name of MSD by a Trustee.

Foreign Currency Risk: This risk relates to any potential adverse effects on the fair value of an investment from changes in exchange rates. MSD did not hold any foreign currency as of June 30, 2020 and 2019.

Fair Value Measurement: GASB 72 requires MSD to disclose how we measure the fair value of investments and the underlying valuation techniques. Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for these securities or repurchase agreements. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing approach. Matrix pricing is used to value securities based on the securities' relationship to the benchmark quoted prices. A comparative statement of investments subject to fair value measurements and valuation techniques follows:

June 30, 2020 (dollars in thousands)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Investments by fair value level:				
U.S. treasuries	\$ -	\$ 12,434	\$ -	\$ 12,434
U.S. agencies	-	24,823	-	24,823
State and municipal obligations	-	17,230	-	17,230
Total investments by fair value level	<u>\$ -</u>	<u>\$ 54,487</u>	<u>\$ -</u>	<u>\$ 54,487</u>

June 30, 2019 (dollars in thousands)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Investments by fair value level:				
U.S. treasuries	\$ -	\$ 19,550	\$ -	\$ 19,550
U.S. agencies	-	78,402	-	78,402
State and municipal obligations	-	44,805	-	44,805
Total investments by fair value level	<u>\$ -</u>	<u>\$ 142,757</u>	<u>\$ -</u>	<u>\$ 142,757</u>

NOTE 3 - RESTRICTED CASH, CASH EQUIVALENTS, AND INVESTMENTS

MSD's General Bond Resolution sets a debt service reserve requirement equal to at least 10% of the face amount of all bonds issued under the resolution, 100% of the maximum aggregate net debt service in the current or any future fiscal year or 125% of the average aggregate net debt service in the current or any future fiscal year. MSD funded its debt service reserve as of June 30, 2020, at 100% of the maximum aggregate net debt service in the current or any future fiscal year or, \$151,136,081. The General Bond

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

Resolution allows, in lieu of cash and investments in that amount, a letter of credit or policy of bond insurance payable in the required amount.

On June 26, 2019 MSD purchased a debt service reserve surety policy (the Reserve Policy) from Build America Mutual Assurance Company with a maximum policy limit of \$75,000,000. The Reserve Policy terminates on May 15, 2048 which is the date of the last principal payment on MSD's outstanding revenue bonds. Draws under the Reserve Policy may only be used to make payments of principal and interest on the bonds. Cash and investments in the debt service reserve funds shall be transferred to the debt service funds for payment of debt service on the bonds before any draw may be made on the Reserve Policy.

Cash and investments restricted for debt service reserve at June 30, 2020 totaled \$79,555,123. Total assets restricted for debt service were \$97,330,639, which includes the debt service reserve and other debt service trust accounts of \$17,775,516. Cash and investments restricted for debt service reserve at June 30, 2019 totaled \$76,678,594. Total assets restricted for debt service were \$99,026,252 which includes the debt service reserve and other debt service trust accounts of \$22,347,658.

Cash, cash equivalents and investments segregated in accounts restricted for authorized construction include proceeds from issuance of MSD bonds and commercial paper at June 30, 2020 and 2019 totaled \$0 and \$30,171,774, respectively. Total restricted cash, cash equivalents, and investments at June 30, 2020 and 2019 totaled \$97,330,639 and \$129,198,026, respectively.

NOTE 4 - SCHEDULE OF NET POSITION

A comparative Schedule of Net Position follows:

<i>(dollars in thousands)</i>	June 30,	
	2020	2019
Net investment in capital assets:		
Plant, lines and other facilities net of depreciation	\$ 3,302,757	\$ 3,118,659
Outstanding debt that applies to plant, lines and other facilities	(2,591,315)	(2,459,098)
Unspent bond proceeds - construction	-	30,172
Accounts payable and accrued expenses (capital)	(39,860)	(31,945)
Deferred outflows and inflows of resources	12,830	14,516
Total	<u>684,412</u>	<u>672,304</u>
Restricted for:		
Assets restricted for debt service	97,331	99,026
Liabilities associated with restricted debt service	(16,910)	(17,819)
	<u>80,421</u>	<u>81,207</u>
Assets restricted for construction	-	30,172
Unspent bond proceeds - construction	-	(30,172)
Net position, restricted	<u>80,421</u>	<u>81,207</u>
Unrestricted net position	<u>31,897</u>	<u>17,041</u>
Total net position	<u>\$ 796,730</u>	<u>\$ 770,552</u>

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

NOTE 5 - CAPITAL ASSETS - PLANT, LINES AND OTHER FACILITIES

A comparative schedule of plant, lines and other facilities follows:

June 30, 2020 (dollars in thousands)	Beginning Balance*	Transfers In/ Additions	Retirements / Reclassifications	Ending Balance
Capital assets:				
Sewer lines	\$ 1,668,227	\$ 78,479	-	\$ 1,746,706
Wastewater treatment facilities	691,122	15,131	(78,351)	627,902
Drainage facilities	817,128	63,735	-	880,863
Pumping and lift stations	248,801	7,427	-	256,228
Administrative facilities	51,735	563	-	52,298
Maintenance facilities	12,459	-	-	12,459
Machinery and equipment	87,253	2,190	(306)	89,137
Miscellaneous	32,129	-	-	32,129
Capitalized interest	403,876	13,043	-	416,919
Total capital assets	4,012,730	180,568	(78,657)	4,114,641
Less accumulated depreciation and amortization:				
Sewer lines	(362,098)	(21,199)	-	(383,297)
Wastewater treatment facilities	(451,191)	(24,893)	63,343	(412,741)
Drainage facilities	(165,782)	(17,449)	-	(183,231)
Pumping and lift stations	(85,103)	(13,275)	-	(98,378)
Administrative facilities	(39,866)	(1,052)	-	(40,918)
Maintenance facilities	(6,746)	(294)	-	(7,040)
Machinery and equipment	(59,065)	(6,655)	306	(65,414)
Miscellaneous	(29,735)	(914)	-	(30,649)
Capitalized interest	(118,132)	(10,097)	-	(128,229)
Total accumulated depreciation/amortization	(1,317,718)	(95,828)	63,649	(1,349,897)
Construction in progress	460,501	219,100	(141,588)	538,013
Net capital assets	\$ 3,155,513	\$ 303,840	\$ (156,596)	\$ 3,302,757

*Beginning balance changes from prior year are due to OCEA merger.

Capital assets include non-depreciable assets for land related to all facilities and pumping and lift stations. The carrying value was \$34,716,044 and \$16,577,077 at June 30, 2020 and 2019 respectively.

In fiscal 2020, MSD disposed of the remaining three dryers that comprised the drum dryer asset at the Morris Forman Water Quality Treatment Center. The dryers were sold for scrap. The resulting loss on disposal was \$15,008,849 and is recorded as a component of non-operating revenue (expenses).

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

June 30, 2019 (dollars in thousands)	Beginning Balance	Transfers In/ Additions	Retirements / Reclassifications	Ending Balance
Capital assets:				
Sewer lines	\$ 1,497,090	\$ 151,801	-	\$ 1,648,891
Wastewater treatment facilities	648,503	20,538	-	669,041
Drainage facilities	561,341	255,787	-	817,128
Pumping and lift stations	183,795	57,168	-	240,963
Administrative facilities	50,818	916	-	51,734
Maintenance facilities	8,504	3,570	-	12,074
Machinery and equipment	66,321	21,637	(705)	87,253
Miscellaneous	31,086	540	-	31,626
Capitalized interest	<u>385,296</u>	<u>18,582</u>	-	<u>403,878</u>
Total capital assets	3,432,754	530,539	(705)	3,962,588
Less accumulated depreciation and amortization:				
Sewer lines	(337,980)	(18,638)	-	(356,618)
Wastewater treatment facilities	(418,553)	(28,214)	-	(446,767)
Drainage facilities	(150,951)	(14,831)	-	(165,782)
Pumping and lift stations	(71,893)	(10,008)	-	(81,901)
Administrative facilities	(38,991)	(875)	-	(39,866)
Maintenance facilities	(6,563)	(183)	-	(6,746)
Machinery and equipment	(56,306)	(3,152)	392	(59,066)
Miscellaneous	(28,729)	(823)	-	(29,552)
Capitalized interest	<u>(108,461)</u>	<u>(9,671)</u>	-	<u>(118,132)</u>
Total accumulated depreciation/amortization	(1,218,427)	(86,395)	392	(1,304,430)
Construction in progress	<u>711,655</u>	<u>177,984</u>	<u>(429,138)</u>	<u>460,501</u>
Net capital assets	<u>\$ 2,925,982</u>	<u>\$ 622,128</u>	<u>\$ (429,451)</u>	<u>\$ 3,118,659</u>

NOTE 6 - CAPITALIZED INTEREST

A comparative schedule of capitalized interest and net interest expense reported in non-operating expenses follows:

(dollars in thousands)	June 30,	
	2020	2019
Interest incurred	\$ 103,145	\$ 103,270
Less interest capitalization	<u>(13,043)</u>	<u>(18,582)</u>
Interest expense, net	<u>\$ 90,102</u>	<u>\$ 84,688</u>

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

NOTE 7 - LONG-TERM DEBT

A schedule of long-term debt outstanding at June 30, 2020 and 2019 follows.

June 30, 2020 (dollars in thousands)					
Issue Description	Outstanding at Beginning of Year	Issued	Retired	Outstanding at End of Year	Payable Within One Year
Revenue bonds	\$ 1,956,540	\$ 30,910	\$ 75,535	\$1,911,915	\$ 43,460
Unamortized premium/discount	80,421	6,714	12,677	74,458	10,252
General obligation bonds*	13,267	-	814	12,453	824
Commercial paper notes	120,000	770,000	635,000	255,000	-
Bank notes	100	90,200	90,200	100	100
SRF loans*	15,250	1,729	1,161	15,818	1,193
Financing lease*	2,325	-	145	2,180	150
Total	<u>\$2,187,903</u>	<u>\$ 899,553</u>	<u>\$ 815,532</u>	<u>\$2,271,924</u>	<u>\$ 55,979</u>

*Beginning balance changes from prior year are due to OCEA merger.

June 30, 2019 (dollars in thousands)					
Issue Description	Outstanding at Beginning of Year	Issued	Retired	Outstanding at End of Year	Payable Within One Year
Revenue bonds	\$ 1,996,730	\$ -	\$ 40,190	\$1,956,540	\$ 42,200
Unamortized premium/discount	90,628	4,137	13,344	80,421	9,307
Commercial paper notes	-	320,000	200,000	120,000	-
Bank notes	-	100	-	100	100
SRF loans	1,871	1,104	317	2,658	545
Total	<u>\$2,089,229</u>	<u>\$ 325,341</u>	<u>\$ 253,851</u>	<u>\$2,159,719</u>	<u>\$ 52,152</u>

Revenue Bonds: MSD's long-term revenue bonds are publicly issued under its General Bond Resolution adopted December 7, 1992, to pay at maturity program notes issued and outstanding as senior subordinated debt under the Program Note Resolution adopted June 25, 2018. Prior to 2018, MSD publicly issued revenue bonds to finance sewer and drainage projects. MSD has pledged all revenues to the payment of principal and interest on its outstanding revenue bonds. Pursuant to the General Bond Resolution, upon the occurrence of any event of default, holder or holders of twenty percent in principal amount or more of the bonds then outstanding may apply to a Judge in the Circuit Court of Jefferson County to appoint a trustee to represent all Bondholders and the trustee may declare all bonds due and payable.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

MSD has remedies available under the Resolution to cure the event of default even after all bonds are declared due and payable.

Federal tax regulations generally require the periodic payment to the U.S. Treasury of investment earnings on the proceeds of an issue of tax-exempt municipal bonds to the extent those earnings exceed the yield on the bonds. Such payments, known as arbitrage rebate, are normally payable every fifth year following the issuance of a Series of bonds and upon the retirement of the bond issue. MSD has arbitrage calculations performed as needed by an independent third party to comply with these regulations. As of June 30, 2020 and 2019, MSD's accrued liability for arbitrage rebate was \$626,441 and \$483,905, respectively.

A debt service coverage ratio covenant has been established under the 1992 General Bond Resolution. MSD was in compliance with the ratio covenant as of June 30, 2020 and 2019.

Fiscal Year 2020 Significant Debt Transactions: On August 19, 2019, MSD issued \$30,910,000 of revenue refunding bonds, Series 2019. The proceeds of the Series 2019 bonds, together with certain amounts in the debt service account, were used to: (i) currently refund \$35,155,000 of outstanding principal amount on MSD's sewer and drainage system revenue bonds, Series 2009B, maturing May 15, 2020 through May 15, 2023, the proceeds of which were used to pay, or to refund earlier Series of bond and notes issued to pay, the costs of improvements to MSD's sewer and drainage system, and (ii) pay the cost of issuance of the Series 2019 bonds. The refunding reduces debt service payments over the next 4 years by \$5,107,297 and resulted in a net present value savings of \$2,573,449.

On March 25, 2020, MSD entered into a Forward Delivery Bond Purchase agreement to refund \$243,910,000 of the Series 2011A bonds. Under the terms of the agreement, MSD has authorized the issuance, on a direct placement, forward delivery basis, of its sewer and drainage system revenue refunding bonds, Series 2021A. The bonds will be dated and delivered on August 17, 2021. Under the terms of a draft continuing covenant agreement for the 2021A bonds, if an event of default occurs the purchaser may declare the outstanding amount of principal and interest on the bonds to be immediately due and payable. The refunding reduces debt service payments by \$56,554,774 beginning in 2022 through 2034 which results in a net present value savings of \$45,575,104.

Fiscal Year 2019 Significant Debt Transactions: There were no revenue bond transactions in Fiscal Year 2019.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

A comparative schedule of revenue bonds payable at June 30, 2020 and 2019 follows:

<i>(dollars in thousands)</i>					
Revenue Bonds	Original Issue Amount	Interest Rates	Final Payment In	Outstanding as of June 30:	
				2020	2019
2009B Series Revenue Bonds	225,770	2.00% - 5.00%	2023	-	35,155
2009C Series Revenue Bonds	180,000	5.98%	2040	180,000	180,000
2010A Series Revenue Bonds	330,000	6.25%	2043	330,000	330,000
2011A Series Revenue Bonds	263,360	3.00% - 5.00%	2034	246,225	248,440
2013A Series Revenue Bonds	115,790	4.00%	2036	115,790	115,790
2013B Series Revenue Bonds	119,515	4.00% - 5.00%	2038	112,575	114,100
2013C Series Revenue Bonds	100,000	3.00% - 5.00%	2044	99,250	99,375
2014A Series Revenue Bonds	80,000	4.00% - 5.00%	2045	79,750	79,800
2015A Series Revenue Bonds	175,000	3.125% - 5.00%	2046	173,160	173,360
2015B Series Revenue Bonds	81,750	2.65% - 5.00%	2038	71,515	74,160
2016A Series Revenue Bonds	150,000	3.00% - 5.00%	2047	149,290	149,530
2016B Series Revenue Bonds	28,315	2.00% - 5.00%	2036	23,915	25,825
2016C Series Revenue Bonds	67,685	5.00%	2023	50,515	67,685
2017A Series Revenue Bonds	175,000	3.00% - 5.00%	2048	161,895	169,270
2017B Series Revenue Bonds	35,725	5.00%	2025	32,885	33,670
2018A Series Revenue Bonds	60,380	4.00%	2038	60,380	60,380
2019A Series Revenue Bonds	30,910	4.00%	2023	<u>24,770</u>	-
Total revenue bonds				1,911,915	1,956,540
Add: unamortized premium/discount				<u>74,458</u>	<u>80,421</u>
Total bonds payable				1,986,373	2,036,961
Less: current maturities				<u>(43,460)</u>	<u>(42,200)</u>
Total bonds payable, long term portion				<u>\$ 1,942,913</u>	<u>\$ 1,994,761</u>

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

A schedule of future revenue bond debt service requirements after June 30, 2020 follows:

<i>(dollars in thousands)</i>	Revenue Bonds		
	Principal	Interest	Total
Year Ending June 30,			
2021	\$ 43,460	\$ 90,909	\$ 134,369
2022	45,630	88,739	134,369
2023	47,905	86,460	134,365
2024	46,740	84,067	130,807
2025	49,025	81,778	130,803
2026-2030	271,610	369,473	641,083
2031-2035	254,760	318,120	572,880
2036-2040	513,850	236,027	749,877
2041-2045	494,350	91,739	586,089
2046-2050	144,585	9,083	153,668
	<u>\$ 1,911,915</u>	<u>\$ 1,456,395</u>	<u>\$ 3,368,310</u>

A comparative summary of current and long-term revenue bond activity follows:

<i>(dollars in thousands)</i>	June 30,	
	2020	2019
Revenue bonds - beginning of year	\$ 1,956,540	\$ 1,996,730
Bonds issued	30,910	-
Principal paid on bonds and bond refunding	<u>(75,535)</u>	<u>(40,190)</u>
Revenue bonds - end of year	<u>\$ 1,911,915</u>	<u>\$ 1,956,540</u>

General Obligation Bonds: MSD merged with the OCEA on June 30, 2020. Oldham County previously issued its County of Oldham general obligation bonds Series 2009, Series, 2014, and general obligation Series 2017 refunding bonds, the proceeds of which financed the costs of various improvements to the sanitary sewer system owned by OCEA. The balance of the bonds outstanding as of the beginning of the reporting period July 1, 2019 and the merger date, June 30, 2020 was \$13,256,062 and \$12,452,783, respectively. MSD agreed to support Oldham County's payment of debt service for the supported bonds subject to the terms of an Assistance Agreement dated June 30, 2020. Upon the occurrence of an uncured event of default under the Assistance Agreement, Oldham County is entitled to exercise any and all remedies available at law or in equity.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

A comparative summary of current and long-term general obligation bond activity follows:

<i>(dollars in thousands)</i>					
General Obligation Bonds	Original Issue Amount	Interest Rates	Final Payment In	Outstanding as of June 30:	
				2020	2019
2009 Series general obligation bonds	7,335	2.00% - 4.00%	2023	1,155	1,515
2017 Series general obligation bonds	3,750	2.08%	2030	3,433	3,477
2014 Series general obligation bonds	9,790	3.00% - 3.20%	2035	7,865	8,275
Total bonds payable				12,453	13,267
Add : unamortized premium/discount				-	167
Total general obligation bonds				12,453	13,434
Less: current maturities				(824)	(814)
Total bonds payable, long term portion				<u>\$ 11,629</u>	<u>\$ 12,620</u>

Commercial Paper and Bank Notes: On June 25, 2018, the MSD Board adopted a Program Note Resolution authorizing the issuance of one or more Series of sewer and drainage system subordinated program notes in an aggregate principal amount not to exceed \$500,000,000 for the purpose of financing eligible sewer and drainage projects and to refund program notes or subordinate lien bond anticipation notes. Program notes issued under the Program Note Resolution are subordinate and junior in all respects to revenue bonds issued under the General Bond Resolution. Program notes are issued as senior subordinated debt secured on a parity with the bond anticipation notes⁷.

On July 10, 2018, MSD issued two subseries of commercial paper notes under the Program Note Resolution: Series 2018A-1 with a maximum outstanding of \$250,000,000 and Series 2018A-2 with a maximum outstanding of \$250,000,000. Commercial paper notes may be issued and sold, at public or private sale, as taxable or tax-exempt notes, maturing in 270 days or less (but in any event not later than July 1, 2021) as determined by MSD, and bearing interest at a rate not in excess of 12% per annum for taxable notes or 10% per annum for tax-exempt notes. Commercial paper notes are payable only from (i) proceeds of the sale of other commercial paper notes issued under the Program Note Resolution and used to refund outstanding commercial paper notes, (ii) the proceeds of direct purchase notes or other loans used to refund outstanding commercial paper notes, and (iii) the proceeds of revenue bonds issued to pay outstanding commercial paper notes.

Liquidity support for the Commercial Paper Series 2018A-1 is provided by Bank of America, N.A (BANA) pursuant to a 3-year Revolving Credit Agreement dated July 1, 2018. BANA has provided a commitment of \$250,000,000 for the payment of the principal of and interest on the Series 2018A-1 notes. MSD and BANA entered into a Note Purchase Agreement dated July 1, 2018 providing for the purchase of direct purchase notes by BANA up to the aggregate principal amount of \$250,000,000. The BANA Revolving Credit Agreement and the BANA Note Purchase Agreement limit the aggregate principal amount of commercial paper notes Series 2018A-1 and the BANA direct purchase notes to \$250,000,000. Merrill Lynch, Pierce, Fenner & Smith Inc. is acting as the dealer for Series 2018A-1 notes.

Liquidity support for the Commercial Paper Series 2018A-2 is provided by JPMorgan Chase Bank (JPMCB) pursuant to a 3-year revolving credit agreement dated July 1, 2018. JPMCB has provided a commitment of \$250,000,000 for the payment of the principal of and interest on the Series 2018A-2 notes. MSD and JPMCB entered into a Note Purchase Agreement dated July 1, 2018 providing for the purchase of direct purchase notes by JPMCB up to the aggregate principal amount of \$250,000,000. The JPMCB Revolving Credit Agreement and the JPMCB Note Purchase Agreement limit the aggregate principal amount of

⁷ See Note 8 – Bond Anticipation Notes.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

commercial paper notes Series 2018A-2 and the JPMCB direct purchase notes to \$250,000,000. J.P. Morgan Securities is acting as the dealer for Series 2018A-2 notes.

Upon the occurrence of any special event of default under the Revolving Credit Agreements and Note Purchase Agreements, the commitment shall immediately terminate with respect to all commercial paper notes and the banks shall have no obligation to make any loan or to fund any outstanding commercial paper note. Upon the occurrence of an event of default that is not a special event of default, the banks may, by notice to MSD, terminate the commitment, if any (except as provided below), deliver a notice of no-issuance to MSD and to the Issuing and Paying Agent directing the Issuing and Paying Agent to cease issuing all commercial paper notes. The available commitment shall immediately be reduced to the then outstanding principal amount of commercial paper notes plus the amount of interest to accrue on such notes and the available commitment shall be further reduced in a similar manner when commercial paper notes mature provided the commitment does not terminate, and the right of the bank to accelerate the maturity of the note and the loans shall not affect the obligation of the bank to make loans in aggregate principal amount equal to the commitment to the extent necessary for MSD to make required payments of principal on the commercial paper notes issued and sold prior to the date upon which the notice of no-issuance is received by the Issuing and Paying Agent; provided further that if any loans are made that would not have been made but for the application of the preceding provision, such loans shall be immediately due and payable on the date such loans are made.

Moody's Investors Service and Standard and Poor's Ratings Services assigned ratings of P-1 and A-1+, respectively, to the commercial paper notes on June 29, 2018.

Commercial paper notes of \$255,000,000 were outstanding as of June 30, 2020 in accordance with the respective Revolving Credit Agreements. Interest rates on the notes outstanding range from 0.18% to 0.65% and maturities range from 28 to 127 days. The outstanding notes had an average rate of 0.30% and an average maturity of 59 days. A direct purchase note of \$100,000 was outstanding as of June 30, 2020 in accordance with the terms of the JPMCB Note Purchase Agreement. This note has a maturity of June 24, 2021 and carries a variable interest rate based on 90 day LIBOR.

The following tables summarize the outstanding and available balance of the commercial paper program for the years ended June 30, 2020 and 2019:

June 30, 2020 (dollars in thousands)			
Issue Description	Authorized Amount	Amount Outstanding	Unissued Portion
Series 2018A-1	\$ 250,000	\$ 155,000	\$ 95,000
Series 2018A-2	250,000	100,000	150,000
Total	\$ 500,000	\$ 255,000	\$ 245,000

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

June 30, 2019 (dollars in thousands)			
Issue Description	Authorized Amount	Amount Outstanding	Unissued Portion
Series 2018A-1	\$ 250,000	\$ 60,000	\$ 190,000
Series 2018A-2	250,000	60,000	190,000
Total	<u>\$ 500,000</u>	<u>\$ 120,000</u>	<u>\$ 380,000</u>

MSD issued its Series 2020A revenue bonds on July 30, 2020 to refund \$225,000,000 in commercial paper notes. MSD has classified all outstanding commercial paper notes as long-term debt in accordance with GASB 62 as it intends to redeem a portion of the notes with with long-term bond proceeds and reissue the remaining maturing commercial paper notes in accordance with the refinancing terms of the Revolving Credit Agreements.

The following tables summarize transactions of the commercial paper program for the years ended June 30, 2020 and 2019:

June 30, 2020 (dollars in thousands)					
Issue Description	Outstanding Notes at Beginning of Year	Notes Issued	Notes Retired	Outstanding Notes at End of Year	Payable Within One Year
Series 2018A-1	\$ 60,000	\$ 405,000	\$ 310,000	\$ 155,000	\$ -
Series 2018A-2	60,000	365,000	325,000	100,000	-
Total	<u>\$ 120,000</u>	<u>\$ 770,000</u>	<u>\$ 635,000</u>	<u>\$ 255,000</u>	<u>\$ -</u>

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

June 30, 2019 (dollars in thousands)					
Issue Description	Outstanding Notes at Beginning of Year	Notes Issued	Notes Retired	Outstanding Notes at End of Year	Payable Within One Year
Series 2018A-1	\$ -	\$ 180,000	\$ 120,000	\$ 60,000	\$ -
Series 2018A-2	-	140,000	80,000	60,000	-
Total	<u>\$ -</u>	<u>\$ 320,000</u>	<u>\$ 200,000</u>	<u>\$ 120,000</u>	<u>\$ -</u>

State Revolving Fund Loans: MSD utilizes funding provided through the Kentucky Infrastructure Authority's (KIA) State Revolving Fund (SRF). The SRF financing program provides low interest loans for infrastructure projects that are considered a priority based on the water pollution control criteria outlined in the Clean Water Act. MSD's SRF loans are considered direct placement debt and carry interest rates ranging between 1.75% and 3.8%. Under the assistance agreements entered into with the KIA, upon the occurrence and continuance of any event of default, the Authority may declare all payments due at a default rate of 8%. Additionally, when an event of default occurs and is continuing, the Authority can declare all payments due, exercise all rights and remedies, take legal action to enforce its rights under the agreement, and submit a formal referral to the appropriate federal agency.

Fiscal Year 2020 Significant SRF Transactions: MSD entered into an assistance agreement with the KIA on December 20, 2019 for a SRF loan in an amount not to exceed \$24,200,000 to finance the rehabilitation of aging infrastructure at its Hite Creek Water Quality Treatment Center. The capacity of the treatment center will be expanded to eliminate sanitary sewer overflows upstream of the treatment center and allow for future growth. Interest will be payable semiannually at a fixed rate of 2% per annum commencing after funds are first drawn on the loan. The loan will be repaid over a period not to exceed twenty years from the date the project is placed in operation. MSD has not drawn on this loan as of June 30, 2020.

MSD entered into an assistance agreement with the KIA on December 20, 2019 for a SRF loan in an amount not to exceed \$3,870,000 to finance the rehabilitation 47,000 linear feet of sewer lines. Interest will be payable semiannually at a fixed rate of 2% per annum commencing after funds are first drawn on the loan. The loan will be repaid over a period not to exceed twenty years from the date the project is placed in operation. MSD has not drawn on this loan as of June 30, 2020.

MSD entered into an assistance agreement with the KIA on June 30, 2020, as part of its merger with OCEA, to assume eight existing SRF loans extended to the OCEA with total outstanding principal in the amount of \$13,705,711. These loans financed various sewer system infrastructure projects in the OCEA service area. Six of these loans are for completed projects and principal repayment has begun. Two loans are financing projects that are still under construction. Principal repayment will begin once the projects are placed in operation. Interest will be paid semiannually at fixed rates ranging from 1.75% to 3% per annum. The loans will be repaid over a period not to exceed twenty years.

Fiscal Year 2019 Significant SRF Transactions: On May 31, 2019, MSD acquired the Crestwood Wastewater Collection system pursuant to the terms and conditions of an Interlocal Agreement dated April 9, 2019. The purchase price was paid, in part, by MSD's assumption of a SRF loan between Crestwood and the Kentucky Infrastructure Authority in the amount \$1,103,340. The loan carries an interest rate of 3.8% and will be repaid in 2021.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

At June 30, 2020 and 2019 MSD had the following SRF direct placement debt outstanding:

June 30, 2020 (dollars in thousands)					
Loan Number	Loan Amount	Drawn Amount	Interest Rate	Final Payment In	Outstanding at end of Year
A98-04	6,498	6,498	3.80%	2021	454
A09-41	2,395	2,395	3.00%	2033	1,659
A10-04	2,843	2,843	2.00%	2033	1,974
A10-05	1,000	1,000	3.00%	2033	715
A10-06	121	121	2.00%	2033	81
A10-07	2,538	2,538	2.00%	2034	1,821
A11-15	671	671	2.00%	2033	465
A12-29	6,500	6,500	1.75%	2037	5,520
A17-028	6,300	2,013	1.75%	*	2,013
A18-010	2,000	1,116	1.75%	**	1,116
Total loans payable					15,818
Less: current maturities					<u>(1,193)</u>
Total long-term loans payable, long term portion					<u>\$ 14,625</u>
* Loan is partially drawn. Final payment will be 20 years following project completion currently scheduled for FY23.					
**Loan is partially drawn. Final payment will be 20 years following project completion currently scheduled for FY21.					

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

June 30, 2019 (dollars in thousands)					
Loan Number	Loan Amount	Drawn Amount	Interest Rate	Final Payment In	Outstanding at end of Year
A98-04	6,498	6,498	3.80%	2021	891
A09-41	2,395	2,395	3.00%	2032	1,767
Total loans payable					2,658
Less: current maturities					<u>(545)</u>
Total long-term loans payable, long term portion					<u>\$ 2,113</u>

KACO Financing Lease: Oldham County Fiscal Court, on behalf of OCEA, previously entered into a lease financing obligation with the Kentucky Association of Counties Leasing Trust in the amount of \$4,000,000 at an interest rate of 4.94% to finance various treatment facilities. MSD entered into a sublease agreement with the County of Oldham Kentucky, as part of its merger with OCEA, on June 30, 2020 to make the remaining lease rental payments when due. In the event of default, the sublessor may by written notice, take possession of the project, sell or lease the project, or exercise any remedy available to it under applicable law. At June 30, 2020, the remaining principal balance is \$2,180,000 and the final maturity is in 2031.

Line of Credit: MSD secured an uncommitted \$25,000,000 line of credit in October 2015. As of June 30, 2020 and 2019 MSD does not owe anything on its line of credit. There was no activity on the line of credit in fiscal Year 2020 or 2019.

NOTE 8 – BOND ANTICIPATION NOTES

MSD issues bond anticipation notes (BAN) under its Subordinated Bond Resolution adopted April 26, 2010. Bonds issued under the Subordinated Resolution are superior in priority to all revenue debt of the district except bonds issued under the General Bond Resolution. Pursuant to the Subordinated Resolution, upon the occurrence and continuance of any event of default, the paying agent may or the holders of more than fifty percent in principal amount of outstanding notes may, by notice delivered to MSD, declare the principal and interest of all notes immediately due and payable. MSD has remedies under the resolution to cure the event of default and annul the declaration of acceleration.

MSD first publicly offered and issued a \$226,340,000 BAN to partially refund its then outstanding sewer and drainage system revenue bonds, Series 1999A and a portion of its Series 1997A and 1998A revenue bonds on August 19, 2009. The BAN has been reissued annually. Under GASB 62, the BAN is considered a non-current liability because MSD intends to replace the Series 2019 BAN with a new BAN in October 2020 which will extend the debt to October 2021. Total BAN outstanding at June 30, 2020 and June 30, 2019 was \$226,340,000 and \$226,340,000, respectively. MSD’s plan is to continue to reissue the BAN annually and amortize the BAN principal over the same period as Series 1999A bonds.

Fiscal Year 2020 Significant Debt Transactions: On September 19, 2019, MSD issued \$226,340,000 of sewer and drainage system subordinated BAN, Series 2019, with a coupon rate of 3.0% and an effective interest rate of 1.37%. The proceeds of the notes were used to refund the 2018 notes that matured on November 1, 2019. The 2019 notes closed on September 26, 2019 and mature on October 23, 2020.

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Fiscal Year 2019 Significant Debt Transactions: On November 9, 2018 MSD issued \$226,340,000 of sewer and drainage system subordinated BAN, Series 2018, with a coupon rate of 4.0% and an effective interest rate of 2.08%. The proceeds of the notes were used to refinance the 2017 notes. The 2018 notes mature on November 1, 2019.

A summary of changes in the BAN in fiscal years 2020 and 2019 follows:

June 30, 2020 (dollars in thousands)					
Issue Description	Outstanding at Beginning of Year	Issued	Retired	Outstanding at End of Year	Payable Within One Year
2018 Bond anticipation note	\$ 226,340	\$ -	\$ 226,340	\$ -	\$ -
2019 Bond anticipation note	-	226,340	-	226,340	226,340
Total	\$ 226,340	\$ 226,340	\$ 226,340	\$ 226,340	\$ 226,340

June 30, 2019 (dollars in thousands)					
Issue Description	Outstanding at Beginning of Year	Issued	Retired	Outstanding at End of Year	Payable Within One Year
2017 Bond anticipation note	\$ 226,340	\$ -	\$ 226,340	\$ -	\$ -
2018 Bond anticipation note	-	226,340	-	226,340	226,340
Total	\$ 226,340	\$ 226,340	\$ 226,340	\$ 226,340	\$ 226,340

NOTE 9 – DERIVATIVE INSTRUMENTS

At June 30, 2020, MSD had the following two interest rate derivative instruments outstanding:

(dollars in thousands)									
Derivative Instrument	Type	Objective	Counterparty	Original Notional	Notional Amount 30-Jun-20	Effective Date	Termination Date	Terms	
A	Pay-fixed interest rate swap	Hedge interest rate risk on Series 2020 BAN	Wells Fargo, N.A.	\$ 180,716	\$ 180,716	6/15/2013	5/15/2033	Pay 4.4125% Receive 67% USD-LIBOR -BBA	
B	Pay-fixed interest rate swap	Hedge interest rate risk on Series 2020 BAN	Bank of America, N.A.	56,433	45,284	11/16/2009	5/15/2033	Pay 4.4125% Receive 67% USD-LIBOR -BBA	
				<u>237,149</u>	<u>226,000</u>				

MSD originally entered into interest rate swaps as a hedging derivative instrument in anticipation of refinancing the 1999 Series bonds at their call date. Two swaps remain in the portfolio to lower interest rate

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risk associated with the BAN⁸. The hedgeable item is interest rate risk associated with the expected future issuance of fixed-rate BAN. The BAN are expected to be reissued every year. The swaps are structured so that the notional amounts of the swaps decrease over time corresponding with the planned amortization of the BAN principal.

Interest rate swaps are classified as hedging derivative instruments if they meet the criteria outlined in GASB 53 or as investment derivative instruments if they do not. MSD has designated its interest rate swaps as hedging derivatives under GASB 53 as of July 1, 2019. At June 30, 2020, MSD's interest rate derivatives are effective cash flow hedges and were classified as hedging derivatives in its financial statement. The fair value of the at-market portion, the hedging derivative, is reported as other assets and deferred inflows if positive and other liabilities and deferred outflows if negative on the Statement of Net Position. The difference between the fair value of the at-market hedging derivatives and the fair value of the interest rate swaps is reported as investment derivatives on the Statement of Net Position. All changes in fair value of the derivatives are recorded as a separate component of non-operating revenue (expense).

Both swaps have termination dates of May 15, 2033. Payments are due on the fifteenth of each month. MSD receipt terms are 67% of the 30-day London Inter-Bank Offered Rate (LIBOR). A comparative summary of the change in fair value of the swaps for the years ended June 30, 2020 and 2019 follows:

<i>(dollars in thousands)</i>	June 30,	
	<u>2020</u>	<u>2019</u>
Fair value - beginning of year	\$ (73,040)	\$ (59,443)
Change in fair value	<u>(20,415)</u>	<u>(13,597)</u>
Fair value - end of year	<u>\$ (93,455)</u>	<u>\$ (73,040)</u>

Fair values at June 30, 2020 for the non-credit adjusted, at-market portion of the derivatives follows:

<i>(dollars in thousands)</i>	June 30, 2020	
	<u>Clean</u>	<u>Accrued</u>
Derivatives (at-market)		
1999-1 - \$180.7M 67% LIBOR fixed payer	\$ (16,655)	\$ (86)
1999-2 - \$56.4M 67% LIBOR fixed payer	<u>(4,167)</u>	<u>(22)</u>
Total	<u>\$ (20,822)</u>	<u>\$ (108)</u>

⁸ See Note 8 – Bond Anticipation Notes

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Classification at June 30, 2020 of the at-market portion and investment portion of the derivatives follows:

<i>(dollars in thousands)</i>					
<u>Governmental Activities</u>	Changes in Fair Value		Fair Value as of June 30, 2020		
	Classification	Amount	Classification	Amount	Notional
Cash flow hedges:					
Pay-fixed interest rate swaps	Deferred outflows	\$ (20,822)	Other liabilities	\$ (93,050)	\$ 226,000
			Accrued interest	(405)	
				<u>\$ (93,455)</u>	
Investment derivatives:					
Pay-fixed interest rate swaps	Non-operating expenses	(72,228)			
		<u>\$ (93,050)</u>			

Valuation Techniques: The fair values of the interest rate swaps were estimated using the zero-coupon method. This method calculates the future net settlement payments required by the swap, assuming that the current forward rates implied by the yield curve correctly anticipate future spot interest rates. These payments are then discounted using the spot rates implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement on the swaps.

Non-performance risk was measured using credit spreads implied by the credit rating for debt issues by entities with similar credit characteristics. This is the best method available under current market conditions since MSD has no credit default swaps that actively trade in the marketplace. For a derivative asset, the adjustment for non-performance risk of counterparties is determined by analyzing counterparty-specific credit default swaps, if available. If not available, credit default swaps in the market for entities of similar type and rating are used with information found in various public and private information services. This analysis is used to construct a credit curve that is applied to the discount curve on the net settlement payments of the derivative. A level two (2) category hierarchy was employed for fair valuation measurement. The positive and negative fair values of the swap agreements were provided by a third-party financial advisor.

Risks: *Credit Risk* - MSD has implemented steps to safeguard it against the risks associated with the aforementioned swap transactions. If the swap counterparties do not maintain A1/A+ ratings from Moody's Investors Service and Standard and Poor's Rating Service, the swaps contain provisions that require them to be marked to market weekly with monthly statements sent to MSD and the value will be collateralized with U.S. Treasury and Agency securities with the securities held by a tri-party custodian approved by MSD. All costs of collateralization will be borne by the downgraded party who must post the collateral. In addition, the swaps were awarded to multiple firms to further mitigate the credit risk associated with the transactions.

The credit ratings as of June 30th, 2020 for the swap counterparties are as follows:

	Credit Ratings	
	Moody's	Standard & Poor's
Bank of America, N.A.	P-1	A-1
Wells Fargo Bank, N.A.	P-1	A-1+

The agreements also provide for automatic termination if MSD's unenhanced bond rating is downgraded below BBB/Baa. MSD's obligations under all of its outstanding swap agreements are unsecured and subordinate to all bonds issued and outstanding.

The credit adjusted at-market portion, the accrued interest portion and off-market fair value of derivative instruments A and B are in liability positions of \$20,821,981, \$404,651 and \$72,258,400, respectively, at

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June 30, 2020. The aggregate fair value is negative \$93,050,380 (gross of implied note outstanding balance as of June 30, 2020). This represents the maximum loss that would be recognized at the reporting date if one or both swap counterparties failed to perform as contracted. There is no posted collateral to net against the aforementioned fair value.

The contracts for derivative instruments A and B are held by Wells Fargo, N.A. and Bank of America, N.A., respectively, and comprise 100% of the net exposure to credit risk.

Termination Risk - Termination risk is generally referred to as the risk that a derivative instrument could be terminated causing MSD to owe a termination payment as a result of any of several events, which may include: a ratings downgrade of the swap counterparty; covenant violations by either party; bankruptcy of either party; a swap payment default of either party; and other default events as defined by the derivative instrument. Any such termination may require MSD to make significant termination payments in the future. The approximate amount of termination payment that MSD would have to pay if each of the derivative instruments were terminated on June 30, 2020 is approximately \$93,454,625. It should be noted that this is the non-credit adjusted (non GASB 72) mark-to-market valuation as of last business day of the fiscal year. The provisions of the agreements related to each derivative instrument allow for the offset of certain reimbursable costs related to the termination process.

To further mitigate the effect of termination risk relative to derivative instruments A and B, the agreements contain certain safeguards which include (i) collateral posting requirements as discussed in the preceding Credit Risk section and (ii) except for certain types of termination events there is no automatic early termination.

Derivative instruments A and B may be terminated, if the underlying rating of MSD's obligations that are subject to annual appropriation falls below "BBB" from Standard and Poor's Ratings Service or below "Baa2" from Moody's Investors Service.

While there is no optional termination language in the confirmations of derivative instruments A and B, Wells Fargo, N.A. and Bank of America, N.A., respectively, may accommodate MSD to terminate the derivative instruments early, subject to credit approval.

If, at the time of termination, a swap has a negative fair value, MSD could be liable to the counterparty for a payment equal to the derivative instrument's fair value. If any of the derivative instruments are terminated, either the associated variable rate bonds would no longer be hedged with a synthetic fixed interest rate or the nature of the basis risk associated with the derivative instrument may change. As of June 30, 2020, MSD is not aware of any pending event that would lead to a termination event with respect to any of its existing derivative instruments, which are in force and effect as of such date.

Basis Risk – Each of the derivative instruments is associated with certain debt obligations. The debt associated with each of the derivative instruments pays interest at variable interest rates. MSD receives variable payments under the derivative instrument. To the extent these variable payments are not equal to the variable interest payments on the associated debt there may be either a net loss or net benefit to MSD. The net swap payments made by MSD in fiscal 2020 and fiscal 2019 were \$6,468,589 and \$7,724,335, respectively.

Rollover Risk – Rollover risk occurs when the term of the derivative instrument is not coincident with the repayment term of the underlying debt obligation. Derivative instruments A and B have terms equal to the critical terms of the hedged interest rate exposure.

Interest Rate Risk – MSD is exposed to interest rate risk on its interest rate derivative instruments. On its pay-fixed, receive-variable interest rate swaps, there may be either a net loss or net benefit to MSD depending upon decrease or increases in the USD-LIBOR-BBA yield curve.

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Swap Terminations: MSD entered into swaps and other derivative contracts to lock in long term rates in advance of issuing long term debt to create and manage variable rate exposure in its debt portfolio and to take advantage of market opportunities to hedge embedded interest rate risk and tax regulation risk that exists on its Statement of Net Position.

Upon a termination of a swap, any termination receipt or payment is amortized into income or expense until the original expiration date of that swap. Any unamortized portion of the receipt or payment is recorded as a deferred debit or credit in long-term liabilities. MSD has swap agreement terminations with deferred inflow of resources balances accreting to non-operating revenue as follows:

- On January 24, 2001, MSD terminated a nineteen-year interest rate swap agreement for \$100,000,000 of its fixed-rate 1999 Series sewer and drainage revenue bonds. The termination of this swap agreement resulted in the receipt of a payment in the amount of \$7,935,000. This payment will be amortized annually into income until 2019, the original termination date on the agreement.
- In April 2006, MSD entered into a swap agreement with Deutsche Bank AG for an initial notional amount of \$171,405,000 which provided that beginning May 15, 2006, a net payment will be made based on MSD paying 78.78% of the 3-month LIBOR index on the notional amount and receiving 73.45% of the 5-year LIBOR Index on the notional amount. On January 23, 2008, MSD terminated this swap agreement and received a termination payment of \$4,170,000 that will be amortized until 2023, the original termination date of the agreement.
- On January 25, 2008, MSD terminated a twenty-seven year floating to floating (basis) interest rate swap agreement with a notional amount of \$282,165,000. MSD entered into this agreement with Morgan Stanley in April 2006 and paid 67% of the 1-month LIBOR index and received 62.2% of the 5-year LIBOR index. The termination of this swap agreement resulted in the receipt of a payment in the amount of \$5,756,000. This payment will be amortized annually into income until 2033, the original termination date of the agreement.

NOTE 10 - RISK MANAGEMENT

MSD is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; natural disasters; and injuries to MSD's employees. These risks are provided through the insurance programs described below.

Self-Insurance – Group Liability: MSD participates in the Louisville Area Governmental Self-Insurance Trust (LAGIT). LAGIT, which is certified by the Kentucky Department of Insurance to practice as a group liability self-insurance trust, was created on January 1, 1987. LAGIT members currently include Louisville Metro Government, six smaller cities, and six government agencies. LAGIT was formed to provide better risk protection and lower cost liability insurance by sharing the risk with all of its members. MSD's payments to LAGIT are reflected on the financial statements as an expense. LAGIT provides, after a \$300,000 deductible, various liability coverages up to \$5,000,000 per occurrence. Excess insurance may provide an additional \$2,000,000 of coverage, above the LAGIT \$5,000,000, to MSD. The amount of coverage available to MSD could be limited by the total assets of LAGIT and/or claims of other Members under the excess insurance policy. For fiscal 2020, LAGIT did not make any claim payments on behalf of MSD.

MSD maintained additional excess liability coverage for fiscal 2020. Scottsdale Insurance Company (A+) provided \$5,000,000 of excess liability coverage beyond the \$7,000,000 provided through LAGIT. Gemini Insurance Company (A+) provided another \$15,000,000 of excess liability coverage beyond \$12,000,000. In total, MSD maintained liability coverage of \$27,000,000.

For fiscal 2019, LAGIT provided, after a \$300,000 deductible, various liability coverages up to \$5,000,000 per occurrence. Excess insurance provided an additional \$2,000,000 of coverage, above the LAGIT \$5,000,000 to MSD. The amount of coverage available to MSD was limited by the total assets of LAGIT

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and/or claims of other Members under the excess insurance policy. For fiscal 2019, LAGIT did not make any claim payments on behalf of MSD.

MSD maintained additional excess liability coverage for fiscal 2019. Scottsdale Insurance Company (A+) provided \$5,000,000 of excess liability coverage beyond the \$7,000,000 provided through LAGIT. Gemini Insurance Company (A+) provided another \$15,000,000 of excess liability coverage beyond \$12,000,000. In total, MSD maintained liability coverage of \$27,000,000.

Workers Compensation Insurance: MSD has chosen to self-insure the basic worker's compensation insurance. Claims administration is handled by a third-party administrator and includes claims monitoring check issuance, settlement negotiations and loss control services. Liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. A separate insurance policy provides maximum coverage of \$1,000,000 per occurrence and aggregate. A roll forward of worker's compensation claims follows:

<i>(dollars in thousands)</i>	June 30,		
	2020	2019	2018
Liability - beginning of year	\$ 2,326	\$ 1,557	\$ 1,701
Claims and changes in estimates	775	1,945	755
Payments	(821)	(1,176)	(899)
Liability - end of year	<u>\$ 2,280</u>	<u>\$ 2,326</u>	<u>\$ 1,557</u>

Self-Insurance – Property: MSD joined the Louisville Area Governmental General Insurance Trust (LAGGIT) in September 2002. LAGGIT was created to provide lower cost to participants and broader coverage for property risks. MSD is responsible for covered property damage up to \$100,000 except for flood and vehicle collision coverage, which have separate deductibles. LAGGIT provides coverage for the next \$1,000,000 per occurrence, except for Flood Zone A locations. An excess insurance policy with a third-party carrier covers claims in excess of \$1,100,000.

MSD's facilities were affected by Ohio River flooding in February of 2018 and MSD made a claim on the LAGGIT policy. Payments on this claim totaled \$3,757,562. An amount of \$637,408 was received in fiscal year 2020 and \$3,120,154 was received in fiscal year 2019.

NOTE 11 - DEFERRED COMPENSATION

MSD offers its employees deferred compensation plans created in accordance with Internal Revenue Service Code Sections 401(k) and 457. These plans, available to all MSD employees, permit them to defer the payment of a portion of their salary until future years. Participation in these plans is voluntary and MSD makes no contributions to these plans on behalf of the employee. The deferred compensation is not available to employees until termination, retirement, death, or unforeseen emergency. All amounts of compensation deferred, including the investments and earnings thereon, vest with the employee and are not subject to the claims of MSD's general creditors.

NOTE 12 - COMMITMENTS AND CONTINGENCIES

Sale of Sewer Assessments: MSD has entered into agreements to sell sanitary sewer assessments to a local bank. These assessments reflect the portion of the cost that residents pay to have sewer lines installed in their neighborhood. Residents are given the opportunity to pay the assessment in full or to finance it over a twenty-year period at 7% interest per annum. The original agreement called for the bank to accept up to \$25,000,000 of outstanding assessments and for MSD to receive 104% of the face value of the assessments.

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The subsequent agreement allows an additional \$5,000,000 of assessments to be sold to the bank at face value. These agreements give the bank the option to place the assessments back with MSD if the property owner's payments are 90 days in arrears or the property owner does not respond to the bank's demand for payment within a 90-day period after the issuance of the assessment. Sales to the bank are net of any subsequent repurchases of warrants by MSD. The unpaid principal balance of loans held by the bank at June 30, 2020 and 2019 was \$511,843 and \$717,057, respectively.

EPA Consent Decree: On August 12, 2005, MSD agreed to enter into a consent decree with the Commonwealth of Kentucky's Environmental and Public Protection Cabinet (KEPPC) and the U.S. Environmental Protection Agency (EPA). The consent decree called for MSD to submit a final Long-Term Control Plan (LTCP) to the KEPPC and EPA for review and joint approval. The final Sanitary Sewer Discharge Plan (SSDP) and the LTCP were certified on December 19, 2008 under the title of the Integrated Overflow Abatement Plan (IOAP). The SSDP included schedules and deadlines for capital projects to be completed by the end of 2024. The LTCP included schedules, and deadlines for combined sewer overflow projects to be completed by December 31, 2020. MSD agreed to pay a civil penalty to the Commonwealth of Kentucky in the amount of \$1,000,000 to resolve the violations alleged in the KEPPC's and EPA's complaints up through the date of entry of the consent decree. The agreement called for MSD to perform supplemental environmental projects at an amount of not less than \$2,250,000. MSD neither admitted nor denied the alleged violations but acknowledged that discharges occurred and accepted the obligations imposed in the consent decree.

On April 10, 2009, MSD agreed to enter into an amended consent decree with the KEPPC and the EPA. The amended consent decree resolved all pending claims of violations of the Federal Water Pollution Control Act and the Water Quality Act of 1987. The amended consent decree superseded and replaced the original consent decree entered on August 12, 2005. The amended consent decree contains stipulated penalties for MSD's failure to comply with the provisions contained therein. The IOAP was amended in 2012 and 2014 to improve compliance and adjust capital project schedules. To date, MSD has complied with all submittal and report requirements contained in the amended consent decree. The cost of the capital improvements required to be completed under the amended consent decree is currently estimated to be \$1,149,000,000 of which MSD has spent \$974,335,843 as of June 30, 2020.

Claims and Litigation: MSD is a defendant in various active lawsuits. Although the outcome of these lawsuits is not presently determinable, it is the opinion of the MSD's management that resolution of these matters will not have a material adverse effect on the financial statements of MSD. All material claims and litigation settlements that are both probable and reasonably measureable are recorded in accounts payable.

Construction Commitments: The value of construction contracts signed where work has not yet been performed amounted to \$144,323,365 at June 30, 2020 and was \$168,225,446 at June 30, 2019.

NOTE 13 - SUBSEQUENT EVENTS

COVID-19: In December 2019, a novel strain of coronavirus surfaced in Wuhan, China, and has spread around the world, with resulting business and social disruption. The coronavirus was declared a Public Health Emergency of International Concern by the World Health Organization on January 30, 2020. The operations and business results of MSD could be materially adversely affected. The extent to which the coronavirus may impact business activity or investment results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of the coronavirus and the actions required to contain the coronavirus or treat its impact, among others.

Series 2020A: On July 30, 2020, MSD issued \$225,000,000 of revenue bonds, Series 2020A. The proceeds of the Series 2020A bonds will be used (i) to pay at maturity, redeem, and refund program notes issued and outstanding as senior subordinated debt under the resolution and MSD's program note resolution, the proceeds of which were used for the purpose of financing the cost of capital improvements and additions to MSD's sewer and drainage stem and refinancing other program notes previously used

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under the program note resolution and (ii) to pay the costs of issuance of the Series 2020A bonds. The Series 2020A bonds have a final maturity of May 15, 2046.

Rate Increase: On August 1, 2020, MSD's rates for wastewater and drainage service charges increased by 5.0%.

Pump Station SRF Loan: On September 11, 2020, MSD submitted an application for a SRF loan from the KIA in an amount not to exceed \$8,270,000 to finance the Rosa Terrace, Sanders, Wathen and Sonne Pump Station project. MSD anticipates it will execute an assistance agreement for this project with the KIA in fiscal year 2021. Interest will be payable semiannually at a fixed rate of 2.5% per annum commencing after funds are first drawn on the loan. The loan will be repaid over a period not to exceed 20 years from the date the project is placed in operation.

Series 2020C: On September 22, 2020 MSD sold \$112,065,000 of its taxable sewer and drainage system revenue refunding bonds Series 2020C. The proceeds of the Series 2020C bonds will be used: (i) together with other available funds of the District, to advance refund and redeem on May 15, 2023, MSD's sewer and drainage system revenue refunding bonds, Series 2013C maturing on and after May 15, 2024 and (ii) to pay the costs of issuance of the Series 2020C bonds. The proceeds of the prior bonds were used to pay the costs of capital improvements and additions to MSD's sewer and drainage system. The sale of the Series 2020C bonds closed on October 15, 2020. The refunding reduces debt service payments over the next twenty four years by \$26,590,053 which is a net present value savings of \$18,675,198.

2020 BAN: On September 22, 2020, MSD sold \$226,340,000 of sewer and drainage system subordinated BAN, Series 2020 with a coupon rate of 5.00% and an effective interest rate of 0.228%. The proceeds of the notes were used to (i) refund the 2019 notes at maturity on October 23, 2020 and (ii) to pay the costs of issuance of the Series 2020 notes. The 2020 notes closed on October 14, 2020 and mature on October 20, 2021.

Commercial Paper Program: Commercial paper notes of \$85,000,000 are outstanding as of October 30, 2020 in accordance with the respective Revolving Credit Agreements. Interest rates on the notes outstanding range from 0.18% to 0.25% and maturities range from 5 to 97 days. MSD intends to reissue maturing commercial paper in accordance with the refinancing terms of the Revolving Credit Agreements and periodically refund such maturities with proceeds from the issuance of long-term revenue bonds.

NOTE 14 - DEFINED BENEFIT PENSION AND OTHER POSTEMPLOYMENT BENEFITS PLAN – COST SHARING – CERS

General Information about the Pension and OPEB Plan: All full-time and eligible part-time employees of MSD participate in County Employee Retirement System (CERS), a cost-sharing, multiple-employer defined benefit pension plan administered by the Kentucky Retirement System (KRS, the System), an agency of the Commonwealth. Under the provisions of Kentucky Revised Statute Section 78.520, the Board of Trustees (the Board) of KRS administers CERS, Kentucky Employee Retirement System, and State Police Retirement System. Although the assets of the systems are invested as a whole, each system's assets are used only for the payment of benefits to members of that plan and a pro rata share of administrative costs.

The plan provides for retirement, disability and death benefits to plan members. Retirement benefits may also be extended to beneficiaries of plan members under certain circumstances. Under the provisions of Kentucky Revised Statute Section 61.701, the Board of KRS also administers the Kentucky Retirement System's Insurance Fund. The statutes provide for a single insurance fund to provide group hospital and medical benefits to retirees drawing a benefit from the three pension funds administered by KRS. The assets of the insurance fund are invested as a whole. KRS and the Commonwealth have statutory authority to determine Plan benefits and employer contributions.

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KRS issues a publicly available financial report that includes financial statements and required supplementary information for CERS. The report may be obtained by writing to Kentucky Retirement System, Perimeter Park West, 1260 Louisville Road, Frankfort, Kentucky 40601, or it may be found at the KRS website at www.kyret.ky.gov.

Basis of Accounting: For purposes of measuring the net pension and other post-employment benefits plan (OPEB) liabilities, deferred outflow of resources and deferred inflow of resources related to pensions and OPEB, pension and OPEB expense, information about the fiduciary net position of CERS and additions to/deductions from CERS's fiduciary net position have been determined on the same basis as they are reported by CERS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Pension Benefits Provided:

The information below summarizes the major retirement benefit provisions of CERS-Nonhazardous. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Members whose participation began before 8/1/2004:

Age and Service Requirement: Age 65 with at least one month of Nonhazardous duty service credit, or at any age with 27 or more years of service credit.

Benefit: If a member has at least 48 months of service, the monthly benefit is 2.20% times final average compensation times years of service depending on participation and retirement dates. Final compensation is calculated by taking the average of the highest five (5) fiscal years of salary. If the number of months of service credit during the five (5) year period is less than forty-eight (48), one (1) or more additional fiscal years shall be used. If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Members whose participation began on or after 8/1/2004, but before 9/1/2008:

Age and Service Requirement: Age 65 with at least one month of Nonhazardous duty service credit, or at any age with 27 or more years of service credit.

Benefit: If a member has at least 48 months of service, the monthly benefit is 2.00% multiplied by final average compensation, multiplied by years of service. Final compensation is calculated by taking the average of the highest five (5) fiscal years of salary. If the number of months of service credit during the five (5) year period is less than forty-eight (48), one (1) or more additional fiscal years shall be used. If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest.

Members whose participation began on or after 9/1/2008, but before 1/1/2014:

Age and Service Requirement: Age 65 with 60 months of Nonhazardous duty service credit, or age 57 if age plus service equals at least 87.

Benefit: The monthly benefit is the following benefit factor based on service credit at retirement plus 2.00% for each year of service greater than 30 years, multiplied by final average compensation, multiplied by years of service.

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<u>Service Credit</u>	<u>Benefit Factor</u>
10 years or less	1.10%
10+ - 20 years	1.30%
20+ - 26 years	1.50%
26+ - 30 years	1.75%

Final compensation is calculated by taking the average of the last (not highest) five (5) complete fiscal years of salary. Each fiscal year used to determine final compensation must contain twelve (12) months of service credit.

Members whose participation began on or after 1/1/2014:

Age and Service Requirement: Age 65 with 60 months of Nonhazardous duty service credit, or age 57 if age plus service equals at least 87.

Benefit: Each year that a member is an active contributing member to the System, the member contributes 5% of creditable compensation, and the member's employer contributes 4.00% of creditable compensation, which is a portion of the total employer contribution, into a hypothetical account. The hypothetical account will earn interest annually on both the member's and employer's contribution at a minimum rate of 4%. If the System's geometric average net investment return for the previous five years exceeds 4%, then the hypothetical account will be credited with an additional amount of interest equal to 75% of the amount of the return which exceeds 4%. All interest credits will be applied to the hypothetical account balance on June 30 based on the account balance as of June 30 of the previous year. Upon retirement the hypothetical account which includes member contributions, employer contributions and interest credits can be withdrawn from the System as a lump sum or annuitized into a single life annuity option.

OPEB Benefits Provided:

The information below summarizes the major retirement benefit provisions of CERS-Nonhazardous. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Insurance Tier 1: Participation began before 7/1/2003

Benefit Eligibility: Recipient of a retirement allowance

Benefit: The percentage of member premiums paid by the retirement system are dependent on the number of years of service. Benefits also include duty disability retirements, duty death in service, non-duty death in service and surviving spouse of a retiree.

Insurance Tier 2: Participation began on or after 7/1/2003, but before 9/1/2008

Benefit Eligibility: Recipient of a retirement allowance with at least 120 months of service at retirement

Benefit: The system provides a monthly contribution subsidy of \$10 for each year of earned service. The monthly contribution is increased by 1.5% each July 1. Benefits also include duty disability retirements, duty death in service and non-duty death in service.

Insurance Tier 3: Participation began on or after 9/1/2008

Benefit Eligibility: Recipient of a retirement allowance with at least 180 months of service at retirement

Benefit: The system provides a monthly contribution subsidy of \$10 for each year of earned service. The monthly contribution is increased by 1.5% each July 1. Benefits also include duty disability

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retirements, duty death in service and non-duty death in service.

Contributions: MSD was required to contribute at an actuarially determined rate determined by Statute. Per Kentucky Revised Statute Section 78.545(33) normal contribution and past service contribution rates shall be determined by the KRS Board on the basis of an annual valuation last preceding July 1 of a new biennium. The KRS Board may amend contribution rates as of the first day of July of the second year of a biennium, if it is determined on the basis of a subsequent actuarial valuation that amended contribution rates are necessary to satisfy requirements determined in accordance with actuarial bases adopted by the KRS Board.

For the fiscal years ended June 30, 2020 and 2019, participating employers contributed 24.06% (19.3% allocated to pension and 4.76% allocated to OPEB) and 21.48% (16.22% allocated to pension and 5.26% allocated to OPEB) as set by KRS, respectively, of each Nonhazardous employee's creditable compensation. These percentages are inclusive of both pension and insurance payments for employers. Administrative costs of KRS are financed through employer contributions and investments earnings. House bill 362 passed during the 2018 legislative session caps CERS employer contribution rate increases up to 12% per year over the prior fiscal year for the period of July 1, 2018 to June 30, 2028. Kentucky Senate Bill passed April 8, 2020 pauses the employer contribution rate for CERS for one year keeping the 2021 rates at the 2020 level.

MSD has met 100% of the contribution funding requirement for the fiscal years ended June 30, 2020 and 2019. Total current year contributions recognized by the Plan were \$11,384,941 (\$9,132,559 related to pension and \$2,252,382 related to OPEB) and \$9,976,816 (\$7,533,704 related to pension and \$2,443,112 related to OPEB) for the years ended June 30, 2020 and 2019, respectively. The OPEB contribution amounts do not include the implicit subsidies reported in the amount of \$651,513 and \$491,549, respectively.

Members whose participation began before 9/1/2008:

Nonhazardous member contributions equal 5% of all creditable compensation. Interest paid on the members' accounts is currently 2.5%; and per statute shall not be less than 2.0%. Members are entitled to a full refund of contributions with interest.

Members whose participation began on or after 9/1/2008, but before 1/1/2014:

Nonhazardous member contributions equal to 6% of all creditable compensation, with 5% being credited to the member's account and 1% deposited to the KRS 401(h) Account. Interest paid on the members' accounts will be set at 2.5%. Members are entitled to a full refund of contributions and interest in their individual account, however, the 1% contributed to the insurance fund is non-refundable.

Members whose participation began on or after 1/1/2014

Nonhazardous member contributions equal to 6% of all creditable compensation, with 5% being credited to the member's account and 1% deposited to the KRS 401(h) Account. Members are entitled to a full refund of contributions and interest on the member's portion of the hypothetical account, however, the 1% contributed to the insurance fund is non-refundable.

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Pension Plan Information for June 30, 2020 Financial Statements:

Total Pension Liability: The total pension liability (TPL) was determined by an actuarial valuation as of June 30, 2019 using the following actuarial assumptions, applied to all periods included in the measurement:

Price Inflation	2.30%
Salary increases	3.30 to 11.55% varies by service
Investment rate of return	6.25%, net of pension plan investment expense, including inflation

The mortality table used for active members was a Pub-2010 General Mortality table, for the Non-Hazardous System, and the Pub-2010 Public Safety Mortality table for the Hazardous System, projected with the ultimate rates from the MP-2014 mortality improvement scale using a base year of 2010. The mortality table used for healthy retired members is a system-specific mortality table based on mortality experience from 2013-2018, projected with the ultimate rates from MP-2014 mortality improvement scale using a base year of 2019. The mortality table used for the disabled members was PUB-2010 Disabled Mortality table, with a 4-year set-forward for both male and female rates, projected with the ultimate rates from the MP-2014 mortality improvement scale using a base year of 2010.

Discount rate assumptions:

- (a) Discount Rate: The discount rate used to measure the total pension liability was 6.25%.
- (b) Projected Cash Flows: The projection of cash flows used to determine the discount rate assumed the local employers and plan members would contribute the statutorily determined contribution rate of projected compensation over the remaining 25-year amortization period of the unfunded actuarial accrued liability. The actuarial determined contribution rate is adjusted to reflect the phase-in of anticipated gains on the actuarial value of assets over the first four years of the projection period.
- (c) Long-Term Rate of Return: The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared every five years for the System. The most recent analysis, performed for the period covering fiscal years 2008 through 2013 is outlined in a report dated April 30, 2014. However, the Board of KRS has the authority to review the assumptions on a more frequent basis and adopt new assumptions prior to the next scheduled experience study. The long-term expected rate of return was determined by using a building-block method in which best-estimate ranges of expected future real rate of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage.
- (d) Municipal Bond Rate: The discount rate determination does not use a municipal bond rate.
- (e) Periods of Projected Benefit Payments: The long-term assumed rate of return was applied to all periods of projected benefit payments to determine the total pension liability.
- (f) Assumed Asset Allocation: The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

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Asset Class	Target Allocation	Long Term Expected Real Rate of Return
U.S. equity	18.75%	4.30%
Non-US Equity	18.75%	4.80%
Private Equity	10.00%	6.65%
Specialty Credit/High Yield	15.00%	2.60%
Core Bonds	13.50%	1.35%
Cash	1.00%	0.20%
Real Estate	5.00%	4.85%
Opportunistic	3.00%	2.97%
Real return	15.00%	4.10%
Total	<u>100.00%</u>	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 6.25% based on a blending of the factors described above.

- (g) **Sensitivity Analysis:** This paragraph requires disclosure of the sensitivity of the net pension liability to changes in the discount rate. The following presents MSD's allocated portion of the net pension liability of the System, calculated using the discount rate of 6.25%, as well as what MSD's allocated portion of the net pension liability would be if it were calculated using a discount rate that is one percentage-point lower (5.25%) or 1 percentage-point higher (7.25%) than the current rate:

<i>(dollars in thousands)</i>	1% Decrease (5.25%)	Current Discount Rate (6.25%)	1% Increase (7.25%)
MSD's net pension liability	\$ 158,673	\$ 126,866	\$ 100,355

Employer's Portion of the Collective Net Pension Liability: MSD's proportionate share of the net pension liability, as indicated in the prior table, is \$126,865,574 or approximately 1.8%, an increase of 0.1% from fiscal year 2019. The net pension liability was distributed based on 2019 actual employer contributions to the plan.

Measurement Date: The total pension liability, net pension liability and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2018. The total pension liability was rolled forward from the valuation date to the plan's fiscal year ending June 30, 2019 using generally accepted actuarial principles.

Changes in Assumptions and Benefit Terms: There have been no plan provision changes since June 30, 2018. However the Board of Trustees has adopted new actuarial assumptions since June 30, 2018. These assumptions are documented in the report titled "Kentucky Retirement Systems 2018 Actuarial Experience Study for the Period Ending June 30, 2019". The total pension liability as of June 30, 2019 is determined using these updated assumptions.

Changes Since Measurement Date: There were no changes between the measurement date of the collective net pension liability and the employer's reporting date.

Pension Expense: MSD was allocated pension expense of \$21,999,022 related to the CERS for the year ending June 30, 2020.

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Deferred Outflows and Deferred Inflows: Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce pension expense, they are labeled as deferred inflows. If they will increase pension expense, they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five-year period. Deferred inflows and outflows as of the measurement date include:

<i>(dollars in thousands)</i>	Deferred Outflow of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	\$ 3,239	\$ 536
Change of assumptions	12,840	-
Changes in proportion and differences between employer contributions and proportionate shares of contributions	6,572	-
Differences between expected and actual investment earning on plan investments	-	2,045
	<u>22,651</u>	<u>2,581</u>
Contributions subsequent to the measurement date	9,133	-
	<u>31,784</u>	<u>2,581</u>
Total	<u>\$ 31,784</u>	<u>\$ 2,581</u>

Deferred outflows of resources resulting from employer contributions subsequent to the measurement date of \$9,132,559 will be recognized as a reduction of net pension liability in the year ending June 30, 2021. The remainder of the deferred outflows and deferred inflows of resources are amortized over three to five years with remaining amortization as follows:

<i>(dollars in thousands)</i>	
Year Ending June 30:	
2021	\$ 12,594
2022	5,449
2023	1,882
2024	145
	<u>\$ 20,070</u>

Pension Plan Fiduciary Net Position: Detailed information about the pension plans' fiduciary net position is available in the separately issued pension plan financial reports.

OPEB Information for June 30, 2020 Financial Statements:

Total OPEB Liability: The total other post-employment benefits plan (OPEB) was determined by an actuarial valuation as of June 30, 2019 using the following actuarial assumptions, applied to all periods included in the measurement:

Price inflation	2.30%
Payroll growth rate	2.00%
Salary increases	3.30 to 11.55%, varies by service

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Investment rate of return	6.25%
Healthcare trend rates:	
Pre-65	Initial trend starting at 7.25% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 13 years.
Post-65	Initial trend starting at 5.10% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 11 years.
Mortality:	
Pre-retirement	PUB-2010 General Mortality table, for the Non-Hazardous Systems, and the PUB-2010 Public Safety Mortality table for the Hazardous Systems, projected with the ultimate rates from the MP-2014 mortality improvement scale using a base year of 2010
Post-retirement (non-disabled)	System-specific mortality table based on mortality experience from 2013-2018 projected with the ultimate rates from MP-2104 mortality improvement scale using a base year of 2019
Post-retirement (disabled)	PUB-201 Disabled Mortality table with a 4-year set-forward for both male and female rates, projected with the ultimate rates from the MP-2014 mortality improvement scale using a base year of 2010

Discount rate assumptions:

- (a) Discount Rate: The discount rate used to measure the total OPEB liability was 5.68%.
- (b) Projected Cash Flows: The projection of cash flows used to determine the discount rate assumed the local employers and plan members would contribute the actuarially determined contribution rate of projected compensation over the remaining 24-year amortization period of the unfunded actuarial accrued liability.
- (c) Long-Term Rate of Return: The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared every five years for the System. The most recent analysis, performed for the period covering fiscal years 2008 through 2013 is outlined in a report dated April 30, 2014. However, the Board of KRS has the authority to review the assumptions on a more frequent basis and adopt new assumptions prior to the next scheduled experience study. The long-term expected rate of return was determined by using a building-block method in which best-estimate ranges of expected future real rate of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage.
- (d) Municipal Bond Rate: The discount rate determination used a municipal bond rate of 3.13% as reported in Fidelity Index's "20 – Year Municipal GO AA Index" as of June 28, 2019.
- (e) Period of Projected Benefit Payments: Current assets, future contributions, and investment earnings are projected to be sufficient to pay the projected benefit payments from the retirement system. However, the cost associated with the implicit employer subsidy is not currently being included in the calculation of the system's actuarial determined contributions, and it is the actuary's understanding that any cost associated with the implicit subsidy will not be paid out of the system's trust. Therefore, the municipal bond rate was applied to future expected benefit payments associated with the implicit subsidy.
- (f) Assumed Asset Allocations: The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

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Asset Class	Target Allocation	Long Term Expected Real Rate of Return
U.S. equity	18.75%	4.30%
Non-US Equity	18.75%	4.80%
Private Equity	10.00%	6.65%
Specialty Credit/High Yield	15.00%	2.60%
Core Bonds	13.50%	1.35%
Cash	1.00%	0.20%
Real Estate	5.00%	4.85%
Opportunistic	3.00%	2.97%
Real return	15.00%	4.10%
Total	<u>100.00%</u>	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 6.25% based on a blending of the factors described above.

- (g) Sensitivity Analysis: This paragraph requires disclosure of the sensitivity of the net OPEB liability to changes in the discount rate and changes in the healthcare cost trend rate.

The following presents MSD's allocated portion of the net OPEB liability of the System, calculated using the discount rate of 5.68%, as well as what the MSD's allocated portion of the System's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (4.68%) or 1-percentage-point higher (6.68%) than the current rate for Nonhazardous:

<i>(dollars in thousands)</i>	1% Decrease (4.68%)	Current Discount Rate (5.68%)	1% Increase (6.68%)
MSD's net OPEB liability	\$ 40,647	\$ 30,343	\$ 21,853

The following presents the MSD's allocated portion of the net OPEB liability of the System, calculated using the healthcare cost trend rate of percent, as well as what the MSD's allocated portion of the System's net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate for Nonhazardous:

<i>(dollars in thousands)</i>	1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
MSD's net OPEB liability	\$ 22,566	\$ 30,343	\$ 39,773

Employer's Portion of the Collective OPEB Liability: MSD's proportionate share of the net OPEB liability, as indicated in the prior table, is \$30,342,854 or approximately 1.8%, or an increase of 0.01% from fiscal year 2019. The net OPEB liability was distributed based on 2019 actual employer contributions to the plan.

Measurement Date: The total OPEB liability, net OPEB liability, and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2018. The total OPEB liability was rolled-forward

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from the valuation date to the plan's fiscal year ending June 30, 2019 using generally accepted actuarial principles.

Changes in Assumptions and Benefit Terms: There have been no plan provision changes since June 30, 2019. However, the Board of Trustees has adopted new actuarial assumptions since June 30, 2018. These assumptions are documented in a report titled "Kentucky Retirement Systems 2018 Actuarial Experience Study for the Period Ending June 30, 2018". The total OPEB liability as of June 30, 2019 is determined using these updated assumptions. The discount rate used to measure the total OPEB liability was 5.85% in the prior year compared to 5.68% used for the current year.

Changes Since Measurement Date: There were no changes between the measurement date of the collective net OPEB liability and the employer's reporting date.

OPEB Expense: MSD was allocated OPEB expense of \$3,327,973 related to the CERS for the year ending June 30, 2020.

Deferred Outflows and Deferred Inflows: Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce OPEB expense they are labeled as deferred inflows. If they will increase OPEB expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five-year period.

Deferred inflows and outflows as of the measurement date include:

<i>(dollars in thousands)</i>	Deferred Outflow of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	\$ -	\$ 9,155
Change of assumptions	8,979	60
Changes in proportion and differences between employer contributions and proportionate shares of contributions	2,448	46
Differences between expected and actual investment earning on plan investments	-	1,348
	<u>11,427</u>	<u>10,609</u>
Contributions subsequent to the measurement date	2,904	-
Total	<u>\$ 14,331</u>	<u>\$ 10,609</u>

Deferred outflows of resources resulting from employer contributions subsequent to the measurement date of \$2,903,895 which include the implicit subsidy reported of \$651,513, will be recognized as a reduction of net OPEB liability in the year ending June 30, 2021. The remainder of the deferred outflows and deferred inflows of resources are amortized over three to five years with remaining amortization as follows:

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<i>(dollars in thousands)</i>	
Year Ending June 30:	
2021	\$ 278
2022	279
2023	707
2024	(115)
2025	(287)
Thereafter	(44)
	\$ 818

OPEB Plan Fiduciary Net Position: Detailed information about the OPEB plans' fiduciary net position is available in the separately issued OPEB plan financial reports.

Pension Plan Information for June 30, 2019 Financial Statements:

Total Pension Liability: The total pension liability was determined by an actuarial valuation as of June 30, 2017 with a roll forward to June 30, 2018. An expected total pension liability was determined at June 30, 2018 using standard roll forward techniques. The following actuarial assumptions were applied to all periods included in the measurement:

Price Inflation	2.30%
Salary increases	3.05%, average, including inflation
Investment rate of return	6.25%, net of pension plan investment expense, including inflation

The mortality table used for active members is RP-2000 Combined Mortality Table projected with Scale BB to 2013 (multiplied by 50% for males and 30% for females). For healthy retired members and beneficiaries, the mortality table used is the RP-2000 Combined Mortality Table projected with Scale BB to 2013 (set back 1 year for females). For disabled members, the RP-2000 Combined Disabled Mortality Table projected with Scale BB to 2013 (set back 4 years for males) is used for the period after disability retirement. There is some margin in the current mortality tables for possible future improvement in mortality rates and that margin will be reviewed again when the next experience investigation is conducted. The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period July 1, 2008 – June 30, 2013.

Discount rate assumptions:

- (a) Discount Rate: The discount rate used to measure the total pension liability was 6.25%.
- (b) Projected Cash Flows: The projection of cash flows used to determine the discount rate assumed the local employers and plan members would contribute the statutorily determined contribution rate of projected compensation over the remaining 25-year amortization period of the unfunded actuarial accrued liability. The actuarial determined contribution rate is adjusted to reflect the phase-in of anticipated gains on actuarial value of assets over the first four years of the projection period.
- (c) Long-Term Rate of Return: The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared every five years for the System. The most recent analysis, performed for the period covering fiscal years 2008 through 2013 is outlined in a report dated April 30, 2014. However, the Board of KRS has the authority to review the assumptions on a more frequent basis and adopt new assumptions prior to the next scheduled experience study. The long-term expected rate of return was determined by using a building-block method in which best-estimate ranges of expected future real rate of returns are developed for each asset class. The

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ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage.

- (d) Municipal Bond Rate: The discount rate determination does not use a municipal bond rate.
- (e) Periods of Projected Benefit Payments: The long-term assumed rate of return was applied to all periods of projected benefit payments to determine the total pension liability.
- (f) Assumed Asset Allocation: The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
US equity	17.50%	
US Large Cap	5.00%	4.50%
US Mid Cap	6.00%	4.50%
US Small Cap	6.50%	5.50%
Non US Equity	17.50%	
International Developed	12.50%	6.50%
Emerging Markets	5.00%	7.25%
Global Bonds	4.00%	3.00%
Credit Fixed	24.00%	
Global IG Credit	2.00%	3.75%
High Yield	7.00%	5.50%
EMD	5.00%	6.00%
Illiquid Private	10.00%	8.50%
Private equity	10.00%	6.50%
Real Estate	5.00%	9.00%
Absolute Return	10.00%	5.00%
Real Return	10.00%	7.00%
Cash	2.00%	1.50%
Total	<u>100.00%</u>	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 6.25% based on a blending of the factors described above.

- (g) Sensitivity Analysis: This paragraph requires disclosure of the sensitivity of the net pension liability to changes in the discount rate. The following presents MSD's allocated portion of the net pension liability of the System, calculated using the discount rate of 6.25%, as well as what MSD's allocated portion of the net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower (5.25%) or 1 percentage-point higher (7.25%) than the current rate:

<i>(dollars in thousands)</i>	1% Decrease (5.25%)	Current Discount Rate (6.25%)	1% Increase (7.25%)
MSD's net pension liability	\$ 131,569	\$ 104,511	\$ 81,842

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Employer's Portion of the Collective Net Pension Liability: MSD's proportionate share of the net pension liability, as indicated in the prior table, is \$104,511,092 or approximately 1.7%, an increase of 0.1% from fiscal year 2018. The net pension liability was distributed based on 2018 actual employer contributions to the plan.

Measurement Date: June 30, 2017 is the actuarial valuation date and June 30, 2018 is the measurement date upon which the total pension liability is based.

Changes in Assumptions and Benefit Terms: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total pension liability have not changed except during the 2018 legislative session, House Bill 185 was enacted, which updated the benefit provisions for active members who die in the line of duty. Benefits paid to the spouses of deceased members have been increased from 25% of the member's final rate of pay to 75% of the member's average pay. If the member does not have a surviving spouse, benefits paid to surviving dependent children have been increased from 10% of the member's final pay rate to 50% of average pay for one child, 65% of average pay for two children, or 75% of average pay for three children. The total pension liability as of June 30, 2018 was determined using these updated benefit provisions.

Changes Since Measurement Date: There were no changes between the measurement date of the collective net pension liability and the employer's reporting date.

Pension Expense: MSD was allocated pension expense of \$18,467,215 related to the CERS for the year ending June 30, 2019.

Deferred Outflows and Deferred Inflows: Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce pension expense, they are labeled as deferred inflows. If they will increase pension expense, they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five-year period. Deferred inflows and outflows as of the measurement date include:

<i>(dollars in thousands)</i>	Deferred Outflow of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	\$ 3,409	\$ 1,530
Change of assumptions	10,214	-
Changes in proportion and differences between employer contributions and proportionate shares of contributions	5,774	415
Differences between expected and actual investment earning on plan investments	-	1,253
	<u>19,397</u>	<u>3,198</u>
Contributions subsequent to the measurement date	<u>7,534</u>	-
Total	<u>\$ 26,931</u>	<u>\$ 3,198</u>

Deferred outflows of resources resulting from employer contributions subsequent to the measurement date of \$7,533,704 will be recognized as a reduction of net pension liability in the year ending June 30, 2020. The remainder of the deferred outflows and deferred inflows of resources are amortized over three to five years with remaining amortization as follows:

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<i>(dollars in thousands)</i>	
Year Ending June 30:	
2020	\$ 10,791
2021	6,418
2022	(449)
2023	(561)
	<u>\$ 16,199</u>

Pension Plan Fiduciary Net Position: Detailed information about the pension plans' fiduciary net position is available in the separately issued pension plan financial reports.

OPEB Information for June 30, 2019 Financial Statements:

Total OPEB Liability: The total other post-employment benefits plan (OPEB) was determined by an actuarial valuation as of June 30, 2017 rolled forward to 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Price inflation	2.30%	
Payroll growth rate	2.00%	
Salary increases	3.05%, average	
Investment rate of return	6.25%	
Healthcare trend rates		
Pre-65		Initial trend starting at 7.00% at January 1, 2020 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 12 years.
Post-65		Initial trend starting at 5.00% at January 1, 2020 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 10 years.

The mortality table used for active members is RP-2000 Combined Mortality Table projected with Scale BB to 2013 (multiplied by 50% for males and 30% for females). For healthy retired members and beneficiaries, the mortality table used is the RP-2000 Combined Mortality Table projected with Scale BB to 2013 (set back 1 year for females). For disabled members, the RP-2000 Combined Disabled Mortality Table projected with Scale BB to 2013 (set back 4 years for males) is used for the period after disability retirement. There is some margin in the current mortality tables for possible future improvement in mortality rates and that margin will be reviewed again when the next experience investigation is conducted. The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an actuarial experience study for the period July 1, 2008 – June 30, 2013.

Discount rate assumptions:

- (h) **Discount Rate:** The discount rate used to measure the total OPEB liability was 5.85%, which was increased from the 5.84% discount rate used in the prior year.
- (i) **Projected Cash Flows:** The projection of cash flows used to determine the discount rate assumed the local employers and plan members would contribute the actuarially determined contribution rate of projected compensation over the remaining 25-year amortization period of the unfunded actuarial accrued liability.
- (j) **Long-Term Rate of Return:** The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared every five years for the System. The most recent analysis,

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

performed for the period covering fiscal years 2008 through 2013 is outlined in a report dated April 30, 2014. However, the Board of KRS has the authority to review the assumptions on a more frequent basis and adopt new assumptions prior to the next scheduled experience study. The long-term expected rate of return was determined by using a building-block method in which best-estimate ranges of expected future real rate of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage.

- (k) **Municipal Bond Rate:** The discount rate determination used a municipal bond rate of 3.62% as reported in Fidelity Index's "20 – Year Municipal GO AA Index" as of June 30, 2018.
- (l) **Period of Projected Benefit Payments:** Current assets, future contributions, and investment earnings are projected to be sufficient to pay the projected benefit payments from the retirement system. However, the cost associated with the implicit employer subsidy is not currently being included in the calculation of the system's actuarial determined contributions, and it is the actuary's understanding that any cost associated with the implicit subsidy will not be paid out of the system's trust. Therefore, the municipal bond rate was applied to future expected benefit payments associated with the implicit subsidy.
- (m) **Assumed Asset Allocations:** The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
US equity	17.50%	
US Large Cap	5.00%	4.50%
US Mid Cap	6.00%	4.50%
US Small Cap	6.50%	5.50%
Non US Equity	17.50%	
International Developed	12.50%	6.50%
Emerging Markets	5.00%	7.25%
Global Bonds	4.00%	3.00%
Credit Fixed	24.00%	
Global IG Credit	2.00%	3.75%
High Yield	7.00%	5.50%
EMD	5.00%	6.00%
Illiquid Private	10.00%	8.50%
Private equity	10.00%	6.50%
Real Estate	5.00%	9.00%
Absolute Return	10.00%	5.00%
Real Return	10.00%	7.00%
Cash	2.00%	1.50%
Total	<u>100.00%</u>	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 6.25% based on a blending of the factors described above.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS

- (n) Sensitivity Analysis: This paragraph requires disclosure of the sensitivity of the net OPEB liability to changes in the discount rate and changes in the healthcare cost trend rate.

The following presents MSD's allocated portion of the net OPEB liability of the System, calculated using the discount rate of 5.85%, as well as what the MSD's allocated portion of the System's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (4.85%) or 1-percentage-point higher (6.85%) than the current rate for Nonhazardous:

<i>(dollars in thousands)</i>	1% Decrease (4.85%)	Current Discount Rate (5.85%)	1% Increase (6.85%)
MSD's net OPEB liability	\$ 39,576	\$ 30,470	\$ 22,714

The following presents the MSD's allocated portion of the net OPEB liability of the System, calculated using the healthcare cost trend rate of percent, as well as what the MSD's allocated portion of the System's net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate for Nonhazardous:

<i>(dollars in thousands)</i>	1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
MSD's net OPEB liability	\$ 22,685	\$ 30,470	\$ 39,646

Employer's Portion of the Collective OPEB Liability: MSD's proportionate share of the net OPEB liability, as indicated in the prior table, is \$30,470,346 or approximately 1.7%, or unchanged, from fiscal year 2018. The net OPEB liability was distributed based on 2018 actual employer contributions to the plan.

Measurement Date: June 30, 2017 is the actuarial valuation date and June 30, 2018 is the measurement date upon which the total OPEB liability is based.

Changes in Assumptions and Benefit Terms: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total OPEB liability have not changed except during the 2018 legislative session, House Bill 185 was enacted, which updated the benefit provisions for active members who die in the line of duty. The system shall now pay 100% of the insurance premium for spouses and children of all active members who die in the line of duty. The total OPEB liability as of June 30, 2018 was determined using these updated benefit provisions.

Changes Since Measurement Date: There were no changes between the measurement date of the collective net OPEB liability and the employer's reporting date.

OPEB Expense: MSD was allocated OPEB expense of \$4,165,841 related to the CERS for the year ending June 30, 2019.

Deferred Outflows and Deferred Inflows: Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce OPEB expense they are labeled as deferred inflows. If they will increase OPEB expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive System members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five-year period. Deferred inflows and outflows as of the measurement date include:

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
NOTES TO THE FINANCIAL STATEMENTS**

<i>(dollars in thousands)</i>	Deferred Outflow of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	\$ -	\$ 3,551
Change of assumptions	6,085	70
Changes in proportion and differences between employer contributions and proportionate shares of contributions	1,551	60
Differences between expected and actual investment earning on plan investments	-	2,099
	<u>7,636</u>	<u>5,780</u>
Contributions subsequent to the measurement date	<u>2,935</u>	<u>-</u>
Total	<u>\$ 10,571</u>	<u>\$ 5,780</u>

Deferred outflows of resources resulting from employer contributions subsequent to the measurement date of \$2,934,661 which include the implicit subsidy reported of \$491,549, will be recognized as a reduction of net OPEB liability in the year ending June 30, 2020. The remainder of the deferred outflows and deferred inflows of resources are amortized over three to five years with remaining amortization as follows:

<i>(dollars in thousands)</i>	
Year Ending June 30:	
2020	\$ 387
2021	387
2022	387
2023	795
2024	13
Thereafter	<u>(113)</u>
	<u>\$ 1,856</u>

OPEB Plan Fiduciary Net Position: Detailed information about the OPEB plans' fiduciary net position is available in the separately issued OPEB plan financial reports.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION**

Louisville and Jefferson County Metropolitan Sewer District Schedule of Proportionate Share of the Net Pension Liability For the Years Ended June 30, (dollars in thousands)						
	2020	2019	2018	2017	2016	2015
MSD's proportion of the net pension liability	1.80%	1.72%	1.60%	1.51%	1.60%	1.60%
MSD's proportionate share of the net pension liability	\$126,866	\$104,511	\$93,517	\$74,132	\$68,653	\$51,988
MSD's covered payroll	48,391	45,859	43,084	39,596	37,900	37,100
MSD's proportion of the net pension liability as a percentage of its covered payroll	262.2%	227.9%	217.1%	187.2%	181.1%	140.1%
Plan fiduciary net position as a percentage of the total pension liability	50.45%	53.54%	53.32%	55.50%	59.97%	66.80%

Notes:

- 1) The amounts presented for each fiscal year were determined as of the prior year end.
- 2) This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years that information is available.

Changes in Assumptions and Benefit Terms:

2015: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total pension liability have been updated as described in Schedule D of the CERS actuary report. The changes are noted below:

- The assumed investment rate of return was decreased from 7.75% to 7.50%.
- The assumed rate of inflation was reduced from 3.50% to 3.25%.
- The assumed rate of wage inflation was reduced from 1.00% to 0.75%.
- Payroll growth assumption was reduced from 4.50% to 4.00%.
- The mortality table used for active members is RP-2000 Combined Mortality Table projected with Scale BB to 2013 (multiplied by 50% for males and 30% for females).
- For healthy retired members and beneficiaries, the mortality table used is the RP-2000 Combined Mortality Table projected with Scale BB to 2013 (set back 1 year for females). For disabled members, the RP-2000 Combined Disabled Mortality Table projected with Scale BB to 2013 (set back 4 years for males) is used for the period after disability retirement. There is some margin in the current mortality tables for possible future improvement in mortality rates and that margin will be reviewed again when the next experience investigation is conducted.
- The assumed rates of retirement, withdrawal and disability were updated to more accurately reflect experience.

2016: There were no changes in assumptions and benefit terms since the prior measurement date.

2017: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total pension liability have been updated as follows:

- The assumed investment rate of return was decreased from 7.50% to 6.25%.
- The assumed rate of inflation was reduced from 3.25% to 2.30%.
- Payroll growth assumption was reduced from 4.00% to 3.05%.

2018: Since the prior measurement date, there have been no changes in actuarial assumptions. However, during the 2018 legislative session, House Bill 185 was enacted, which updated the benefit provisions for active members who die in the line of duty. Benefits paid to the spouses of deceased members have been

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION**

increased from 25% of the member's final rate of pay to 75% of the member's average pay. If the member does not have a surviving spouse, benefits paid to surviving dependent children have been increased from 10% of the member's final pay rate to 50% of average pay for one child, 65% of average pay for two children, or 75% of average pay for three children. The total pension liability as of June 30, 2018 was determined using these updated benefit provisions.

2019: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total pension liability have been updates as follows:

- Salary increases were increased from 3.05% to a range of 3.3% - 10.3%.
- The Mortality Table was changed from RP-2000 to PUB-2010.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION**

Louisville and Jefferson County Metropolitan Sewer District Schedule of Employer Contributions - Pension For the Years Ended June 30, (dollars in thousands)						
	2020	2019	2018	2017	2016	2015
Statutorily required contribution for pension	\$ 9,133	\$ 7,534	\$ 6,196	\$ 5,279	\$ 4,767	\$ 4,576
Contribution in relation to the statutorily required contribution	<u>(9,133)</u>	<u>(7,534)</u>	<u>(6,196)</u>	<u>(5,279)</u>	<u>(4,767)</u>	<u>(4,576)</u>
Annual contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
MSD contributions as a percentage of statutorily required contribution for pension	100%	100%	100%	100%	100%	100%
MSD covered payroll	\$ 49,808	\$ 48,391	\$45,859	\$43,084	\$39,596	\$37,900
Contributions as a percentage of MSD's covered payroll	18.34%	15.57%	13.51%	12.25%	12.04%	12.07%

Notes:

- 1) This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years that information is available.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION**

Louisville and Jefferson County Metropolitan Sewer District Schedule of Proportionate Share of the Net OPEB Liability For the Years Ended June 30, (dollars in thousands)			
	2020	2019	2018
MSD's proportion of the net OPEB liability	1.80%	1.72%	1.60%
MSD's proportionate share of the net OPEB liability	\$30,343	\$30,470	\$32,119
MSD's covered payroll	48,391	45,859	43,084
MSD's proportion of the net OPEB liability as a percentage of its covered payroll	62.70%	66.44%	74.55%
Plan fiduciary net position as a percentage of the total OPEB liability	60.44%	57.62%	52.39%

Notes:

- 1) This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years that information is available.

Changes in Assumptions and Benefit Terms:

2017: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total OPEB liability have been updated as follows:

- The assumed rate of return was decreased from 7.5% to 6.25%.
- The assumed rate of inflation was reduced from 3.25% to 2.3%.
- Payroll growth assumption was reduced from 4.0% to 3.05%.

2018: Since the prior measurement date, there have been no changes in actuarial assumptions. However, during the 2018 legislative session, House Bill 185 was enacted, which updated the benefit provisions for active members who die in the line of duty. The system shall now pay 100% of the insurance premium for spouses and children of all active members who die in the line of duty. The total OPEB liability as of June 30, 2018 was determined using these updated benefit provisions.

2019: Since the prior measurement date, the demographic and economic assumptions that affect the measurement of the total pension liability have been updated as follows:

- Salary increases were increased from 3.05% to a range of 3.3% - 10.3%.
- The Mortality Table was changed from RP-2000 to PUB-2010.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION**

Louisville and Jefferson County Metropolitan Sewer District Schedule of Employer Contributions - OPEB For the Years Ended June 30, (dollars in thousands)			
	2020	2019	2018
Statutorily required contribution	\$ 2,252	\$ 2,443	\$ 2,011
Contributions in relation to the statutorily required contribution	(2,252)	(2,443)	(2,011)
Annual contribution deficiency (excess)	\$ -	\$ -	\$ -
MSD contributions as a percentage of statutorily required contribution for OPEB	100%	100%	100%
MSD covered payroll	\$49,808	\$48,391	\$45,859
Contributions as a percentage of MSD's covered payroll	4.52%	5.05%	4.39%

Notes:

- 1) This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years that information is available.



Morris Forman is Kentucky's largest and oldest water quality treatment center. On a normal day, it treats 100 million gallons of wastewater and up to 350 million gallons per day during storms.

STATISTICAL SECTION

This section of the Louisville & Jefferson County Metropolitan Sewer District's (MSD) Comprehensive Annual Financial Report presents detailed information as a supplement to the information presented in the financial statements and note disclosures to assist readers in assessing MSD's overall financial health.

Debt Service Coverage..... 67

This schedule presents information to help readers assess MSD's debt burden and MSD's ability to issue additional debt in the future.

Financial Trends..... 68

These schedules contain trend information to help readers understand how MSD's financial performance and position have changed over time. The information presented includes changes in net assets, an analysis of revenues and expenses and a comparative statement of cash flows

Revenue Capacity 72

This schedule contains information to help readers assess MSD's most significant revenue sources.

Operating Information 73

These schedules contain service and infrastructure data to help the reader understand how the information in MSD's financial report relates to the services that it provides. The information provided includes service and administration costs, project schedules, and water treatment capacity.

Demographic and Economic Information 77

These schedules offer demographic and economic indicators to help readers understand the environment within which MSD operates.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE SCHEDULE OF DEBT SERVICE COVERAGE
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Revenues:										
Service charges	\$ 312,859	\$ 289,173	\$ 274,504	\$ 253,943	\$ 238,480	\$ 225,462	\$ 214,056	\$ 205,222	\$ 190,482	\$ 183,297
Other operating income	6,198	5,195	4,645	5,691	4,810	4,407	2,576	4,823	1,756	2,379
Assessments	909	1,258	1,232	1,375	9,457	1,901	2,129	2,392	2,405	2,740
Investment income	15,600	18,692	16,531	14,273	17,278	17,623	20,330	20,119	40,687	33,700
Less: capitalized investment income	-	-	-	-	-	-	-	(3,817)	(1,851)	(12,134)
Total revenues	335,566	314,318	296,912	275,282	270,025	249,393	239,091	228,739	233,479	209,982
Operating expenses:										
Service and administrative costs ¹	149,945	142,082	131,948	119,586	117,671	106,301	108,814	108,041	108,325	107,307
Less: capitalized overhead	(39,643)	(38,383)	(38,148)	(31,949)	(30,516)	(30,056)	(33,568)	(33,110)	(33,200)	(30,308)
Capitalization Rate	26%	27%	29%	27%	26%	28%	31%	31%	31%	28%
Total operating expenses	110,302	103,699	93,800	87,637	87,155	76,245	75,246	74,931	75,125	76,999
Net revenues	225,264	210,619	203,112	187,645	182,870	173,148	163,845	153,808	158,354	132,983
Aggregate debt service:										
Current maturities of long-term debt	40,637	40,358	33,906	33,655	31,825	29,415	28,525	27,035	25,740	24,840
Interest expense - senior lien	92,274	94,831	95,041	90,117	86,818	83,404	80,613	92,616	89,243	78,954
Less: capitalized interest expense	(13,043)	(18,582)	(21,859)	(20,074)	(21,051)	(20,511)	(19,103)	(26,358)	(26,384)	(25,195)
Aggregate net debt service	\$ 119,868	\$ 116,607	\$ 107,088	\$ 103,698	\$ 97,592	\$ 92,308	\$ 90,035	\$ 93,293	\$ 88,599	\$ 78,599
Debt service coverage ratio²	188%	181%	190%	181%	187%	188%	182%	165%	179%	169%

¹Excludes the actuarial portion of changes to GASB 68 pension expense and GASB 75 OPEB for the year

²Excludes the actuarial portion of changes to GASB 68 pension expense and GASB 75 OPEB for the year

This table has been prepared using the definitions of revenue, expense and debt service contained in MSD's 1993 Sewer & Drainage System Revenue Bond Resolution.

The 1993 Resolution and its supplements require MSD to provide "Available Revenues", as defined in the Resolution, sufficient to pay 110% of each fiscal year's "Aggregate Net Debt Service" on Revenue Bonds and 100% of "Operating Expenses". "Available Revenues", as used only for purposes of the Resolution, means all revenues and other amounts received by MSD and pledged as security for payment of Bonds issued pursuant to the Resolution, but excludes any interest income which is capitalized in accordance with generally accepted accounting principles. "Operating Expenses" includes all reasonable, ordinary, usual or necessary current expenses of maintenance, repair and operation determined in accordance with generally accepted accounting principles and the enterprise basis of accounting. "Operating Expenses" does not include reserves for extraordinary maintenance and repair, nor does it include administrative and engineering expenses of MSD which are necessary or incidental to capital improvements for which debt has been issued and which may be paid from the proceeds of such debt. "Aggregate Net Debt Service" is aggregate current principal and interest requirements on all Bonds issued pursuant to the Resolution, excluding (i) interest expense, which in accordance with generally accepted accounting principles, is capitalized and which may be paid from the proceeds of debt, and (ii) other amounts, if any, available, or expected to become available in the ordinary course for payment of principal and interest, and not included in "Available Revenues".

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF NET POSITION
ASSETS AND DEFERRED OUTFLOW OF RESOURCES
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Current Assets:										
Unrestricted cash and cash equivalents	\$ 99,973	\$ 43,728	\$ 50,276	\$ 42,449	\$ 69,481	\$ 63,013	\$ 84,780	\$ 66,376	\$ 12,040	\$ 34,508
Unrestricted investments	100	36,744	25,080	10,095	100	100	100	100	100	100
Restricted cash and cash equivalents	17,776	22,348	29,987	19,454	5,379	16,342	39,507	62,249	227,327	112,559
Restricted investments	-	30,172	-	22,675	14,999	-	-	90,574	94,639	294,868
Accounts receivable	27,227	27,915	26,332	23,480	26,696	23,787	21,809	18,465	16,666	17,789
Inventories	4,977	4,623	4,407	4,184	4,210	3,981	3,808	3,579	3,484	3,435
Prepaid expenses and other current assets	4,147	3,918	3,845	2,877	3,184	2,880	2,636	2,110	1,862	2,841
Total current assets	154,200	169,448	139,927	125,214	124,049	110,103	152,640	243,453	356,118	466,100
Plant, Lines and Other facilities:										
Utility plant in service	4,114,641	3,984,619	3,432,754	3,306,851	3,155,696	2,777,788	2,753,762	2,702,448	2,560,403	2,498,355
Less: accumulated depreciation	(1,349,897)	(1,326,461)	(1,218,427)	(1,146,036)	(1,070,108)	(1,008,503)	(946,427)	(884,199)	(825,205)	(768,423)
	2,764,744	2,658,158	2,214,327	2,160,815	2,085,588	1,769,285	1,807,335	1,818,249	1,735,198	1,729,932
Construction in progress	538,013	460,501	711,655	581,222	487,674	623,181	463,167	371,816	370,350	272,850
Net plant, lines and other facilities	3,302,757	3,118,659	2,925,982	2,742,037	2,573,262	2,392,466	2,270,502	2,190,065	2,105,548	2,002,782
Other non-current assets	109,354	108,322	184,659	156,960	178,762	169,587	154,717	36,262	35,876	36,611
Total non-current assets	3,412,111	3,226,981	3,110,641	2,898,997	2,752,024	2,562,053	2,425,219	2,226,327	2,141,424	2,039,393
Total assets	3,566,311	3,396,429	3,250,568	3,024,211	2,876,073	2,672,156	2,577,859	2,469,780	2,497,542	2,505,493
Deferred outflow of resources	79,767	52,018	54,267	35,911	23,708	20,407	22,862	13,511	15,176	16,842
Total assets and deferred outflows	\$ 3,646,078	\$ 3,448,447	\$ 3,304,835	\$ 3,060,122	\$ 2,899,781	\$ 2,692,563	\$ 2,600,721	\$ 2,483,291	\$ 2,512,718	\$ 2,522,335

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF NET POSITION
LIABILITIES, DEFERRED INFLOW OF RESOURCES AND NET POSITION
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Liabilities:										
Current liabilities (payable from current assets):										
Accounts payable and accrued expenses	\$ 24,176	\$ 18,168	\$ 16,342	\$ 16,550	\$ 17,420	\$ 14,936	\$ 13,653	\$ 12,693	\$ 16,470	\$ 15,732
Total current liabilities (payable from current assets)	24,176	18,168	16,342	16,550	17,420	14,936	13,653	12,693	16,470	15,732
Current liabilities (payable from restricted assets):										
Accounts payable and accrued expenses	39,860	31,945	47,472	30,764	33,271	30,607	14,712	16,168	12,656	15,105
Accrued interest	17,315	17,819	18,455	15,935	17,533	13,036	12,834	12,458	13,959	12,360
Revenue bonds payable	43,460	42,200	40,190	33,655	31,825	29,415	28,525	27,035	25,740	24,840
Bank notes	100	100	-	-	-	-	-	-	-	-
Other subordinate debt	2,167	545	105	-	-	-	-	-	-	-
Refundable deposits	2,954	2,928	2,861	2,300	2,557	1,639	1,568	1,137	1,013	1,341
Total current liabilities (payable from restricted assets)	105,856	95,537	109,083	82,654	85,186	74,697	57,639	56,798	53,368	53,646
Non-current liabilities:										
Bonds payable	1,868,455	1,914,340	1,956,540	1,831,605	1,722,745	1,583,390	1,549,700	1,478,225	1,536,770	1,591,670
Bond anticipation note	226,340	226,340	226,340	226,340	226,340	226,340	226,340	226,340	226,340	226,340
Commercial paper notes	255,000	120,000	-	-	-	-	-	-	-	-
Other subordinated debt	28,284	2,113	1,766	1,973	2,072	2,168	2,261	2,351	-	-
Unamortized debt premium/discount	74,458	80,421	90,628	74,328	67,462	60,797	60,263	56,764	45,841	25,646
Investment derivative asset liability	72,228	73,040	59,443	-	-	-	-	-	-	-
At-market derivative asset liability	20,822	-	-	-	-	-	-	-	-	-
Net Pension liability and OPEB liability	157,209	134,981	125,636	74,132	68,653	51,988	58,825	-	-	-
Other long-term liabilities	-	-	-	-	690	944	761	973	5,663	5,561
Total long-term debt	2,702,796	2,551,235	2,460,353	2,208,378	2,087,962	1,925,627	1,898,150	1,764,653	1,814,614	1,849,217
Total liabilities	2,832,828	2,664,940	2,585,778	2,307,582	2,190,568	2,015,260	1,969,442	1,834,144	1,884,452	1,918,595
Deferred inflow of resources	16,520	12,955	10,383	84,052	108,633	92,233	82,293	82,233	119,680	67,948
Net position:										
Net investment in capital assets	684,412	672,304	528,377	562,784	501,675	506,187	418,784	365,225	313,575	363,334
Restricted	80,421	81,207	156,425	150,386	84,639	80,424	148,451	136,939	157,002	141,217
Unrestricted	31,897	17,041	23,872	(44,682)	14,266	(1,541)	(18,249)	64,750	38,009	31,241
Total net assets	796,730	770,552	708,674	668,488	600,580	585,070	548,986	566,914	508,586	535,792
Total liabilities, deferred inflows and net position	\$ 3,646,078	\$ 3,448,447	\$ 3,304,835	\$ 3,060,122	\$ 2,899,781	\$ 2,692,563	\$ 2,600,721	\$ 2,483,291	\$ 2,512,718	\$ 2,522,335

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Operating revenue:										
Wastewater service charges	\$ 237,807	\$ 219,467	\$ 210,636	\$ 194,965	\$ 183,592	\$ 173,895	\$ 165,599	\$ 159,791	\$ 149,626	\$ 145,880
Drainage service charges	75,052	69,706	63,868	58,978	54,888	51,567	48,457	45,431	40,856	37,417
Other operating income	6,198	5,195	4,645	5,691	4,810	4,407	2,576	4,823	1,756	2,379
Total operating revenue	319,057	294,368	279,149	259,634	243,290	229,869	216,632	210,045	192,238	185,676
Operating expenses:										
Service and administrative costs	167,771	154,325	142,711	122,098	121,674	106,174	108,814	108,041	108,326	107,307
Capitalization/recovery of cost	(39,643)	(38,383)	(38,147)	(31,949)	(30,516)	(30,056)	(33,568)	(32,200)	(30,860)	(30,472)
Capitalized overhead (over) under applied	-	-	88	-	-	-	-	(910)	(2,340)	164
Depreciation and amortization	98,872	87,882	77,954	77,156	62,820	63,321	63,516	60,335	60,527	58,741
Total operating expenses	227,000	203,824	182,606	167,305	153,978	139,439	138,762	135,266	135,653	135,740
Income (loss) from operations	92,057	90,544	96,543	92,329	89,312	90,430	77,870	74,779	56,585	49,936
Non-operating revenue (expense):										
Gain/loss disposal of assets	(15,008)	15	-	-	-	-	-	-	-	-
Investment income	5,275	8,338	6,280	4,047	7,559	7,527	10,234	3,695	29,682	25,916
Build America bond refund	10,325	10,339	10,249	10,226	10,332	10,096	10,096	10,986	10,986	7,978
Interest expense - bonds	(92,274)	(94,831)	(95,041)	(90,117)	(86,818)	(83,404)	(80,613)	(92,616)	(89,243)	(78,954)
Interest expense - swaps	(8,027)	(6,468)	(7,724)	(8,926)	(9,514)	(9,737)	(9,733)	(10,200)	(11,235)	(11,627)
Interest expense - other	(13,129)	(13,497)	(9,873)	(9,317)	(8,601)	(4,611)	(4,629)	(4,829)	(6,595)	(4,896)
Amortization of debt discount/premium	12,688	14,344	15,198	13,701	12,052	7,887	7,296	6,735	7,032	3,063
Amortization of loss on refunding	(2,404)	(2,817)	(3,147)	(3,070)	(1,949)	(1,980)	(2,552)	-	-	-
Capitalized interest	13,043	18,582	21,859	20,074	21,051	20,511	19,103	26,358	26,384	25,195
Change in fair values - swaps	812	(13,597)	16,317	26,072	(22,951)	(5,240)	(1,222)	36,286	(52,897)	22,638
Total non-operating revenue (expenses), net	(88,699)	(79,592)	(45,882)	(37,310)	(78,839)	(58,951)	(52,020)	(23,585)	(85,886)	(10,687)
Net income / (loss) before contributions	3,358	10,952	50,661	55,019	10,473	31,479	25,850	51,194	(29,301)	39,249
Contributions										
Property owner assessments	-	-	-	2,376	-	-	-	-	-	334
All other	9,085	50,926	12,726	10,513	5,037	4,605	8,103	7,134	2,095	3,413
Increase (decrease) in net position	12,443	61,878	63,387	67,908	15,510	36,084	33,953	58,328	(27,206)	42,996
Net position, beginning of year	770,552	708,674	668,488	600,580	585,070	548,986	566,914	508,586	535,792	492,796
Net position, OCEA merger	13,735	-	-	-	-	-	-	-	-	-
Restatement for GASB 68 implementation	-	-	-	-	-	-	(51,881)	-	-	-
Restatement for GASB 75 implementation	-	-	(23,201)	-	-	-	-	-	-	-
Net Position, beginning of year, as restated	784,287	708,674	645,287	600,580	585,070	548,986	515,033	508,586	535,792	492,796
Net position, end of year	\$ 796,730	\$ 770,552	\$ 708,674	\$ 668,488	\$ 600,580	\$ 585,070	\$ 548,986	\$ 566,914	\$ 508,586	\$ 535,792

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENTS OF CASH FLOWS
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Cash flows from operating activities:										
Cash received from customers	\$ 319,701	\$ 292,791	\$ 276,711	\$ 262,055	\$ 240,202	\$ 227,976	\$ 213,215	\$ 207,905	\$ 193,446	\$ 182,976
Cash paid to suppliers and employees	(105,649)	(103,173)	(95,150)	(88,300)	(85,202)	(75,258)	(73,175)	(79,926)	(76,077)	(72,566)
Net cash provided by operating activities	214,052	189,618	181,561	173,755	155,000	152,718	140,040	127,979	117,369	110,410
Cash flows from capital and related financing activities:										
Proceeds from issuance of revenue bonds	-	-	175,000	150,000	175,000	80,000	100,000	115,790	263,360	330,000
Proceeds from issuance of bond anticipation note	230,079	230,334	226,340	226,340	226,340	226,340	226,340	228,735	226,340	226,340
Proceeds from issuance of commercial paper	770,000	319,112	-	-	-	-	-	-	-	-
Proceeds from issuance of notes	90,200	100	-	-	-	-	-	-	-	-
Premium from sale of bonds	-	-	21,894	15,715	16,887	-	-	-	-	-
Payments for retirement of revenue bonds	(43,120)	(40,190)	-	-	-	-	-	-	-	-
Payments for retirement of bond anticipation note	(226,340)	(226,340)	-	-	-	-	-	-	-	-
Payments for retirement of commercial paper	(635,000)	(200,000)	-	-	-	-	-	-	-	-
Payments for retirement of notes	(90,200)	-	-	-	-	-	-	-	-	-
Payments for retirement of other subordinate debt	(2,120)	(317)	-	-	-	-	-	-	-	-
Principal paid on debt	-	-	(263,395)	(271,064)	(255,291)	(271,853)	(253,465)	(399,424)	(543,700)	(491,955)
Payments for interest expense	(106,312)	(108,511)	(102,394)	(103,919)	(92,246)	-	-	-	-	-
Payments for interest on swaps	(7,622)	(6,468)	(7,724)	(8,926)	(9,514)	(9,737)	(9,733)	(10,200)	(11,235)	(11,627)
Build America bond refund	10,325	10,339	10,248	10,226	10,332	10,096	10,096	10,986	10,986	7,978
Proceeds from capital grants	1,786	9,373	7,183	6,386	91	-	-	-	-	-
Proceeds from sale of capital assets	-	15	3	10	614	-	-	-	-	-
Payments for capital assets	(224,418)	(233,360)	(216,503)	(220,892)	(213,996)	-	-	-	-	-
Proceeds from assessments	1,169	780	1,621	1,254	2,329	-	-	-	-	-
Assessments extended	-	-	-	(2,376)	-	-	-	-	-	-
Capital contributed by governments, property owners & developers	-	-	-	-	-	4,605	8,103	7,134	2,095	3,747
Assessments receivable	-	-	-	-	-	2,050	1,695	1,833	1,930	1,676
Interest income - assessments	-	-	-	-	-	340	687	731	852	994
Interest paid on revenue bonds	-	-	-	-	-	(87,813)	(91,719)	(98,944)	(94,240)	(86,191)
Acquisition and construction of capital assets	-	-	-	-	-	(147,842)	(121,237)	(113,144)	(119,988)	(167,816)
Acquisition of non-operating property	-	-	-	-	-	(247)	(211)	(223)	(213)	(221)
Net cash provided (used) by capital and related financing activities	(231,573)	(245,133)	(147,727)	(197,246)	(139,454)	(194,061)	(129,444)	(256,726)	(263,813)	(187,075)
Cash flows from investing activities:										
Change in investments	86,661	34,428	(56,798)	15,990	(15,047)	1,052	(30,642)	4,064	200,229	100,012
Investment income	6,864	6,238	5,081	2,951	5,626	13,974	15,708	13,941	38,515	40,097
Net cash provided (used) by investing activities	93,525	40,666	(51,717)	18,941	(9,421)	15,026	(14,934)	18,005	238,744	140,109
Net increase (decrease) in cash and cash equivalents	76,004	(14,849)	(17,883)	(4,550)	6,125	(26,317)	(4,338)	(110,742)	92,300	63,444
Cash and cash equivalents, beginning of year	66,813	81,662	99,545	104,095	97,970	124,287	128,625	239,367	147,067	83,623
Cash and cash equivalents, end of year	\$ 142,817	\$ 66,813	\$ 81,662	\$ 99,545	\$ 104,095	\$ 97,970	\$ 124,287	\$ 128,625	\$ 239,367	\$ 147,067

Presentation and classification of items in the Cash flows from capital and related financing activities section was changed to provide better clarity beginning with the 2017 CAFR. Prior years were not reclassified and are shown as originally presented.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE SUMMARIES OF OPERATING REVENUE
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Service charges:										
Wastewater service charges:										
Residential	\$ 140,125	\$ 122,830	\$ 116,458	\$ 108,809	\$ 101,405	\$ 96,563	\$ 89,691	\$ 86,409	\$ 80,779	\$ 78,552
Commercial	74,134	71,054	66,651	61,860	58,343	62,257	58,812	57,192	53,116	46,598
Industrial	21,758	23,171	24,439	21,218	19,878	17,605	19,738	19,536	18,063	21,498
Other - net	5,997	6,803	7,517	6,853	8,186	2,806	2,611	2,267	2,219	1,847
Free wastewater to Metro Government	(4,207)	(4,391)	(4,429)	(3,775)	(4,220)	(5,336)	(5,253)	(5,613)	(4,551)	(2,615)
Total wastewater service charges	237,807	219,467	210,636	194,965	183,592	173,895	165,599	159,791	149,626	145,880
Drainage service charges:										
Residential	27,684	25,716	23,811	22,111	20,439	20,090	18,522	17,372	15,907	14,776
Commercial	41,960	38,775	35,778	35,372	32,971	28,936	27,910	26,123	23,017	20,862
Industrial	4,815	4,373	3,864	3,445	3,219	3,030	3,112	2,956	2,575	2,351
Other - net	2,999	2,834	2,533	-	-	-	-	-	-	-
Free drainage to Metro Government	(2,406)	(1,992)	(2,118)	(1,950)	(1,741)	(489)	(1,087)	(1,020)	(643)	(572)
Total stormwater service charges	75,052	69,706	63,868	58,978	54,888	51,567	48,457	45,431	40,856	37,417
Total service charges	312,859	289,173	274,504	253,943	238,480	225,462	214,056	205,222	190,482	183,297
Other operating income:										
Capacity charges	4,151	3,552	3,132	3,318	2,087	2,667	1,620	1,624	335	446
Connection fees	363	14	76	(723)	1,118	379	133	93	64	71
Inflow & infiltration fees	1,155	1,162	-	-	-	-	-	-	-	-
Regional facilities fees	-	-	-	-	16	34	-	-	-	-
Reserve capacity charges	-	-	-	-	-	-	-	64	-	-
Wastewater miscellaneous	529	467	1,437	3,096	1,589	1,327	823	2,984	1,299	1,804
Drainage miscellaneous	-	-	-	-	-	-	-	58	58	58
Total other operating income	6,198	5,195	4,645	5,691	4,810	4,407	2,576	4,823	1,756	2,379
Total operating revenue	\$ 319,057	\$ 294,368	\$ 279,149	\$ 259,634	\$ 243,290	\$ 229,869	\$ 216,632	\$ 210,045	\$ 192,238	\$ 185,676

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE SUMMARIES OF SERVICE AND ADMINISTRATIVE COSTS
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Service and administrative costs:										
Labor	\$ 73,476	\$ 71,379	\$ 64,718	\$ 59,183	\$ 55,229	\$ 54,378	\$ 57,249	\$ 55,028	\$ 55,010	\$ 56,358
Utilities	17,923	19,520	16,640	14,427	18,256	13,817	14,563	12,821	14,555	13,853
Materials and supplies	7,591	8,639	8,647	7,976	4,183	9,706	8,151	8,990	8,972	9,043
Professional services	3,033	2,992	3,985	4,127	4,169	2,839	1,932	3,942	2,416	2,624
Maintenance and repairs	5,949	4,875	7,208	9,116	10,007	7,915	9,096	10,866	11,090	10,054
Billing and collections	5,968	5,868	5,755	5,467	4,853	4,327	4,095	4,904	4,309	4,318
Chemicals and fuel	5,717	6,154	5,706	6,375	5,697	5,297	5,143	5,907	5,714	5,702
Biosolids disposal	4,647	3,333	2,616	2,651	2,245	1,967	1,795	1,709	1,759	2,035
All other	26,781	20,435	17,665	11,142	13,960	6,520	7,238	4,369	4,901	3,694
Service and administrative costs¹	151,085	143,195	132,940	120,464	118,599	106,766	109,262	108,536	108,726	107,681
Less: Recovery of cost										
Capitalized project cost	(39,643)	(38,383)	(38,147)	(31,949)	(30,516)	(30,056)	(33,568)	(33,110)	(33,200)	(30,472)
Revenue recoveries	(1,140)	(1,113)	(993)	(878)	(928)	(465)	(448)	(495)	(400)	(374)
Recovery of cost	(40,783)	(39,496)	(39,140)	(32,827)	(31,444)	(30,521)	(34,016)	(33,605)	(33,600)	(30,846)
Net service and administrative costs	\$ 110,302	\$ 103,699	\$ 93,800	\$ 87,637	\$ 87,155	\$ 76,245	\$ 75,246	\$ 74,931	\$ 75,126	\$ 76,835

¹Excludes the actuarial portion of changes to GASB 68 pension expense and GASB 75 OPEB for the year

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE SCHEDULES OF PLANT, LINES AND OTHER FACILITIES
YEARS ENDED JUNE 30
DOLLARS IN THOUSANDS

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Completed projects										
Sewer lines	\$ 1,746,705	\$ 1,648,891	\$ 1,497,090	\$ 1,440,360	\$ 1,379,153	\$ 1,277,745	\$ 1,274,180	\$ 1,265,437	\$ 1,179,685	\$ 1,159,437
Wastewater treatment facilities	627,903	669,041	648,503	637,166	629,083	489,292	489,289	479,998	479,226	471,190
Drainage facilities	880,863	839,159	561,341	542,271	515,898	448,853	448,899	443,577	437,139	434,943
Pumping and lift stations	256,228	240,963	183,795	166,158	139,651	96,812	96,819	89,503	73,023	71,122
Administrative facilities	52,297	51,734	50,818	50,817	49,342	49,342	49,317	49,317	46,068	46,078
Maintenance facilities	12,459	12,074	8,504	8,504	8,504	8,037	8,037	8,037	8,037	8,037
Machinery, equipment and other	121,265	118,879	97,407	98,138	90,702	85,395	85,395	83,882	77,068	71,923
Capitalized interest	416,921	403,878	385,296	363,437	343,363	322,312	301,800	282,697	260,157	235,624
Total completed projects	4,114,641	3,984,619	3,432,754	3,306,851	3,155,696	2,777,788	2,753,761	2,702,448	2,560,403	2,498,354
Less accumulated depreciation	(1,349,897)	(1,326,461)	(1,218,427)	(1,146,036)	(1,070,108)	(1,008,503)	(946,426)	(884,199)	(825,205)	(768,423)
Total completed projects - net	2,764,744	2,658,158	2,214,327	2,160,815	2,085,588	1,769,285	1,807,335	1,818,249	1,735,198	1,729,931
Total construction in progress	538,013	460,501	711,655	581,222	487,674	623,181	463,167	371,816	370,350	272,850
Total net plant, lines and other facilities	\$ 3,302,757	\$ 3,118,659	\$ 2,925,982	\$ 2,742,037	\$ 2,573,262	\$ 2,392,466	\$ 2,270,502	\$ 2,190,065	\$ 2,105,548	\$ 2,002,781

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
MISCELLANEOUS OPERATING INDICATORS
YEARS ENDED JUNE 30

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Miscellaneous Operating Indicators										
Miles of sewers	3,488	3,348	3,463	3,322	3,293	3,240	3,263	3,240	3,332	3,200
Number of treatment plants	5	5	5	5	5	16	19	19	20	20
Number of service connections	280,309	279,408	283,936	280,489	280,063	253,462	240,174	239,334	235,136	230,240
Daily average treatment (MGD)	164	173	150	112	139	143	141	131	145	142
Daily treatment capacity (MGD)	200	200	200	170	170	177	177	177	173	173

MGD - millions of gallons per day

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
WASTEWATER TREATMENT PLANT CAPACITY
2020**

Plant	Design Capacity	Avg Daily Flow	Eventual Capacity	Customer Base			Total	Year Built	Treatment Process
	MGD	MGD	MGD	Residential	Commercial	Industrial			
Morris Forman	120.0	100.6	120.0	120,233	13,810	309	134,352	1958	Secondary added in 1976.
Derek R. Guthrie	60.0	55.9	60.0	64,079	3,773	38	67,890	1986	Secondary
Hite Creek	6.0	4.9	9.0	10,989	665	9	11,663	1970	Tertiary: sand filter
Cedar Creek	7.5	7.2	11.3	18,432	1,084	11	19,527	1995	Tertiary: sand filter
Floyd's Fork	6.5	4.8	9.8	9,752	568	5	10,325	2001	Tertiary: sand filter
Total treatment system	200.0	173.4	215.1	223,485	19,900	372	243,757		

Source: MSD Engineering Department
add to year end close check list. Adonis & Christina need to run final reports at the same time.
this is customers, not SA on Adonis' report (CC&B) versus Chrstina Intollect report is counting SA.
2020 customer data is as of 9/3/20. Did not run report at 6/30/20.

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
ROLE OF OUTSTANDING DEBT AND MISCELLANEOUS DEMOGRAPHIC INFORMATION**

Fiscal Year	Debt (In 000's)	Population*	Personal Income***	Percentage of		# of MSD Employees	# of MSD Service Connections	Miles of Sewer Line
				Personal Income	Unemployment Rate**			
2011	\$ 1,851,655	746,372	\$ 31,154,544	5.94%	9.9%	655	230,240	3,200
2012	\$ 1,834,691	750,828	\$ 32,592,092	5.63%	8.4%	666	235,136	3,232
2013	\$ 1,790,715	756,832	\$ 33,314,513	5.38%	8.2%	649	239,334	3,240
2014	\$ 1,867,089	760,026	\$ 34,609,792	5.39%	6.4%	606	240,174	3,263
2015	\$ 1,902,110	763,623	\$ 34,575,582	5.50%	4.9%	591	253,462	3,288
2016	\$ 2,050,444	764,378	\$ 36,517,217	5.62%	4.6%	617	280,063	3,293
2017	\$ 2,167,901	765,352	\$ 37,813,140	5.73%	4.6%	626	280,489	3,322
2018	\$ 2,315,569	770,517	\$ 40,017,970	5.79%	4.2%	632	283,936	3,463
2019	\$ 2,386,059	766,757	N/A	N/A	4.2%	645	279,408	3,348
2020	\$ 2,498,264	N/A	N/A	N/A	6.4%	675	280,309	3,488

*Source: U.S. Census Bureau (<https://www.census.gov/quickfacts/fact/table/jeffersoncountykentucky/PST045216>)

**Source: U.S. Bureau of Labor Statistics (https://www.bls.gov/eag/eag.ky_louisville_msa.htm)

***Source: Bureau of Economic Analysis website (www.bea.gov)

**LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
TOP 10 WASTEWATER AND DRAINAGE CUSTOMERS**

Rank	Customer Name	FY '20 Wastewater Billed	Percent Total Wastewater Revenue
1	Heaven Hill Distilleries	\$ 3,794,811	1.60%
2	Lubrizol Advanced Material	2,484,802	1.04%
3	Swift Pork Co.	1,824,854	0.77%
4	The Chemours Company FC LLC	1,708,171	0.72%
5	Early Times Distillery	1,133,691	0.48%
6	Ford Motor Co.	856,205	0.36%
7	Rohm & Haas	848,525	0.36%
8	Ford Motor Co.	841,538	0.35%
9	Haier US Appliance Solutions	791,125	0.33%
10	Clariant Corporation	663,981	0.28%
Total		14,947,703	6.29%
Total FY 20 Wastewater Revenue:		\$ 237,807,086	

Rank	Customer Name	FY '19 Wastewater Billed	Percent Total Wastewater Revenue
1	Lubrizol Advanced Material	\$ 2,624,019	1.10%
2	Heaven Hill Distilleries	2,534,543	1.07%
3	Swift Pork Co.	1,682,013	0.71%
4	Ford Motor Co.	936,605	0.39%
5	Haier US Appliance Solutions	905,940	0.38%
6	Early Times Distillery	904,479	0.38%
7	Ford Motor Co.	699,736	0.29%
8	Rohm & Haas	684,947	0.29%
9	UPS Air District	471,240	0.20%
10	Louisville Metro Housing Authority	439,959	0.19%
Total		11,883,482	5.00%
Total FY 19 Wastewater Revenue:		\$ 219,467,413	

Rank	Customer Name	FY '20 Drainage Billed	Percent Total Drainage Revenue
1	Regional Airport Authority	\$ 1,456,296	1.94%
2	United Parcel Service	891,547	1.19%
3	Jeff Co Bd of Ed	801,474	1.07%
4	Ford Motor Co.	407,035	0.54%
5	LIT Industrial Limited Partner	308,182	0.41%
6	Kentucky State Fair	288,484	0.38%
7	Regional Airport Authority	286,371	0.38%
8	University of Louisville	264,526	0.35%
9	Seaboard System RR-00822	245,945	0.33%
10	Churchill Downs Inc	244,642	0.33%
Total		5,194,502	6.92%
Total FY 20 Drainage Revenue:		\$ 75,051,622	

Rank	Customer Name	FY '19 Drainage Billed	Percent Total Drainage Revenue
1	Regional Airport Authority - Standiford	\$ 1,383,778	1.84%
2	United Parcel Service	647,327	0.86%
3	Ford Motor Co	380,467	0.51%
4	Lit Industrial Limited Partner	288,795	0.38%
5	Regional Airport Authority - Bowman	269,386	0.36%
6	Kentucky State Fair	268,485	0.36%
7	The U of L Campus	244,840	0.33%
8	Seaboard Systems	230,126	0.31%
9	Churchill Downs	222,877	0.30%
10	Lou Jeff County Redev Auth	206,864	0.28%
Total		4,142,945	5.52%
Total FY 19 Drainage Revenue:		\$ 69,705,739	



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