NEW ISSUE **RATINGS: See "RATINGS" herein**

In the opinion of Bond Counsel for the Series 2017 Notes (defined below), based upon an analysis of laws, regulations, rulings and court decisions, and assuming continuing compliance with certain covenants made by the District, and subject to the conditions and limitations set forth herein under the caption "TAX EXEMPTION," interest on the Series 2017 Notes is excludable from gross income for Federal income tax purposes and is not a specific item of tax preference for purposes of the Federal individual or corporate alternative minimum taxes. Interest on the Series 2017 Notes is exempt from Kentucky income tax and the Series 2017 Notes are exempt from ad valorem taxation by the Commonwealth of Kentucky and any of its political subdivisions. See "TAX EXEMPTION" herein.

$226,340,000
LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
SEWER AND DRAINAGE SYSTEM
SUBORDINATED BOND ANTICIPATION NOTES, SERIES 2017

Dated: Date of Delivery **Due Date: November 12, 2018**
Interest Rate: 5.00% **Priced to Yield: 1.00%**
CUSIP: 546589 J78

Interest on the Series 2017 Notes is payable from their dated date at maturity on November 12, 2018.

The above-captioned notes (the "Series 2017 Notes") are being issued pursuant to the provisions of Chapters 58, 65 and 76 of the Kentucky Revised Statutes, as amended (collectively, the "Act") and a Subordinated Debt Resolution adopted by the District on April 26, 2010, as supplemented by a Subordinate Debt Sale Resolution adopted by the District on August 28, 2017 (collectively, the "Note Resolution"). The holders of the Series 2017 Notes shall have a lien on and security interest in the revenues of the District derived from the operation of the District's sewer and drainage system (the "System"), subject and subordinate, however, to the lien thereon granted to the holders of certain bonds and other indebtedness issued, or to be issued, under the provisions of the District's Revenue Bond Resolution adopted on December 7, 1992, as amended March 4, 1993, June 30, 1993, December 14, 1994, January 25, 1996, and February 24, 2003, and as further supplemented and amended from time to time (collectively, the "Bond Resolution"). See "SECURITY AND SOURCE OF PAYMENT FOR THE SERIES 2017 NOTES" herein.

The Series 2017 Notes will be fully registered notes in denominations of $5,000 or any integral multiple thereof without coupons. The Series 2017 Notes will be issuable under a book entry system, registered in the name of The Depository Trust Company ("DTC") or its nominee. There will be no distribution of the Series 2017 Notes to the ultimate purchasers. See "THE SERIES 2017 NOTES" - Book Entry System" and APPENDIX E herein. Principal and interest on the Series 2017 Notes is payable at the principal office of The Bank of New York Mellon Trust Company, N.A, as Bond Registrar and Paying Agent (the "Paying Agent and Registrar").

The Series 2017 Notes are not subject to redemption prior to maturity.

The Series 2017 Notes are special and limited revenue obligations of the District and do not constitute a debt, liability or general obligation of the District, the Commonwealth of Kentucky or any political subdivision or taxing authority thereof, including the Louisville/Jefferson County Metro Government, the County of Jefferson, Kentucky, within the meaning of the Constitution and laws of the Commonwealth of Kentucky. See "SECURITY AND SOURCE OF PAYMENT FOR THE SERIES 2017 NOTES" herein.

The District deems this Official Statement to be final for purposes of Security and Exchange Commission Rule 15c2-12.

The Series 2017 Notes are offered when, as and if issued, subject to the approving legal opinion of Dinsmore & Shohl LLP, Bond Counsel, Covington, Kentucky. Certain legal matters have been passed upon for the District by its General Counsel, Paula M. Purifoy, Esq. The Series 2017 Notes are expected to be available for delivery on or about November 14, 2017.

Citigroup

Dated: October 11, 2017

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT

Board Members
Cyndi Caudill, Chair
Daniel Arbough, Vice Chair
Andrew Bailey
Jason Williams
Joyce Horton Mott
John Phelps
J.T. Sims
Marita Willis

Executive Director
James A. “Tony” Parrott

Chief Financial Officer, Secretary Treasurer
Chad Collier

Chief of Operations
Brian Bingham

Chief Engineer
Angela Akridge

General Counsel
Paula Purifoy, Esq.

CERTIFIED PUBLIC ACCOUNTANTS
Crowe Horwath LLP
Louisville, Kentucky

BOND COUNSEL
Dinsmore & Shohl LLP
Covington, Kentucky

FINANCIAL ADVISOR
J.J.B. Hilliard, W.L. Lyons, LLC
Louisville, Kentucky

PAYING AGENT AND REGISTRAR
The Bank of New York Mellon Trust Company, N.A
Louisville, Kentucky

REGARDING THIS OFFICIAL STATEMENT

This Official Statement, which includes the cover page, has been prepared by officials of the Louisville and Jefferson County Metropolitan Sewer District (the "District") in connection with the sale by the District of $226,340,000 aggregate principal amount of Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2017 of the District. Certain information concerning the authorization, purpose, terms, conditions of sale and sources of payment of, and security for, the Series 2017 Notes is described herein. Insofar as such information embodies statements of opinion, or estimates, even if not so labeled, it should be regarded as suggesting independent investigation or consultation of other sources prior to making investment decisions. Certain information may not be the most current that is available; however, attempts were made to date and document sources of information.

No dealer, broker, salesman or other person has been authorized by the District to give any information or to make any representation, other than those contained in this Official Statement, and, if given or made, such other information or representations must not be relied upon as having been given by the District. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Series 2017 Notes by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the District since the date hereof.

Neither this Official Statement nor any verbal or written representations by or on behalf of the District before sale of the Series 2017 Notes should be regarded as part of the contract with the holders from time to time of the District's Series 2017 Notes.

All financial and other information presented herein has been provided by the District from its records, except for information expressly attributed to other sources. It is intended to show recent historic information, and is not intended to indicate future or continuing trends in the financial position or other affairs of the District. No representation is made that past experience, as might be shown by such financial and other information, will necessarily continue or be repeated in the future.

Insofar as the statements contained in this Official Statement involve matters of opinion or estimates, even if not expressly stated as such, such statements are made as such and not as representations of fact or certainty, no representation is made that any of such statements have been or will be realized, and such statements should be regarded as suggesting independent investigation or consultation of other sources prior to the making of investment decisions. Certain information may not be current; however, attempts were made to date and document sources of information. Neither this Official Statement nor any oral or written representations by or on behalf of the District preliminary to sale of the Bonds should be regarded as part of the District's contract with the successful bidder or the holders from time to time of the Bonds.

References herein to provisions of Kentucky law, whether codified in the Kentucky Revised Statutes ("KRS") or uncodified, or of the Kentucky Constitution, are references to such provisions as they presently exist. Any of those provisions may from time to time be amended, repealed or supplemented.

As used in this Official Statement, "debt service" means principal of and interest on the obligations referred to, and "Commonwealth" or "Kentucky" means the Commonwealth of Kentucky.

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$226,340,000
LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
SEWER AND DRAINAGE SYSTEM SUBORDINATED BOND ANTICIPATION NOTES, SERIES 2017

INTRODUCTION

The purpose of this Official Statement, which includes the cover page and appendices hereto, is to provide certain information with respect to the issuance of the Series 2017 Notes.

This introduction is not a summary of this Official Statement. It is only a brief description of and guide to, and is qualified by, more complete and detailed information contained in the entire Official Statement, including the cover page and appendices hereto, and the documents summarized or described herein. A full review should be made of the entire Official Statement. The offering of the Series 2017 Notes to potential investors is made only by means of the entire Official Statement.

Any capitalized terms not otherwise defined in this Official Statement shall have the meaning ascribed to them in "Appendix A – Definitions of Certain Terms and Summary of Provisions of the Bond Resolution and Note Resolution."

The District

The Series 2017 Notes are being issued by the Louisville and Jefferson County Metropolitan Sewer District (the "District"), a public body corporate and politic and a political subdivision of the Commonwealth of Kentucky.

The District was created pursuant to the Act in 1946 to provide adequate sewer and drainage facilities and service in and around the City of Louisville, Kentucky (the "City") and within Jefferson County, Kentucky (the "County"). In 1987, the District became the sole local authority for providing flood control and storm water drainage services in a drainage service area which included the City of Louisville, many small incorporated areas, and portions of the unincorporated areas of the County (collectively hereinafter referred to as the "Drainage Service Area"). Substantially all the governmental and corporate functions of the City and the County merged effective January 6, 2003 into a single consolidated local government known as Louisville/Jefferson County Metro Government. The consolidated local government replaced and superseded the governments of the City and the County. The City no longer exists as an independent legal entity.

Purpose of the Series 2017 Notes

The proceeds of the Series 2017 Notes will be used to: (i) pay the costs of issuing the Series 2017 Notes and (ii) refund and retire on November 14, 2017 the District's outstanding Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2016 (the "Prior Notes"). To the extent unexpected excess proceeds from the Series 2017 Notes are received, such additional proceeds will be used to pay the costs of improvements to the District's sewer and drainage system (the "System"), including (a) wastewater and drainage system expansion and improvements; (b) improvements to wastewater treatment facilities; (c) rehabilitation of combined sewer overflow systems; (d) improvements to flood control and drainage facilities; (e) drainage and District improvements; (f) construction of collector sewers (g) construction and improvements of detention and retention basins, (h) construction of interceptor sewers; (i) combined sewer overflow and sanitary overflow abatement projects; (j) construction and improvements to force mains; (k) repairs and improvements to District pumping stations; (l) construction of regional storage facilities; and (m) miscellaneous improvements and acquisition of equipment and mapping hardware and software (collectively, the "Series 2017 Project").

The Series 2017 Project is part of the District's overall capital improvement program, which is more fully described in the Consulting Engineer's Report attached hereto as Appendix F.

Security and Source of Payment for the Series 2017 Notes

Pursuant to the provisions of Chapters 58, 65 and 76 of the Kentucky Revised Statutes, as amended (the "Act") and a Subordinated Debt Resolution adopted by the District on April 26, 2010, as supplemented by a Subordinate Debt Sale Resolution adopted by the District on August 28, 2017 (collectively, the "Note Resolution"), the District has pledged to the payment of the principal of, premium, if any, and interest on the Series 2017 Notes as and when same shall become due and payable: (i) the proceeds of the Series 2017 Notes pending their application pursuant to the Note Resolution, (ii) the proceeds of the sale of bonds the District expects to issue to retire the Series 2017 Notes at maturity, (iii) all Revenues, (iv) all amounts on deposit in the Funds or Accounts established under the Bond Resolution (as hereinafter defined) or the Note Resolution, except amounts required to be rebated to the United State Treasury, (iv) such other amounts as may be pledged from time to time by the District as security for the Series 2017 Notes, and (vi) all proceeds of the foregoing.

THE SERIES 2017 NOTES ARE SECURED ON A BASIS INFERIOR AND SUBORDINATE TO BONDS AND OTHER OBLIGATIONS HERETOFORE ISSUED, OR TO BE ISSUED, AND SECURED BY A FIRST LIEN PLEDGE ON THE PLEDGED PROPERTY PURSUANT TO THE BOND RESOLUTION ADOPTED BY THE DISTRICT ON DECEMBER 7, 1992, AS AMENDED MARCH 4, 1993, JUNE 30, 1993, DECEMBER 14, 1994, JANUARY 25, 1996, AND FEBRUARY 24, 2003, AND AS FURTHER SUPPLEMENTED OR AMENDED FROM TIME TO TIME (COLLECTIVELY, THE "BOND RESOLUTION").

THE SERIES 2017 NOTES DO NOT CONSTITUTE AN INDEBTEDNESS OF THE DISTRICT, THE COMMONWEALTH OF KENTUCKY OR ANY POLITICAL SUBDIVISION OR TAXING AUTHORITY THEREOF, INCLUDING THE LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT AND THE COUNTY OF JEFFERSON, KENTUCKY, WITHIN THE MEANING OF THE CONSTITUTION OF THE COMMONWEALTH OF KENTUCKY. THE SERIES 2017 NOTES ARE PAYABLE SOLELY FROM THE REVENUES OF THE SYSTEM AND THE ASSETS AND REVENUES PLEDGED THEREFORE UNDER THE RESOLUTION, AND NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE DISTRICT, THE COMMONWEALTH OF KENTUCKY OR ANY POLITICAL SUBDIVISION OR TAXING AUTHORITY THEREOF, INCLUDING THE LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT AND OR THE COUNTY OF JEFFERSON, KENTUCKY, IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, AND INTEREST ON THE SERIES 2017 NOTES. THE DISTRICT HAS NO TAXING POWER. (SEE "SECURITY AND SOURCE OF PAYMENT FOR THE SERIES 2017 NOTES," herein).

Description of the Series 2017 Notes

No Early Redemption. The Series 2017 Notes are not subject to redemption prior to their maturity (see "THE SERIES 2017 NOTES – Redemption," herein).

Denominations. The Series 2017 Notes will be issued in principal amounts of $5,000 and integral multiples thereof.

Book Entry. The Series 2017 Notes are issuable only as fully registered Series 2017 Notes, without coupons. The Series 2017 Notes, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York, which will act as securities depository for the Series 2017 Notes. Purchasers will not receive certificates representing their ownership interest in the Series 2017 Notes purchased. So long as DTC or its nominee is the registered owner of the Series 2017 Notes, payments of the principal of and interest due on the Series 2017 Notes will be made directly to DTC. Principal of, redemption premium, if any, and interest on the Series 2017 Notes will be paid directly to DTC by The Bank of New York Mellon Trust Company, N.A, as Paying Agent and Registrar (the "Paying Agent" and "Registrar"). See "BOOK-ENTRY SYSTEM" and APPENDIX E - "Book-Entry Only System" herein.

Interest. The Series 2017 Notes will bear interest at the rates set forth on the cover hereof, payable at maturity on November 12, 2018. Interest will be computed on the basis of a 360-day year and twelve thirty-day months, accrued from the date of delivery.

Tax Exemption

Under the laws, regulations, rulings and judicial decisions in effect as of the date hereof, interest, including original issue discount, if any, on the Series 2017 Notes is excludible from gross income for Federal income tax purposes, pursuant to the Internal Revenue Code of 1986, as amended (the "Code"). Interest on the Series 2017 Notes will not be treated as a specific item of tax preference, under Section 57(a)(5) of the Code, in computing the alternative minimum tax for individuals and corporations. In rendering the opinions in this paragraph regarding the Series 2017 Notes, Bond Counsel has assumed continuing compliance with certain covenants designed to meet the requirements of Section 103 of the Code. Bond Counsel expresses no other opinion as to the federal tax consequences of purchasing, holding or disposing of the Series 2017 Notes. Interest on the Series 2017 Notes is exempt from income taxation and the Series 2017 Notes are exempt from ad valorem taxation by the Commonwealth of Kentucky and any of its political subdivisions.

The District has ***not*** designated the Series 2017 Notes as "qualified tax exempt obligations" with respect to certain financial institutions under Section 265 of the Code. See Appendix D hereto for the form of the opinion Bond Counsel proposes to deliver in connection with the Series 2017 Notes.

Parties to the Issuance of the Series 2017 Notes

The Paying Agent and Registrar for the Series 2017 Notes is The Bank of New York Mellon Trust Company, N.A. Legal matters incidence to the issuance of the Series 2017 Notes and with regard to the tax-exempt status of the interest thereon are subject to the approving legal opinion of Dinsmore & Shohl LLP, Covington, Kentucky, Bond Counsel. Certain legal matters will be passed upon for the District by its General Counsel, Paula M. Purifoy, Esq. The financial advisor to the District with regard to the issuance of the Series 2017 Notes is J.J.B. Hilliard, W.L. Lyons, LLC, Louisville, Kentucky.

Authority for Issuance

Authority for the issuance of the Series 2017 Notes is provided by Chapters 58, 65 and 76 of the Kentucky Revised Statutes (the "Act") and the Note Resolution.

Offering and Delivery of the Series 2017 Notes

The Series 2017 Notes are offered when, as and if issued by the District. The Series 2017 Notes will be delivered on or about November 14, 2017 in New York, New York through the Depository Trust Company (DTC).

Disclosure Information

This Official Statement speaks only as of its date, and the information contained herein is subject to change. This Official Statement and continuing disclosure documents of the District are intended to be made available through one or more repositories. Copies of the basic documentation relating to the Series 2017 Notes, including the Note Resolution and the note form, are available from the District.

The District has deemed this Official Statement to be final for the purposes of Securities and Exchange Commission Rule 15c2-12.

Additional Information

Additional information concerning this Official Statement, as well as copies of the basic documentation relating to the Series 2017 Notes, is available from J.J.B. Hilliard, W.L. Lyons, LLC, Financial Advisor to the District, 500 West Jefferson Street, Suite 700, Louisville, Kentucky 40202, Telephone (502) 588-1124.

Brief descriptions of the Series 2017 Notes, security for the Series 2017 Notes, the District, the System and the Resolution are included in this Official Statement. Certain information with respect to the District is included in Appendices hereto. Capitalized terms not otherwise defined herein shall have the meanings assigned to them in the Resolution. All summaries herein of documents and agreements are qualified in their entirety by reference to such documents and agreements, copies of which are available at the office of the District.

THE SERIES 2017 NOTES

General

The Series 2017 Notes are to be issued only as fully registered notes in denominations of $5,000 or any integral multiple thereof without coupons. The Series 2017 Notes will be dated their date of delivery, will bear interest from that date as described herein, payable at maturity on November 12, 2018.

The Series 2017 Notes shall be payable at the principal office of the Paying Agent and Registrar with respect to principal or premium, if any, in any coin or currency of the United States of America which at the time of payment is legal tender for the payment of public or private debts. All interest will be payable at maturity by check of the Paying Agent mailed to such registered owner who shall appear as of the close of business on the fifteenth day (or if such day shall not be a business day, the preceding business day) of the calendar month next preceding such maturity date on the registration books of the District maintained by the Registrar, or if the registered owner shall be the registered owner of Series 2017 Notes in the aggregate principal amount of $1,000,000 or more, by wire transfer, if the registered owner has requested payment in such manner at such wire address as shall have been furnished by the registered owner on or prior to the fifteenth day next preceding the maturity date of the Series 2017 Notes (or if such date shall not be a business day, the next succeeding business day).

Each registered Series 2017 Note shall be transferable only upon the books of the Registrar, at the request of the registered owner thereof or by his authorized attorney upon surrender thereof together with an assignment satisfactory to the Registrar duly executed by the registered owner or his duly authorized attorney. Upon the transfer of any such Series 2017 Note, the District shall issue in the name of the transferee a new registered Series 2017 Note of the same aggregate principal amount, series and maturity as the surrendered Series 2017 Note. If any Series 2017 Note is mutilated, lost, stolen or destroyed, the District will execute and deliver a new Series 2017 Note in accordance with the Note Resolution.

No Early Redemption

The Series 2017 Notes are not subject to redemption prior to their stated maturity.

Book Entry System

The Series 2017 Notes initially will be issued solely in book entry form to be held in the book-entry only system maintained by DTC. So long as such book-entry system is used, only DTC will receive or have the right to receive physical delivery of Series 2017 Notes and Beneficial Owners will not be or be considered to be, and will not have any rights as, owners or holders of the Series 2017 Notes under the Note Resolution. For additional information about DTC and the book-entry-only system see "APPENDIX E – Book-Entry Only System."

THE INFORMATION IN THIS SECTION AND IN APPENDIX E CONCERNING DTC AND DTC'S BOOK-ENTRY SYSTEM HAS BEEN OBTAINED FROM SOURCES THAT THE DISTRICT BELIEVES TO BE RELIABLE, BUT THE DISTRICT TAKES NO RESPONSIBILITY FOR THE ACCURACY THEREOF.

Exchange and Transfer

The registration of any Series 2017 Note may be transferred only upon the books of the District kept by the Registrar, by the owner thereof, in person or by his or her attorney duly authorized in writing, upon surrender of such Series 2017 Note at the corporate trust office of the Registrar accompanied by a written instrument of transfer satisfactory to the Registrar and duly executed by the owner or by his or her duly authorized attorney. Any Bond may be exchanged at the corporate trust office of the Registrar for new Series 2017 Notes of any authorized denomination and of the same aggregate principal amount and Series and maturity as the surrendered Series 2017 Note. The Registrar will not charge for any new bond issued upon any transfer or exchange, but may require the owner requesting such exchange to pay any tax, fee or other governmental charge required to be paid with respect to such exchange or transfer. Neither the District nor the Registrar is required (a) to exchange or transfer any Bond during the period commencing on the fifteenth day of the month preceding an interest payment date and ending on such interest payment date.

SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2017 NOTES

The Series 2017 Notes are special and limited obligations of the District payable solely from and secured as to the payment of the principal and interest thereon, in accordance with their terms and the provisions of the Note Resolution solely by, the Pledged Property which is defined by the Note Resolution to be the proceeds of the sale of the Series 2017 Notes, the proceeds of the sale of bonds the District expects to issue to retire the Series 2017 Notes at maturity, all Revenues, all amounts on deposit in the Funds or Accounts established under the Bond Resolution or Note Resolution, except amounts required to be rebated to the United State Treasury, such other amounts as may be pledged from time to time by the District as security for the payment of bonds, notes or other evidences of indebtedness authenticated and delivered pursuant to the Bond Resolution or Note Resolution, and all proceeds of the foregoing.

The Series 2017 Notes are secured by and payable solely from pledged revenues derived from the collection of rates, rents and charges for the services rendered by the System as set forth in the Resolution. The Series 2017 Notes do not constitute an indebtedness of the Louisville/Jefferson County Metro Government or the County of Jefferson, Kentucky.

THE SERIES 2017 NOTES ARE SECURED ON A BASIS INFERIOR AND SUBORDINATE TO BONDS AND OTHER OBLIGATIONS HERETOFORE ISSUED, OR TO BE ISSUED, AND SECURED BY A FIRST LIEN PLEDGE ON THE PLEDGED PROPERTY PURSUANT TO THE BOND RESOLUTION ADOPTED BY THE DISTRICT ON DECEMBER 7, 1992, AS AMENDED MARCH 4, 1993, JUNE 30, 1993, DECEMBER 14, 1994, JANUARY 25, 1996, AND FEBRUARY 24, 2003, AND AS FURTHER SUPPLEMENTED OR AMENDED FROM TIME TO TIME (COLLECTIVELY, THE "BOND RESOLUTION").

The District has heretofore issued its Sewer and Drainage System Revenue Bonds outstanding in the amounts shown below (the "Outstanding Bonds"), each series of which ranks on a basis superior to the Series 2017 Notes as to the pledge of Pledged Property.

Series	Dated Date	Original Principal Amount	Principal Amount Outstanding[1]
Series 2008A[2]	May 1, 2008	$105,000,000	$65,520,000
Series 2009A[3]	May 15, 2009	76,275,000	13,040,000
Series 2009B[4]	August 15, 2009	225,770,000	69,725,000
Series 2009C	November 24, 2009	180,000,000	180,000,000
Series 2010A	November 30, 2010	330,000,000	330,000,000
Series 2011A	August 24, 2011	263,360,000	252,610,000
Series 2013A	May 23, 2013	115,790,000	115,790,000
Series 2013B	May 23, 2013	119,515,000	116,940,000
Series 2013C	November 27, 2013	100,000,000	99,625,000
Series 2014A	November 25, 2014	80,000,000	79,900,000
Series 2015A	October 21, 2015	175,000,000	174,280,000
Series 2015B	October 21, 2015	81,750,000	79,085,000
Series 2016A	August 30, 2016	150,000,000	150,000,000
Series 2016B	August 30, 2016	28,315,000	28,095,000
Series 2016C	August 30, 2016	67,685,000	67,685,000
Series 2017A	August 22, 2017	175,000,000	175,000,000
Series 2017B	August 29, 2017	35,725,000	35,725,000
	Total	$2,309,185,000	$2,033,020,000

(1) As of October 1, 2017
(2) Principal maturities from May 15, 2019 through May 15, 2036 were refunded with Series 2016B Bonds
(3) Principal maturities from May 15, 2020 through May 15, 2022 were refunded with Series 2016C Bonds
(4) A portion of principal maturities from May 15, 2020 through May 15, 2023 were refunded with Series 2016C Bonds

As provided in the Bond Resolution, Additional Bonds may be issued on a parity with the Outstanding Bonds to finance the Cost of Acquisition and Construction of Additional Facilities upon the satisfaction of certain conditions. The Bond Resolution further provided that Refunding Bonds may be issued from time to time to refund outstanding obligations. The Series 2017 Notes would be inferior and subordinate as to the pledge of the Pledged Property with respect to any such Additional Bonds or Refunding Bonds issued on a parity with the Outstanding Bonds. The District recently issued $175,000,000 of Additional Bonds designated as its Sewer and Drainage System Revenue Bonds, Series 2017A (the “Series 2017A Bonds”) and $35,725,000 of Refunding Bonds designated as its Sewer and Drainage System Revenue Refunding Bonds, Series 2017B (the “Series 2017B Bonds”) and anticipates the future issuance of Additional Bonds in connection with the District’s Capital Improvement Program described in "Appendix F - Consulting Engineer's Report." Furthermore, the District anticipates issuing Additional Bonds to retire the Series 2017 Notes at maturity. For additional information relating to the conditions for the issuance of Additional Bonds see Appendix A – Definitions of Certain Terms and Summary of Provisions of the Bond Resolution and Note Resolution- Summary of Certain Provisions of the Bond Resolution – Additional Bonds".

SWAPS, SUBORDINATED DEBT, AND OTHER FINANCIAL INSTRUMENTS

General

The District has entered into interest rate swap agreements with two counterparties as part of the management of its outstanding debt. Generally, each interest rate swap agreement calls for periodic net payments from or to the District depending upon whether a specified market interest rate index is above or below a specified fixed rate or another specified market interest rate index during that period. Each such swap agreement allows the District, at its option, to terminate the agreement at any time. Upon any such termination, a termination payment is to be made, calculated based on the mark-to-market value of the swap agreement plus dealer's spread. The swap agreements provide that under certain circumstances the counterparty to the swap agreement (but not the District) may be required to post collateral, depending upon the credit rating of that counterparty, with the amount of collateral required based on the mark-to-market value of the swap. The interest rate swap agreements entered into by the District provide that the counterparties to the agreements must post collateral if their respective ratings fall below A+/A 1. The agreements also provide the counterparties the right to terminate the agreements if the District's unenhanced bond rating is downgraded below BBB/Baa. The District's obligations under all of its outstanding swap agreements are unsecured and subordinate to all Bonds issued and outstanding under the Bond Resolution. Certain provisions of the District's outstanding swap agreements are summarized below.

The Bond Resolution permits the District to issue Senior Subordinated Debt secured by Revenues of the System, subject to the prior and senior lien on such Revenues of all Bonds issued and outstanding under the Bond Resolution. The decision of the District from time to time whether to issue Senior Subordinated Debt or Bonds depends, among other things, upon its assessment of market conditions at the time of issuance.

The District has previously issued Senior Subordinated Debt to provide interim financing for capital projects. Each series of Senior Subordinated Debt previously issued has been retired from the proceeds of Bonds issued under the Bond Resolution.

The District has from time to time entered into agreements with various counterparties to provide for the investment of amounts in various funds established under the Bond Resolution. Generally such agreements provide for the investment of funds at a contractually fixed rate of return to the District during their respective terms and provisions for termination, at the option of the District, based on payment of a termination fee determined based on the mark-to-market value of the contract plus dealer's spread.

The District reserves the right to enter into, amend, and terminate any existing or future interest rate swap transactions or other agreements or derivative transactions, from time to time, as part of its overall debt, investment or general management strategy. See also "APPENDIX A — Definitions of Certain Terms and Summary of Provisions of the Bond Resolution and Note Resolution".

Floating-to-Fixed Swap

In 2001, the District entered into two forward-starting interest rate swaps (the "1999 Swaps") pursuant to which beginning in November 2009 the District would pay a fixed rate of 4.4215% and receive 67% of the 30-day LIBOR index on a notional amount corresponding to the approximate amount needed to refund the District's Series 1999 Bonds. The District's original strategy in entering into the 1999 Swaps was to "lock in" a fixed rate for the variable rate debt that could be issued in 2009 to refund the Series 1999 Bonds. In August 2009, the District decided instead to refund the Series 1999 Bonds with proceeds of its fixed-rate Series 2009B Bonds and its fixed rate Series 2009A Notes. The Series 2009A Notes have since been refunded by the fixed-rate Series 2010A Notes which were currently refunded by the Series 2011A Notes, which were then in turn refunded by the Series 2011B Notes. The Series 2011B Notes were subsequently currently refunded by the Series 2012A Notes, which in turn were currently refunded by subsequent sequential series of refunding notes, the latest in such series of refunding notes being the currently outstanding Series 2016 Notes. The Series 2016 Notes are expected to be currently refunded with the proceeds of the Series 2017 Notes.

In August 2009, the District reversed that portion of the 1999 Swaps which corresponded in amount and amortization schedule to the portion of the Series 2009B Bonds used to refund the Series 1999 Bonds. The reversed portions of the 1999 Swap were subsequently terminated in April 2013. The only portion of the 1999 Swaps that remain in effect is the non-reversed portion of the 1999 Swaps, which amortizes in amounts that correspond with the expected maturity structure of a future hypothetical bond issue the District may issue to permanently refinance the Series 2017 Notes when issued. The District's expectation is that variable payments received under the non-reversed portion of the 1999 Swaps will hedge future interest rate movements for any fixed-rate Bonds hereafter issued under the Resolution (or any other fixed rate renewal notes hereafter issued under the Subordinated Debt Resolution) to refinance the Series 2017 Notes. As of June 30, 2017 the estimated aggregate mark-to-market value of the non-reversed portion of the 1999 Swaps was approximately negative $75,759,691.

THE DISTRICT

General

The District was created and established pursuant to the Act, as a public body corporate, in 1946, in the interest of the public health and for the purpose of providing adequate sewer and drainage facilities. The District had complete jurisdiction, control, possession, and supervision of the then existing sewer and drainage system in the City, and with the power and authority, to operate, maintain, reconstruct, and improve said sewer and drainage system and construct any additions, betterments, and extensions thereto within the limits of the District area as defined in the Act. The District assumed jurisdiction over and administration of the then existing sewer and drainage system in the City on November 16, 1946, pursuant to Ordinance No. 90, Series 1946, passed by the Board of Aldermen of the City and approved by the Mayor thereof in accordance with the requirements of the Act.

Administration and Management of the District

The business, activities, and affairs of the District are managed, controlled, and conducted by a board (the "Board"), composed of eight members, not more than five of whom shall be affiliated with the same political party. The members are appointed by the Mayor subject to the approval of the Council of the Louisville/Jefferson County Metro Government. All appointments to the Board are made for three-year terms. The present members of the Board and the expiration dates of their respective terms are as follows:

Board Members	Term Expires
Cyndi Caudill (Chair)	August 31, 2020
Daniel Arbough (Vice-Chair)	June 30, 2018
Andrew Bailey	July 31, 2018
Jason Williams	February 28, 2018
Joyce Horton Mott	Pending*
John Phelps	Pending*
J.T. Sims	August 31, 2020
Marita Willis	June 30, 2019

*Continuing in office pending the appointment of a successor

The Board has delegated and placed the conduct of the day-to-day business affairs of the District under the direction of an Executive Director supported by administrative, engineering, legal and business staffs. The District's executive staff currently consists of the following individuals:

James A. "Tony" Parrott	Executive Director
Chad Collier	Chief Financial Officer and Secretary-Treasurer
Brian Bingham	Chief of Operations
Angela Akridge	Chief Engineer
John Loechle	Director of Engineering
Paula Purifoy, Esq.	General Counsel and Legal Director
Mark (Tom) Luckett	One Water Chief Information Officer
David Johnson	Development and Stormwater Services Director
Lynne Fleming	Human Resources Director
Anthony Marconi	Operations and Support Services Director
Alex Novak	Treatment Facilities Director
Marc Thomas	Collections Systems Director
Lopez high	Facilities Safety and Security Director
Rene Thomas	Director of Procurement and Supplier Diversity

On July 27, 2015, the Board unanimously approved an employment agreement with Mr. James Parrott to serve as Executive Director of the District effective September 14, 2015 through September 13, 2018. Mr. Chad Collier and Ms. Angela Akridge similarly have employment agreements effective through September 30, 2018 and September 30, 2019, respectively.

CH2M Hill Inc., Louisville, Kentucky (the "Consulting Engineers") has been retained by the District as its consulting engineering firm. The most recent report of the Consulting Engineers is appended to this Official Statement as Appendix F.

On August 1, 2011 the Auditor of Public Accounts of the Commonwealth of Kentucky (the "State Auditor"), an elected state official, informed the District that her office was undertaking a review and evaluation of the oversight and operation of the District, focusing on the District's policies, internal controls, financial activity, and other aspects of the District's operations, including specifically review of the District's board and committee structure, policies governing the District's internal audit process and reporting to the District's Board by its staff, and the District's policies regarding business conduct, conflicts of interest, ethics, and procurement. The State Auditor offered to make recommendations to strengthen and improve the District's internal controls, oversight, and operations and to ensure the transparent and efficient use of the District's financial resources. On December 16, 2011 the State Auditor issued a report of her examination containing recommendations for the improvement of various areas of the District's governance and operations, including more detailed oversight by the Board of the District's investment policies, practices, and procedures, investment portfolio, and use of interest rate swap agreements and other financial derivatives. The District provided monthly reports to the State Auditor regarding the District's progress in the implementation of the State Auditor's recommendations. The State Auditor's report and the District's progress reports are available at: http://www.msdlouky.org/aboutmsd/audit2012.htm1. As of October 30, 2013, the District had fully implemented all of the State Auditor's recommendations.

In January, 2012 Mayor Greg Fischer of the Louisville/Jefferson County Metro Government formed the Louisville Utilities and Public Works Advisory Group (the "Advisory Group") to examine the operations of the Louisville Water Company ("Louisville Water Company", see "LOUISVILLE WATER COMPANY" below), the District, and Metro Government's Department of Public Works & Assets ("DPW") to determine whether synergies exist between the entities that would allow for improved service or reduced costs. The Advisory Group engaged Black & Veatch Corporation, an experienced consultant to the utility industry, to assist the Advisory Group's evaluation of potential business restructuring scenarios ranging from the status quo to a full consolidation of Louisville Water Company, the District, and DPW. On August 1, 2012 the consultant presented a final report to the Advisory Group, available at http://www.msdlouky.org/pdfs/TaskForce/LouisyilleAdvisoryGroupFinalReport20120801.pdf, concluding that operational efficiencies and savings could be achieved by gradually consolidating the operations and governance of Louisville Water Company, the District, and DPW within the next five years. Although the outcome of the Advisory Group's report is not presently determinable, the District believes that any actions taken as a result of the Advisory Group's findings and recommendations will not adversely affect the operations, properties, or financial condition of the District or the payment of the District's outstanding obligations in accordance with their terms.

In March of 2013, the District approved a letter of intent with the Louisville Water Company setting forth the due diligence efforts to be conducted by the parties in order to evaluate the governance, financial and environmental implications of a potential consolidation. In April 2013, the District and the Louisville Water Company formed due diligence teams to evaluate the Advisory Group’s recommendations and provide recommendations to the District’s and Louisville Water Company’s Boards and to Mayor Fischer. The final Report on Due Diligence Analysis and Recommendation was completed in February 2014. As a result of those efforts, the District and the Board of Waterworks of the Louisville/Jefferson County Metro Government entered into an Interlocal Cooperation Agreement (the "Original ILA") on March 11, 2014, as approved by the Kentucky Attorney General on March 31, 2014. The Original ILA, effective through June 30, 2033 (unless earlier terminated by either party on six months’ notice), provided for, among other items, the joint and/or cooperative development, provision, sharing and management of certain back-office, administrative and/or support services to include one or more of the following ("One Water"):

- Information Technology Services;
- Business Development Services;
- Engineering Services;
- Internal/External Communications Services;
- Finance Services;
- Risk Management Services;
- Human Resources; and
- Operations.

The goal of the ILA is to create coordinated teams of employees from both entities with the capability of delivering superior customer service at lower costs than the existing two entities combined.

On August 24, 2015, the District and the Board of Waterworks of the Louisville Water Company entered into an Amended and Restated Interlocal Cooperation Agreement (the "Amended ILA," and together with the Original ILA, the "ILA"), as approved by the Kentucky Attorney General on September 17, 2015. The Amended ILA was entered into to establish a joint administrative board known as the One Water Board and to provide for more efficient implementation and expansion of the services provided in the Original ILA. The One Water Board is a five member board consisting of two individuals from the District's Board and Board of Water Works of the Louisville Water Company and an individual appointed by Mayor Fischer. The One Water Board is responsible for the overall administration of the One Water shared and/or consolidated services program.

The ILA, as so amended, is now effective through June 30, 2035 (unless earlier terminated by either party on 180 days' notice) and is being implemented in phases. The first phase ("Phase 1") entails the sharing of services in five functional groups plus one specialty area of focus. The five functional groups addressed in this phase include Procurement, Fleet, Human Resources, Information Technology, and Customer Service. The specialty area that will be evaluated will focus on energy savings.

The One Water Initiative seeks to combine or consolidate certain back-office, administrative and support services for cost-savings and revenue opportunities. The District and Louisville Water Company continue to remain separate entities. However, One Water allows the District and Louisville Water Company to be better stewards of their rates. For instance, One Water IT purchases software for both organizations to get lower prices. The District and Louisville Water Company have also found savings with joint purchases in other areas of the organization and sharing resources for the customer call centers. Both organizations also now share contracts for parts and supplies.

Customer History

Five Year Wastewater Customer History. The District's wastewater sewer system customer history for the past five fiscal years is as follows:

Residential	Number of Customers	Volume (million gallons)	Revenue (in thousands)
FY 2013	218,352	11,760	$86,409
FY 2014	219,132	11,203	89,691
FY 2015	230,504	11,334	96,230
FY 2016	232,534	11,299	101,760
FY 2017	233,837	11,717	108,169
Commercial			
FY 2013	20,167	11,230	$57,192
FY 2014	20,588	10,805	58,812
FY 2015	22,564	10,665	61,950
FY 2016	21,613	9,340	58,117
FY 2017	22,313	10,555	61,592
Industrial			
FY 2013	455	3,293	$19,536
FY 2014	454	3,305	19,738
FY 2015	394	2,953	17,289
FY 2016	407	3,311	19,868
FY 2017	423	3,414	21,094

Source: Metropolitan Sewer District

The Drainage System

Under an interlocal government agreement effective January 1, 1987, the District became the sole local authority for providing flood control and storm water drainage services in the Drainage Service Area. The District is responsible for the operation, maintenance, replacement, improvements and additions to existing flood control facilities and public storm water drainage facilities within the Drainage Service Area. The stormwater drainage system is comprised of various types of facilities to collect, convey, retain, and discharge stormwater runoff into sewers, rivers, streams, and creeks, which eventually drain into the Ohio River. These facilities include open channels, ditches, streams, ponds, pipes, culverts, conduits, bridge structures, detention basins, retention basins, pump stations, and other facilities.

In fiscal year 2017, the District had approximately 227,873 drainage service accounts and billed 4,671,778 equivalent service units (ESUs) at $8.66 per month which provided total annual drainage charge revenues of approximately $52,819,913.

By having a single authority responsible for drainage services and a dedicated source of revenue, the community benefits by having a more efficient, cost effective drainage service program. The District's consultants have developed a Storm Water Drainage Master Plan which, after public participation and approvals by local governments, will be used by the District for implementing improvements and extensions to the existing drainage facilities.

THE SERVICE AREA

The combined area of the former City and the County ("Louisville Metro") is located in the north-central portion of the Commonwealth on the south bank of the Ohio River. Louisville Metro is the largest city in Kentucky and is the center of the Louisville Metropolitan Statistical Area (MSA) which includes, in addition to Louisville Metro, the counties of Bullitt, Oldham and Shelby, in Kentucky, and Clark, Floyd, and Harrison, in Indiana. The Louisville MSA has exhibited a nationally familiar pattern of population dispersion from its core city to the balance of Louisville Metro, and from Louisville Metro to the adjacent counties in Kentucky and Indiana.

Annual Population Estimates

	Louisville Metro(1)	Louisville MSA(2)
1970	695,000	991,801
1980	684,300	1,054,368
1990	665,200	1,058,425
2000	693,604	1,161,975
2010	741,096	1,267,691
2011	746,906	1,310,945
2014	760,026	1,269,702
2015	763,623	1,278,413
2016	765,352	1,350,207

(1) Source: Population Division, U.S. Census Bureau website: www.census.gov (Jefferson County, KY)
(2) Source: Population Division, U.S. Census Bureau website: www.census.gov (Louisville/Jefferson County, KY-IN)

Louisville Metro possesses a diverse economic base which has exhibited the national pattern of a shift away from manufacturing towards services. In 2015 the average per capita personal income in Louisville-Jefferson County as reported by the U.S. Bureau of Economic Analysis was $46,457.

Louisville Metro, Kentucky
Largest Private Employers, 2017

Company	Employment
United Parcel Service Inc.	22,354
Ford Motor Company	12,600
Humana, Inc.	12,500
Norton Healthcare, Inc.	11,944
Baptist Healthcare Systems, Inc.	6,786
Amazon.com LLC	6,500
GE Appliances, a Haier Company	6,000
KentuckyOne Health Inc.	6,000
The Kroger Co.	3,079
Manna Inc.	2,600
Source: *Business First*, July 21, 2017 edition	

Approximately 60.4% of housing units in the Louisville-Jefferson County Metro area were owner occupied in 2014. The median home price for housing units in Jefferson County, Kentucky in 2015 was $174,900. 50.87% of housing units in Kentucky were built prior to 1980. Over 91.9% of adult workers in Kentucky drive to work with an average commuting time of 23.3 minutes. (Source: U.S. Census Bureau, 2015 American Community Survey — 1 Year Estimate**).**

RATES AND CHARGES

Wastewater Service and Drainage Service Charges

The District derives its revenue for wastewater service and drainage service from the collection of rates, rentals and charges established in accordance with the provisions of the Act, for services rendered within the Service Area to customers served by the District's facilities. The District has no power to levy ad valorem taxes upon any property for any purpose whatsoever. Wastewater Service Rates, based on water consumed, are billed and collected by Louisville Water Company ("Louisville Water Company"), (a Kentucky corporation wholly owned as a public enterprise by the Louisville/Jefferson County Metro Government) for the District under terms of an agreement executed in January, 2013. These rates are billed simultaneously with the water bill on a single statement payable in total for both wastewater and water service rendered, and are subject to a late penalty of 5%. In the event of nonpayment of any such wastewater rates, rentals, or charges for a period of more than 30 days after they become due and payable, Louisville Water Company is required by law to discontinue water service. See "LOUISVILLE WATER COMPANY."

Louisville Water Company bills and collects the District's wastewater service charges. The bills are rendered bimonthly except for larger industrial/commercial accounts which are billed monthly. Louisville Water Company also bills and collects all of the District's drainage charges as additions to the water/sewer billings.

The District wastewater service rates include a fixed service charge based on the size of the public water meter serving the property plus a charge for each 1,000 gallons of water consumed on the premises. Each customer has the option of installing private meters to record water usage which does not enter the sewers. Industrial and commercial customers may use this option to obtain credit for water which does not enter the sewers. Drainage service rates are charged based on measured impervious areas with one equivalent service unit assigned for each 2,500 square feet of impervious area (residential unit).

Out of a total of 256,573 wastewater customer accounts, approximately 22 accounts have no public water meter because they are residential accounts served by well water. Such accounts are charged a fixed charge.

Rate Making Process

To amend rates, the District follows the following procedures:

(i) The Board of the District adopts and publishes a Preliminary Rate Resolution.

(ii) From date of publication, there is a 30-day period to receive comments.

(iii) Within 60 days of the publication, the Board of the District must adopt a Final Rate Resolution.

(iv) Before the new rate schedule becomes effective, the rates must be approved by the Council of the Louisville/Jefferson County Metro Government.

By the following provision within the District's approved rate ordinances, step (iv) above is not required under the conditions described below as follows:

"Whenever MSD's net revenues are less than 1.10 times the debt service on the District's outstanding revenue bonds for any consecutive six-month period, by order of the Board of the District, a schedule of wastewater service charges and storm water service charges shall be amended in order to maintain a 1.10 debt service coverage required by the District's 1971 Bond Authorizing Resolution which was approved by the City of Louisville Ordinance Number 86, Series 1971, by City of Louisville Ordinance Number 25, Series 1979, as amended by City of Louisville Ordinance Number 32, Series 1986, and City of Louisville Ordinance Number 152, Series 1979, as amended by City of Louisville Ordinance Number 388, Series 1986; provided the aggregate of such adjustments for any twelve-month period shall not generate additional revenue from wastewater service charges in excess of 7%. An explanation of proposed rate increases in excess of 4% shall be delivered to the Metro Council at least 60 days prior to approval by the District's Board. The term "net revenues" is defined as gross revenue from wastewater service charges less operating expenses and debt payments other than debt service payments on the District's outstanding revenue bonds."

An explanation of proposed rate increases in excess of 4% shall be delivered to the Council of the Louisville/Jefferson County Metro Government at least 60 days prior to approval by the District's Board.

This provision includes, by reference to "outstanding revenue bonds," all District debt service, including the debt service on the recently issued Series 2017A Bonds and any future revenue bonds which the District may issue.

Rate History

The following table summarizes the District's revenue and rate adjustments since 1987. Additional revenues from the rate increases are approximate and assume constant water usage.

Date of Rate Increase	% Rate Increase		Annual Additional Revenue from Rate Increase	% Rate Increase		Annual Additional Revenue from Rate Increase	Estimated Revenue EPA Consent Decree Surcharge
1/1/87*				N/A	0	$8,165,000	
7/1/88	4.3%	(A)	$1,496,000				
1/1/91	6.5	(A)	2,731,000				
1/1/92	4.5	(A)	1,973,000				
12/1/92				57.1%	(A)	4,879,000	
8/1/94	5.0	(B)	2,337,000				
8/1/95	7.0	(B)	3,516,000				
8/1/96	5.0	(B)	2,703,000	4.4	(A)	604,000	
8/1/97	5.0	(B)	2,772,000	4.5	(A)	663,000	
8/1/98	5.0	(B)	2,900,000	5.0	(A)	800,000	
8/1/99	5.0	(B)	3,150,000	5.0	(A)	850,000	
8/1/00	5.0	(B)	3,100,000	5.0	(A)	860,000	
8/1/01	5.0	(B)	3,313,000	5.0	(A)	921,000	
8/1/02	6.5	(B)	4,540,000	6.5	(A)	1,326,000	
8/1/03	6.5	(B)	5,012,659	6.5	(A)	1,407,505	
8/1/04	6.5	(B)	5,184,032	6.5	(A)	1,526,281	
8/1/05	6.5	(B)	5,655,634	6.5	(A)	1,671,724	
8/1/06	6.9	(B)	6,414,405	6.9	(A)	1,957,887	
8/15/07	0.0		0	0.0		0	$28,875,000(C)
8/1/08	6.5	(B)	8,017,688	6.5	(A)	2,015,401	
8/1/09	6.5	(B)	8,466,545	6.5	(A)	2,095,583	
8/1/10	6.5	(B)	8,683,175	6.5	(A)	2,246,123	
8/1/11	6.5	(B)	9,395,795	6.5	(A)	2,417,718	
8/1/12	6.5	(B)	9,705,399	6.5	(A)	2,627,897	
8/1/13	5.8	(B)	9,320,500	5.8	(A)	2,710,500	
8/1/14	5.5	(B)	9,833,128	5.5	(A)	2,859,578	
8/1/15	5.5	(B)	10,373,950	5.5	(A)	3,016,855	
8/1/16	6.9	(B)	10,733,000	6.9	(A)	3,781,000	
8/1/17	6.9	(B)	11,525,000	6.9	(A)	4,342,000	

*Initial stormwater rate: $1.75 per equivalent service unit.
(A) Across the board adjustment of all rates.
(B) Composite yield of a variety of rate adjustments.
(C) Special surcharge of $6.95 per account per month (plus additional volume charges for some commercial and industrial customers). This surcharge produces revenues equal to approximately 33% of total wastewater charges in the year it was instituted.

Source: Metropolitan Sewer District

HISTORIC AND PROJECTED REVENUES AND EXPENSES AND CAPITAL IMPROVEMENT PROGRAM

Certain historic revenues and expenses of the District for prior fiscal years and projected revenues and expenses of the District for the current and future fiscal years, with accompanying notes, are set forth in "Appendix F - Consulting Engineer's Report" attached hereto. The information on projected revenues and expenses may constitute a "forward looking statement" under federal securities law. Actual revenues, expenses, or both could differ materially from those forecasted and there can be no assurance that such estimates of future results will be achieved. For example, there can be no assurance that the Council of the Louisville/Jefferson County Metro Government will approve one or more new rate schedules as described above, or that the Council may not from time to time consider amending the District's approved rate ordinances. In general, important factors that could cause actual results to differ materially from the revenues or expenses presently estimated include, but are not limited to, material changes in the size and composition of the District's service area, unanticipated changes in law or unanticipated material litigation, efficiency of operations and the capital construction and expenditure plans and results of the District.

The projections shown in "Appendix F — Consulting Engineer's Report" are based, among other things, on the District's Capital Improvement Plan in effect as of the date of such report. Except as specifically described herein, there can be no assurance that the District will not amend or revoke the Capital Improvement Program described in "Appendix F - Consulting Engineer's Report" or that the District will issue or support bonds or other funding for the Capital Improvement Program in its current form or as amended or any substitute therefor.

LOUISVILLE WATER COMPANY

Louisville Water Company was chartered by special act of the General Assembly of Kentucky, approved March 6, 1854. The City was given authority to purchase the property at any time and also to subscribe for stock of Louisville Water Company.

The City began purchasing stock in Louisville Water Company in 1857 and had acquired substantially all the 12,571 outstanding shares by 1870, leaving only 51 shares in the hands of individual stockholders, this stock having been originally issued as directors' qualifying shares. By April 1907, all of this stock had been acquired by the City.

The affairs of Louisville Water Company were conducted by directors elected by the stockholders until passage of an act, approved March 6, 1906, creating the Board of Water Works of the City, which since that time (initially as the City, and thereafter through its successor, the Louisville/Jefferson County Metro Government) has had the responsibility for management and control of Louisville Water Company.

Since substantially all customers of the District are also customers of Louisville Water Company and Louisville Water Company already has the facilities, meters, equipment, and administrative organization for the billing and collection of charges for water service, it has proven both expedient and economical that the billing and collection of wastewater and stormwater service charges be accomplished simultaneously with and added as designated items on the bill rendered the water consumer for charges covering water service. Those sewer users who are not consumers of the public water supply are billed directly by the District.

By an agreement dated June 17, 1947, Louisville Water Company initiated billing and collection procedures for the District and has continued to perform such services to the present under subsequent agreements. Pursuant to a subsequent agreement with an effective date of July 13, 1976, as amended on November 24, 1986, such billing and collection procedures were amended to include drainage service charges. A new agreement with an effective date of January 1, 2013 is currently in place. This agreement increases the priority of drainage fees equivalent to water and sewer fees and includes the requirement that Louisville Water Company discontinue water service to those consumers whose wastewater or drainage service accounts remain unpaid thirty (30) days after the due date and to not re-establish such service until such time as all such service charges have been paid. This agreement is for a period of five years and can be terminated by either party upon two years written notice.

PLAN OF FINANCE

The proceeds of the Series 2017 Notes will be used to: (i) pay the costs of issuing the Series 2017 Notes and (ii) refund and retire on November 14, 2017 the Prior Notes. To the extent unexpected excess proceeds from the Series 2017 Notes are received, such additional proceeds will be used to pay the costs of improvements to the System.

The non-reversed portion of the 1999 Swap amortizes in amounts that correspond with the expected maturity structure of a future hypothetical bond issue the District anticipates issuing to permanently refinance the Series 2017 Notes. The District's expectation is that variable payments received under the non-reversed portion of the 1999 Swap will hedge future interest rate movements for any Bonds hereafter issued under the Bond Resolution (or any other renewal notes hereafter issued under the Note Resolution) to refinance the Series 2017 Notes. (see "SWAPS, SUBORDINATED DEBT, AND OTHER FINANCIAL INSTRUMENTS – Floating to Fixed Swap herein").

Sources and Uses of Funds

Sources	
Principal Amount of Series 2017 Notes	$226,340,000
Plus Original Issue Premium	8,913,269.20
TOTAL	$235,253,269.20
Uses	
Retirement of Prior Notes	$226,340,000
Construction Fund	8,656,121.71
Costs of Issuance	155,294.49
Underwriter’s Discount	101,853.00
TOTAL	$235,253,269.20

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Debt Service Schedule

The following table sets forth the aggregate annual debt service requirements for the District's Outstanding Bonds and Notes.

DEBT SERVICE REQUIREMENTS

Bond Year Ending	2017A Bond Principal	2017A Bond Interest	2017A Total Debt Service	2017B Bond Principal	2017B Bond Interest	2017B Total Debt Service	Existing Senior Lien Principal (1)	Existing Senior Lien Interest (1)	New Total Senior Lien Bond Debt Service	Direct Payments (2)	Net Senior Lien Bond Debt Service	Subordinated Debt Service (3)(4)(5)	Total Net Debt Service
2018	-	$5,264,004	$5,264,004.36	$1,205,000	$1,270,222	$2,475,222.22	$32,130,000.00	$88,007,106.28	$127,876,332.86	($10,217,119.50)	$117,659,213.36	$11,718,737.01	$129,377,950.37
2019	$5,730,000	7,205,481	12,935,481.26	850,000	1,726,000	2,576,000.00	33,610,000.00	86,409,056.28	135,530,537.54	(10,217,119.50)	125,313,418.04	14,019,704.00	139,333,122.04
2020	7,375,000	6,918,981	14,293,981.26	785,000	1,683,500	2,468,500.00	34,040,000.00	84,731,556.28	135,534,037.54	(10,217,119.50)	125,316,918.04	14,019,704.00	139,336,622.04
2021	6,105,000	6,550,231	12,655,231.26	830,000	1,644,250	2,474,250.00	37,295,000.00	83,111,906.28	135,536,387.54	(10,217,119.50)	125,319,268.04	14,019,704.00	139,338,972.04
2022	6,400,000	6,244,981	12,644,981.26	845,000	1,602,750	2,447,750.00	39,190,000.00	81,250,156.28	135,532,887.54	(10,217,119.50)	125,315,768.04	14,019,704.00	139,335,472.04
2023	6,110,000	5,924,981	12,034,981.26	965,000	1,560,500	2,525,500.00	41,680,000.00	79,293,656.28	135,534,137.54	(10,217,119.50)	125,317,018.04	14,015,293.58	139,332,311.62
2024	5,245,000	5,619,481	10,864,481.26	16,740,000	1,512,250	18,252,250.00	24,755,000.00	77,211,406.28	131,083,137.54	(10,986,150.00)	120,096,987.54	19,238,866.78	139,335,854.32
2025	5,470,000	5,357,231	10,827,231.26	13,505,000	675,250	14,180,250.00	30,050,000.00	76,022,206.28	131,079,687.54	(10,986,150.00)	120,093,537.54	19,239,738.78	139,333,276.32
2026	6,020,000	5,083,731	11,103,731.26	-	-	-	40,545,000.00	74,552,956.28	126,201,687.54	(10,986,150.00)	115,215,537.54	25,603,859.48	140,819,397.02
2027	5,525,000	4,782,731	10,307,731.26	-	-	-	56,510,000.00	72,660,831.28	139,478,562.54	(10,986,150.00)	128,492,412.54	12,327,478.78	140,819,891.32
2028	2,950,000	4,506,481	7,456,481.26	-	-	-	55,065,000.00	69,499,731.28	132,021,212.54	(10,220,525.00)	121,800,687.54	19,015,186.66	140,815,874.20
2029	2,990,000	4,358,981	7,348,981.26	-	-	-	57,900,000.00	66,967,900.02	132,216,881.28	(10,220,525.00)	121,996,356.28	18,817,483.12	140,813,839.40
2030	3,120,000	4,209,481	7,329,481.26	-	-	-	40,985,000.00	64,232,537.52	112,547,018.78	(10,220,525.00)	102,326,493.78	38,488,588.60	140,815,082.38
2031	3,180,000	4,084,681	7,264,681.26	-	-	-	21,235,000.00	62,382,881.28	90,882,562.54	(10,220,525.00)	80,662,037.54	60,146,812.72	140,808,850.26
2032	3,005,000	3,989,281	6,994,281.26	-	-	-	22,250,000.00	61,518,831.28	90,763,112.54	(10,220,525.00)	80,542,587.54	60,264,766.04	140,807,353.58
2033	3,015,000	3,899,131	6,914,131.26	-	-	-	23,005,000.00	60,644,925.02	90,564,056.28	(10,220,525.00)	80,343,531.28	60,461,448.84	140,804,980.12
2034	2,215,000	3,808,681	6,023,681.26	-	-	-	85,235,000.00	59,770,050.02	151,028,731.28	(10,220,525.00)	140,808,206.28	-	140,808,206.28
2035	2,280,000	3,742,231	6,022,231.26	-	-	-	89,340,000.00	55,662,812.52	151,025,043.78	(10,220,525.00)	140,804,518.78	-	140,804,518.78
2036	2,265,000	3,673,831	5,938,831.26	-	-	-	92,995,000.00	52,092,593.76	151,026,425.02	(10,220,525.00)	140,805,900.02	-	140,805,900.02
2037	1,890,000	3,605,881	5,495,881.26	-	-	-	97,340,000.00	48,193,031.26	151,028,912.52	(10,220,525.00)	140,808,387.52	-	140,808,387.52
2038	1,880,000	3,549,181	5,429,181.26	-	-	-	101,320,000.00	44,278,362.50	151,027,543.76	(10,220,525.00)	140,807,018.76	-	140,807,018.76
2039	680,000	3,492,781	4,172,781.26	-	-	-	106,795,000.00	40,168,300.00	151,136,081.26	(10,220,525.00)	140,915,556.26	-	140,915,556.26
2040	545,000	3,471,531	4,016,531.26	-	-	-	111,095,000.00	34,197,755.00	149,309,286.26	(8,393,859.26)	140,915,427.00	-	140,915,427.00
2041	540,000	3,454,500	3,994,500.00	-	-	-	115,425,000.00	27,951,150.00	147,370,650.00	(6,453,125.00)	140,917,525.00	-	140,917,525.00
2042	505,000	3,437,625	3,942,625.00	-	-	-	120,150,000.00	21,207,312.50	145,299,937.50	(4,383,859.38)	140,916,078.12	-	140,916,078.12
2043	350,000	3,421,213	3,771,212.50	-	-	-	125,190,000.00	14,189,950.00	143,151,162.50	(2,233,875.00)	140,917,287.50	-	140,917,287.50
2044	11,250,000	3,409,838	14,659,837.50	-	-	-	53,590,000.00	6,884,200.00	75,134,037.50	-	75,134,037.50	-	75,134,037.50
2045	11,530,000	2,959,838	14,489,837.50	-	-	-	55,820,000.00	4,823,950.00	75,133,787.50	-	75,133,787.50	-	75,133,787.50
2046	11,745,000	2,585,113	14,330,112.50	-	-	-	58,055,000.00	2,749,550.00	75,134,662.50	-	75,134,662.50	-	75,134,662.50
2047	31,235,000	2,203,400	33,438,400.00	-	-	-	19,700,000.00	591,000.00	53,729,400.00	-	53,729,400.00	-	53,729,400.00
2048	23,850,000	954,000	24,804,000.00	-	-	-	-	-	24,804,000.00	-	24,804,000.00	-	24,804,000.00
	$175,000,000.00	$131,769,517.08	$306,769,517.08	$35,725,000.00	$11,674,722.22	$47,399,722.22	$1,822,295,000.00	$1,601,257,661.76	$3,752,917,901.06	($249,358,335.64)	$3,503,559,565.42	$415,417,076.39	$3,943,780,641.81

Notes:

(1) Existing Senior Lien Principal and Existing Senior Lien Interest excludes the debt service of the Louisville and Jefferson County Metropolitan Sewer District Sewer and Drainage System Revenue Bonds, Series 2007A Bonds.

(2) Due to sequestration, the federal direct payments on the Louisville and Jefferson County Metropolitan Sewer District Sewer and Drainage System Revenue Bonds, Series 2009C Build America Bonds and Louisville and Jefferson County Metropolitan Sewer District Sewer and Drainage System Revenue Bonds, Series 2010A Build America Bonds were reduced by 7% for fiscal years 2018 through 2023. For fiscal years 2024 through 2043, the federal direct payments are assumed at the original rate due on the outstanding Series 2009C BABs and 2010A BABs.

(3) Includes estimated net swap payments based on 1-month LIBOR 5-year average as of June 30, 2017 (0.33%).

(4) Subordinated debt service for FY 2018 includes the net premium calculation received on the 2016 BAN. The net premium of $5,564,035.32 on the 2016 BAN was subtracted from the gross interest of $7,789,868.33 due on the 2016 BAN, resulting in a net interest payment of $2,225,833.01 for FY 2018.

(5) Does not include the principal of the Series 2016 Notes payable at maturity.

LITIGATION INVOLVING DISTRICT

The District has advised that there is no litigation or other legal proceeding pending or, to the knowledge of the District, threatened to restrain or enjoin the issuance, sale or delivery of the Series 2016 Notes or the implementation of the plan of financing described herein, or in any way contesting or affecting the validity of the Series 2016 Notes or the plan of financing described herein or any proceedings of the District taken with respect to the issuance or sale of the Series 2016 Notes, the pledge or application of any moneys or securities provided for the payment of the Series 2016 Notes or the existence or powers of the District insofar as they relate to the authorization, sale and issuance of the Series 2016 Notes or such pledge or application of moneys and securities or the implementation of the plan of financing described herein.

The District has further advised that there is no litigation or other legal proceeding pending or, to the knowledge of the District, threatened which challenges the authority of the District to operate the System or to collect revenues therefrom or which contests the creation, organization or existence of the District or the title of any of its Board members or executive staff to their respective offices.

On April 10, 2009 the United States District Court for the Western District of Kentucky, Louisville Division (the "Court"), entered an Amended Consent Decree, in Civil Action No.: 3:08-CV-00608-CRS (the "Amended Consent Decree"). The Amended Consent Decree amended, superseded and replaced the original Consent Decree entered by the Court on August 12, 2005 between the Commonwealth of Kentucky, the United States of America and the District. The Amended Consent Decree resolved all pending claims of violations of the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, and the Water Quality Act of 1987 (the "Clean Water Act") pursuant to 33 U.S.C. 1251 et seq. and the regulations promulgated thereunder.

By entering into the Amended Consent Decree the District neither admitted nor denied the alleged violations described therein but did acknowledge that sanitary sewer overflows and unauthorized discharges have occurred and the District accepted the obligations imposed under the Amended Consent Decree. To date, the District has complied with all submittals and reporting requirements contained in the Amended Consent Decree. A copy of the Amended Consent Decree is available at the offices of the District. The District intends to perform all Capital Improvement Program and other 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 approximately $850 million, of which approximately $400 million has been spent using proceeds of the District's Sewer and Drainage System Revenue Bonds, Series 2008, Series 2009C, Series 2010A and Series 2013C. The Amended Consent Decree contains stipulated penalties for the District's failure to comply with provisions contained in the Amended Consent Decree. The District has agreed to make total expenditures under the original Consent Decree and the Amended Consent Decree for Supplemental Environmental Projects in an amount not less than $2,250,000.

The Final Sanitary Sewer Discharge Plan and the CSO Long Term Control Plan were submitted concurrently and certified on December 19, 2008, under the title of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into the public record February 15, 2010.

On May 17, 2010, two individuals filed, pro se, in Jefferson Circuit Court, Louisville, Kentucky, a Complaint alleging that the District violated KRS 76.090 by implementing a revised rate schedule effective August 1, 2009 without required approvals. The District filed a Motion seeking to have the Circuit Court enter Judgment in the District's favor. On September 16, 2010, the Jefferson Circuit Court granted the District's Motion for Summary Judgment. The Judgment held that the District complied with all statutory notice and public disclosure requirements for its rate increase and dismissed with prejudice the Plaintiffs' Complaint. On October 15, 2010, Plaintiffs filed a Notice of Appeal, however they failed to perfect the appeal as required by the Kentucky Rules of Civil Procedure. On June 9, 2011, the District filed a Motion to Dismiss for failure to perfect and on December 9, 2011, the Kentucky Court of Appeals granted the District's Motion dismissing the Plaintiffs' appeal.

By letter dated October 25, 2013, the United States Department of the Treasury (the "Treasury") notified the District that the District apparently violated regulations governing the use of State and Local Government ("SLGS") securities by impermissibly using the Treasury's SLGS program to create a cost-free option and invited the District to respond. The District responded by letter dated February 13, 2014. On June 6, 2014, the Treasury issued a final agency decision stating, in effect, that the District had violated the regulations. The Treasury suspended the District from participating in the SLGS program for five years, but it left open the possibility of a waiver with respect to the purchase of certain SLGS securities. The District disagreed with the final agency decision, but elected not to contest the decision in court. By letter dated September 3, 2015, the United States Department of Justice ("DOJ") notified the District that it "has been investigating whether MSD's violations of the SLGS regulations may give rise to civil monetary liability" and that it "is considering initiating civil litigation against MSD." DOJ invited the District to present its position and to explore the possibility of resolving the matter without litigation, to which the District agreed. At this time the District cannot predict the outcome, including potential monetary consequences, of the DOJ investigation.

The District is a defendant in various lawsuits. Although the outcome of these lawsuits is not presently determinable, it is the opinion of the District that resolution of these matters will not result in a material adverse effect on the operations, properties or financial condition of the District.

The District has further advised that there is no litigation or other legal proceeding (other than that relating to the Amended Consent Decree) pending or, to the knowledge of the District, threatened against or affecting the District or its Board wherein an unfavorable decision, ruling or finding would have a materially adverse effect on the operations, properties or financial condition of the District.

APPROVAL OF LEGAL PROCEEDINGS

The issuance of the Series 2017 Notes and certain legal matters incident to compliance by the District with Sections 103(b)(2) and 148 of the Code, and regulations thereunder relating to "arbitrage bonds" are subject to the approval of Dinsmore & Shohl LLP, Covington, Kentucky, Bond Counsel, whose approving opinion will be delivered with the Series 2017 Notes. Certain legal matters will be passed upon for the District by its General Counsel, Paula M. Purifoy, Esq.

Bond Counsel has reviewed legal matters incident to those sections of the Official Statement entitled "The Series 2017 Notes," "Security and Sources of Payment for the Series 2017 Notes," "Tax Exemption," and "Appendix A – Definitions of Certain Terms and Summary of Provisions of the Bond Resolution and Note Resolution," and is of the opinion that the statements contained in such identified sections are, as to law and legal conclusions, correct and that such sections fairly summarize the contents of documents therein described. Bond Counsel assumes no responsibility for the accuracy or completeness of other statements or financial information contained in this Official Statement.

TAX EXEMPTION

General

In the opinion of Bond Counsel for the Series 2017 Notes, based upon an analysis of existing laws, regulations, rulings and court decisions, interest on the Series 2017 Notes will be excludible from gross income for federal income tax purposes. Bond Counsel for the Series 2017 Notes is also of the opinion that interest on the Series 2017 Notes will not be a specific item of tax preference under Section

57 of the Internal Revenue Code of 1986 (the "Code") for purposes of computing the alternative minimum tax for individuals and corporations. Furthermore, Bond Counsel for the Series 2017 Notes is of the opinion that interest on the Series 2017 Notes is exempt from income taxation by the Commonwealth and the Series 2017 Notes are exempt from ad valorem taxation by the Commonwealth and any of its political subdivisions.

A copy of the form of opinion of Bond Counsel for the Series 2017 Notes is set forth in Appendix D, attached hereto.

The Code imposes various restrictions, conditions, and requirements relating to the qualification of the Series 2017 Notes as so-called "tax-exempt" bonds. The District has covenanted to comply with certain restrictions designed to ensure that interest on the Series 2017 Notes will not be includable in gross income for federal income tax purposes. Failure to comply with these covenants could result in the Series 2017 Notes not qualifying as "tax-exempt bonds," and thus interest on the Series 2017 Notes being includable in the gross income of the holders thereof for federal income tax purposes. Such failure to qualify and the resulting inclusion of interest could be required retroactively to the date of issuance of the Series 2017 Notes. The opinion of Bond Counsel assumes compliance with these covenants. However, Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the Series 2017 Notes may adversely affect either the federal or Kentucky tax status of the Series 2017 Notes.

Certain requirements and procedures contained or referred to in the Resolution and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Series 2017 Notes) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Bond Counsel expresses no opinion as to any Series 2017 Notes or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of bond counsel other than Dinsmore & Shohl LLP.

Although Bond Counsel for the Series 2017 Notes is of the opinion that interest on the Series 2017 Notes will be excludible from gross income for federal income tax purposes and the Series 2017 Notes will be exempt from Kentucky income tax, as described above, the ownership or disposition of, or the accrual or receipt of interest on, the Series 2017 Notes may otherwise affect a Holder's Federal, state or local tax liabilities. The nature and extent of these other tax consequences may depend upon the particular tax status of the Holder or the Holder's other items of income or deduction. Bond Counsel expresses no opinions regarding any tax consequences other than what is set forth in its opinion and each Holder or potential Holder is urged to consult with tax counsel with respect to the effects of purchasing, holding or disposing the Series 2017 Notes on the tax liabilities of the individual or entity.

Receipt of tax-exempt interest, ownership or disposition the Series 2017 Notes may result in other collateral federal, state or local tax consequence for certain taxpayers. Such effects may include, without limitation, increasing the federal tax liability of certain foreign corporations subject to the branch profits tax imposed by Section 884 of the Code, increasing the federal tax liability of certain insurance companies, under Section 832 of the Code, increasing the federal tax liability and affecting the status of certain S Corporations subject to Sections 1362 and 1375 of the Code, increasing the federal tax liability of certain individual recipients of Social Security or the Railroad Retirement benefits under Section 86 of the Code and limiting the amount of the Earned Income Credit under Section 32 of the Code that might otherwise be available. Ownership of any of the Series 2017 Notes may also result in the limitation of interest and certain other deductions for financial institutions and other taxpayers, pursuant to Section 265 of the Code. Finally, residence of the Holder of the Series 2017 Notes in a state other than Kentucky or being subject to tax in a state other than Kentucky, may result in income or other tax liabilities being imposed by such states or their political subdivisions based on the interest or other income from the Series 2017 Notes.

The District has ***not*** designated the Series 2017 Notes as "qualified tax-exempt obligations" under Section 265 of the Code.

Original Issue Premium

"Acquisition Premium" is the excess of the cost of a note over the stated redemption price of such note at maturity. The Series 2017 Notes have a yield that is lower than their stated interest rate, as shown on the cover page hereto, and are therefore being initially offered and sold to the public at an Acquisition Premium. For federal income tax purposes, the amount of Acquisition Premium on each note the interest on which is excludable from gross income for federal income tax purposes ("tax-exempt bonds") must be amortized and will reduce the bondholder's adjusted basis in that note. However, no amount of amortized Acquisition Premium on tax-exempt notes may be deducted in determining a noteholder's taxable income for federal income tax purposes. The amount of any Acquisition Premium paid on the Series 2017 Notes, that must be amortized during any period will be based on the "constant yield" method, using the original bondholder's basis in such bonds and compounding semiannually. This amount is amortized ratably over that semiannual period on a daily basis.

Holders of the Series 2017 Notes should consult their own tax advisors as to the actual effect of such Acquisition Premium with respect to their own tax situation and as to the treatment of Acquisition Premium for state tax purposes.

FINANCIAL STATEMENTS

The financial statements of the District for the fiscal year ended June 30, 2016 included as Appendix B of this Official Statement and an integral part of this Official Statement, have been audited by Crowe Horwath LLP, independent auditors, as stated in their report.

RATINGS

Moody's Investors Service, Inc. ("Moody's") and Standard & Poor's Ratings Services, a Division of The McGraw Hill Companies, Inc. ("S&P") have assigned the ratings of " MIG 1" and "SP-1+", respectively, to the Series 2017 Notes. Such ratings reflect only the views of the respective rating agencies. An explanation of the significance of the rating given by Moody's may only be obtained from Moody's at Moody's Investors Service, Inc., 7 World Trade Center, 250 Greenwich Street, Public Finance Group - 23rd Floor, New York, New York 10007, (212) 553-0300; and an explanation of the rating given by S&P may be obtained from Standard & Poor's Ratings Services at 55 Water Street, New York, New York 10041, (212) 438-2124. There is no assurance that such ratings will continue for any given period of time or that they will not be revised downward or withdrawn entirely by such organizations if, in the judgment of such organizations, circumstances so warrant. Any such downward revision or withdrawal of such ratings could have adverse effects on the market price of the Series 2017 Notes.

UNDERWRITING

The Series 2017 Notes are being purchased for reoffering by Citigroup Global Markets Inc. (the "Underwriter"). The Underwriter has agreed to purchase the Series 2017 Notes at an aggregate purchase price of $235,151,416.20 (reflecting the par amount of the Series 2017 Notes, plus premium of $8,913,269.20, and less underwriter's discount of $101,853.00). The initial public offering price, which produces the yield set forth on the cover page of this Official Statement, may be changed by the Underwriter and the Underwriter may offer and sell the Series 2017 Notes to certain dealers (including dealers depositing Series 2017 Notes into investment trusts) and others at prices lower than the offering price which produces the yield set forth on the cover page.

FINANCIAL ADVISOR

J.J.B. Hilliard, W.L. Lyons, LLC has been employed as Financial Advisor to the District in connection with the issuance of the Series 2017 Notes. The Financial Advisor's fee for services rendered with respect to the sale of the Series 2017 Notes is contingent upon the issuance and delivery thereof. The Preliminary Official Statement was prepared and distributed by the Financial Advisor. The information set forth herein was obtained from the District and other sources believed to be reliable, but is not guaranteed as to accuracy or completeness by, and is not to be construed as a representation of the Financial Advisor.

CONTINUING DISCLOSURE

In accordance with Securities and Exchange Commission Rule 15c2-12 (the "Rule"), the District will agree, pursuant to a Continuing Disclosure Certificate to be dated and delivered as of the date of issuance and delivery of the Series 2017 Notes (the "Disclosure Certificate"), to cause the following information to be provided:

(i) to the Municipal Securities Rulemaking Board (the "MSRB"), certain annual financial information and operating data, including audited financial statements prepared in accordance with generally accepted accounting principles as applied to governmental units, generally consistent with the information contained under the headings "THE DISTRICT – Customer History, " " THE DISTRICT – Rate History, " and in "Appendix B" (the "Financial Data") of the Official Statement; such information shall be provided on or before the January 1 following the fiscal year ending on the preceding June 30, commencing with the fiscal year ended June 30, 2017; provided that the audited financial statements may not be available by such date, but will be made available immediately upon delivery thereof by the auditor to the Obligated Person;

(ii) In a timely manner not in excess of ten business days after the occurrence of the event to the MSRB, notice of the occurrence of the following events, with respect to the Bonds:

- (a) Principal and interest payment delinquencies;
- (b) Non-payment related defaults, if material;
- (c) Unscheduled draws on debt service reserves reflecting financial difficulties;
- (d) Unscheduled draws on credit enhancements reflecting financial difficulties;
- (e) Substitution of credit or liquidity providers, or their failure to perform;
- (f) Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the security, or other material events affecting the tax-exempt status of the security;
- (g) Modifications to rights of security holders, if material;
- (h) Bond calls, if material, and tender offers (except for mandatory scheduled redemptions not otherwise contingent upon the occurrence of an event);
- (i) Defeasances;
- (j) Release, substitution or sale of property securing repayment of the securities, if material;
- (k) Rating changes;
- (l) Bankruptcy, insolvency, receivership or similar event of the obligated person (Note: For the purposes of this event, the event is considered to occur when any of the following occur: The appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or

governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person);

(m) The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and

(n) Appointment of a successor or additional trustee or the change of name of a trustee, if material.

(iii) in a timely manner, to the MSRB, notice of a failure of an Obligated Person to provide the required Annual Financial Information on or before the date specified in the Continuing Disclosure Certificate.

The Disclosure Certificate provides holders of the Series 2017 Notes, including beneficial owners of the Series 2017 Notes, with certain enforcement rights in the event of a failure by the District to comply with the terms thereof; however, a default under the Disclosure Certificate does not constitute an event of default under the Resolution. The Disclosure Certificate may also be amended or terminated under certain circumstances in accordance with the Rule as more fully described therein. Holders of the Series 2017 Notes are advised that the Disclosure Certificate, the form of which is obtainable from the Financial Advisor, should be read in its entirety for more complete information regarding its contents.

For purposes of this transaction with respect to events as set forth in the Rule:

(i) there are no credit enhancements applicable to the Bonds; and

(ii) there are no liquidity providers applicable to the Bonds.

Pursuant to outstanding continuing disclosure undertakings (the "Existing Undertakings") the District is required to file certain annual financial information with the MSRB by January 1 of each year. The District has filed its annual financial information in accordance with the Existing Undertakings and, to the best of the District's knowledge, is in material compliance with the continuing disclosure undertaking requirements of the Rule in connection with its outstanding obligations that are subject to such requirements. In the past five years, the District has been made aware that there have been changes to the credit ratings on certain obligations of the District resulting from changes to the credit rating of credit enhancers providing bond insurance for those obligations, for which continuing disclosure event notices were not filed (such changes to the credit ratings were made without any formal notice of the change to the District).

CONCLUDING STATEMENT

The foregoing summaries or descriptions of provisions in the Resolution and all references to other materials not purporting to be quoted in full, are only brief outlines of certain provisions thereof and do not purport to be complete statements of such documents and provisions. Reference is hereby made to the complete documents, copies of which will be furnished by the District upon request, for further information.

Any statements in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Official Statement is not to be construed as a contract or agreement between the District and the purchasers or holders of any of the Series 2017 Notes.

This Official Statement has been approved by the District as of the date set forth on the cover hereof.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT

By: /s/ Cyndi Caudill
Chair

By: /s/ Chad Collier
Secretary-Treasurer

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APPENDIX A

DEFINITIONS OF CERTAIN TERMS AND SUMMARY OF PROVISIONS OF THE BOND RESOLUTION AND NOTE RESOLUTION

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DEFINITIONS OF CERTAIN TERMS AND SUMMARY OF PROVISIONS OF THE BOND RESOLUTION AND NOTE RESOLUTION

The descriptions and summaries set forth herein are not intended to be comprehensive or definitive, and reference is made to the Bond Resolution and the Note Resolution for the complete details of all terms and conditions. All statements herein are qualified in their entirety by reference to the Bond Resolution and Note Resolution. Copies of the Bond Resolution and Note Resolution are available from the District.

Definitions

"Account" means an Account established pursuant to the Bond Resolution, including the General Subaccount in the Note Account and the Subordinated Debt Subaccounts.

"Accountant" shall mean an independent, certified public accountant, or a firm of independent, certified public accountants, selected by the District.

"Accountant's Certificate" means a certificate of an independent certified public accountant or firm of accountants (who may be the accountant or firm which regularly audits the books of the District) selected by the District.

"Accreted Value" means, with respect to any Capital Appreciation Bond, an amount equal to the principal amount of such Capital Appreciation Bond (determined on the basis of the principal amount per $5,000 at maturity thereof) plus the amount assuming semiannual compounding of earnings which would be produced on the investment of such principal amount, beginning on the dated date of such Capital Appreciation Bond and ending at the maturity date thereof, at a yield which, if produced until maturity, will produce $5,000 at maturity. As of any Valuation Date, the Accreted Value of any Capital Appreciation Bonds shall mean the amount set forth for such date in the Supplemental Resolution authorizing such Capital Appreciation Bonds and as of any date other than a Valuation Date, the sum of (a) the Accreted Value on the preceding Valuation Date and (b) the product of (1) a fraction, the numerator of which is the number of days having elapsed from the preceding Valuation Date and the denominator of which is the number of days from such preceding Valuation Date to the next succeeding Valuation Date and (2) the difference between the Accredited Values for such Valuation Dates.

"Accrued Aggregate Debt Service" for any period means, as of any date of calculation and with respect to any Series, an amount equal to the sum of the amounts of accrued Debt Service with respect to all Series, calculating the accrued Debt Service with respect to each Series at an amount equal to the sum of [i] interest on the Bonds of such Series accrued and unpaid and to accrue to the end of the then current calendar month and [ii] Principal Installments due and unpaid and that portion of the Principal Installment for such Series next due which would have accrued (if deemed to accrue in the manner set forth in the definition of Debt Service) to the end of such calendar month. The principal and interest portions of the Accreted Value and Appreciated Value of Capital Appreciation Bonds and Capital Appreciation and Income Bonds, respectively, becoming due at maturity or by virtue of a Sinking Fund Installment shall be included in the calculations of accrued and unpaid and accruing interest or Principal Installments in such manner and during such period of time as is specified in the Supplemental Resolution authorizing such Bonds.

"Act" means Kentucky Revised Statutes Chapters 58, 65 and 76, including particularly Sections 76.055 et seq., inclusive, and Section 56.513, as the same may be from time to time amended, and successor provisions.

"Act of Bankruptcy" shall mean any of the following events:

(a) The District shall (1) apply for or consent to the appointment of, or the taking of possession by, a receiver, custodian, trustee, liquidator or the like of the District, or of all or a substantial part of the property of any of them, (2) commence a voluntary case under the Federal Bankruptcy Code (as now or hereafter in effect) or (3) file a petition seeking to take advantage of any other law relating to bankruptcy, insolvency, reorganization, winding-up or composition or adjustment of debts; or

(b) A proceeding or case shall be commenced, without the application or consent of the District, as the case may be, in any court of competent jurisdiction, seeking (1) the liquidation, reorganization, dissolution, winding-up, or the composition or adjustment of debts, of the District, (2) the appointment of a trustee, receiver, custodian, liquidator or the like of the District or of all or any substantial part of the assets of the District, or (3) similar relief in respect of the District under any law relating to bankruptcy, insolvency, reorganization, winding-up or composition or adjustment of debts, and such proceeding or case shall continue undismissed, or an order, judgment or decree approving or ordering any of the foregoing shall be entered and continue unstayed and in effect for a period of 30 days from the commencement of such proceeding or case.

"Additional Bonds" means Bonds authenticated and delivered upon original issuance pursuant to the Bond Resolution and any Bonds thereafter authenticated and delivered in lieu of or in substitution for such Bonds pursuant to the Bond Resolution.

"Affiliate" of any specified Person shall mean any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For purposes of this definition, "control" when used with respect to any specified Person shall mean the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities by contract or otherwise; and the terms "controlling" and "controlled" have meanings correlative to the foregoing.

"Agent Member" shall mean a member of, or participant in, the Securities Depository.

"Aggregate Debt Service" for any period means, as of any date of calculation and with respect to all Bonds, the sum of the amounts of Debt Service for such period.

"Aggregate Net Debt Service" for any period means, as of any date of calculation and with respect to all Bonds, the Aggregate Debt Service for such period, less any amounts available or expected to be available in the ordinary course for the payment of Debt Service during such period pursuant to the Resolution (including but not limited to interest or other income available or expected to be available for payment of Debt Service during such period from the Reserve Account).

"Annual Budget" means the budget adopted or in effect for a particular Fiscal Year as provided in the Resolution.

"Appreciated Value" means, with respect to any Capital Appreciation and Income Bond up to the Interest Commencement Date, an amount equal to the principal amount of such Capital Appreciation and Income Bond (determined on the basis of the principal amount per $5,000 at the Interest Commencement Date thereof) plus the amount, assuming semi-annual compounding of earnings which would be produced on the investment of such principal amount, beginning on the dated date of such Capital Appreciation and Income Bond and ending on the Interest Commencement Date, at a yield which, if produced until the Interest Commencement Date, will produce $5,000 at the Interest Commencement Date. As of any Valuation Date, the Appreciated Value of any Capital Appreciation and Income Bond shall mean the amount set forth for such date in the Supplemental Resolution authorizing such Capital Appreciation Bonds and as of any date other than a Valuation Date, the sum of (a) the Appreciated Value on the preceding Valuation Date and (b) the product of (1) a fraction, the numerator of which is the number of days having elapsed from the preceding Valuation Date and the denominator of which is the number of days from such preceding Valuation Date to the next succeeding Valuation Date and (2) the difference between the Appreciated Values for such Valuation Dates.

"Authorized District Representative" shall mean the Chairperson or Vice-Chairperson or Executive Director or Director of Finance or Secretary or Treasurer of the District or such Persons as, at the time, are designated to act in behalf of the District by written certificate furnished to the Paying Agent and the District, containing the specimen signature of each such Person and signed on behalf of the District.

"Authorized Denominations" shall mean $5,000 or any integral multiple thereof.

"Authorized Investments" shall mean any of the following securities, to the extent legal for investment of the District's funds: [a] Government Obligations and, to the extent from time to time permitted by law, [b] obligations of [i] Federal Home Loan Banks, senior debt obligations, [ii] Federal Home Loan Mortgage Corporation, participation certificates and senior debt obligations, [iii] Student Loan Marketing Association, senior debt obligations, [iv] Resolution Funding Corporation and [v] Federal National Mortgage Association mortgage-backed securities and senior debt obligations; [c] money market funds registered under the Federal Investment Company Act of 1940, whose shares are registered under the Federal Securities Act of 1933, and having a rating by Standard and Poor's of AAAm-G, AAAm or AAm; [d] certificates of deposit or time deposits of any bank, any branch of any bank, trust company or national banking association or any savings and loan association; provided, however, that such certificates of deposit or time deposits shall be fully secured, to the extent not insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation, by Government Obligations in which the Note Registrar has a perfected first security interest, [e] investment agreements (for investment of moneys held in the Construction and Acquisition Fund) or other investments approved in writing by the Insurer, [f] commercial paper rated at the time of purchase, "Prime-1" by Moody's and "A-1" or better by S&P, [g] bonds or notes issued by any state or municipality which are rated by Moody's and S&P in one of the two highest rating categories assigned by such agencies, [h] federal funds or banker acceptances with a maximum term of 1 year with a rating of "Prime-1" or "A-3" or better by Moody's and "A-1" or "A" or better by S&P, and [i] any repurchase agreement approved in writing by the Insurer or any repurchase agreement with a term not in excess of 30 days that is a legal investment for public funds under state law (as determined by a written legal opinion delivered to the District) and is with a primary dealer on the Federal Reserve reporting dealer list rated A or better by Moody's and S&P or any bank or trust company (including the Note Registrar) rated "A" or better by Moody's and S&P for Government Obligations or obligations described in [b] above in which the Note Registrar shall be given a first security interest and on which no third party shall have a lien. The underlying repurchase obligations must be valued weekly and marked to market at a current market price plus accrued interest of at least 104% (105% if the underlying securities are Federal National Mortgage Association Mortgage-backed securities and senior debt obligations) of the amount of the repurchase obligations of the bank or trust company. All obligations purchased must be transferred to the Note Registrar or a third party agent by physical delivery or by an entry made on the records of the issuer of such obligations. Any investment in a repurchase agreement shall be considered to mature on the date the obligor providing the repurchase agreement is obligated to repurchase the obligations. Any investment in obligations described in [a] and [b] above may be made in the form of an entry made on the records of the issuer of the particular obligation.

The Note Registrar, any Paying Agent, or other custodian of funds of the District, respectively, may trade with itself in the purchase and sale of securities for such investment and may charge its ordinary and customary fees for such trades, including cash sweep account fees. In the absence of any direction from the District, the Note Registrar, any Paying Agent, or other custodian of funds of the

District, respectively, shall invest all funds in sweep accounts, money market funds and similar short-term investments, provided that all such investments shall constitute Authorized Investments.

"Authorized Newspaper" means The Bond Buyer or any other financial newspaper customarily published at least once a day for five days (other than legal holidays) in each calendar week, printed in the English language and of general circulation in the Borough of Manhattan, City and State of New York.

"Authorized Officer of the District" means any person authorized by the District to perform the act or sign the document in question.

"Board" means the Board of the District, or such board, commission or agency as may succeed to the duties and responsibilities of such Board.

"Bond" or "Bonds" means any bonds, notes or other evidences of indebtedness (other than Subordinated Debt), as the case may be, authenticated and delivered pursuant to the Resolution.

"Bond Counsel" means a nationally recognized municipal bond attorney or firm of municipal bond attorneys, acceptable to the District.

"Bond Fund" means the Bond Fund established in the Resolution.

"Bondholder" or "Holder of Bonds" or "Holder" means any person who shall be the registered owner of any Bond or Bonds. Notwithstanding this definition, with respect to any Bonds which are registered in Book-Entry Form, the Paying Agent shall be entitled to rely upon written instructions from a majority of the beneficial owners of the Bonds with reference to consent, if any, required from Bondholders under the Resolution.

"Bond Register" means the form or system or document in which the ownership of Bonds is recorded by the Bond Registrar.

"Bond Registrar" means any bank or trust company organized under the laws of any state of the United States of America or national banking association appointed by the District to perform the duties of Bond Registrar enumerated in the Resolution.

"Bond Resolution" shall mean the District's Sewer and Drainage System Revenue Bond Resolution as adopted on December 7, 1992, and amended on March 4, 1993, June 30, 1993, December 14, 1994, January 25, 1996 and February 24, 2003, as the same may be further amended and supplemented from time to time.

"Book-Entry Form" or "Book-Entry System" means, with respect to the Bonds, a form or system, as applicable, under which (i) the ownership of beneficial interests in Bonds and bond service charges may be transferred only through a book entry and (ii) physical Bond certificates in fully registered form are registered only in the name of a Securities Depository or its nominee as Holder, with the physical Bond certificates in the custody of a Securities Depository.

"Business Day" means any day other than a Saturday, Sunday or legal holiday in the Commonwealth or a day on which either Bond Registrar, the Paying Agent or the District is legally authorized to close.

"Capital Appreciation Bonds" means any Bonds issued under the Resolution as to which interest is payable only at the maturity or prior redemption of such Bonds, as further described in the Resolution.

"Capital Appreciation and Income Bonds" means any Bonds issued under the Resolution as to which interest is deferred prior to the Interest Commencement Date, as further described in the Resolution.

"Chairperson" means the Chairperson of the District, or such Officer of the District as may succeed to the duties and responsibilities of the Chairperson.

"Closing Date" shall mean the date of the issuance and delivery of a series of Notes.

"Code" shall mean the Internal Revenue Code of 1986, as amended, as it applies to the Notes, including applicable regulations and revenue rulings thereunder.

"Commonwealth" means the Commonwealth of Kentucky.

"Construction and Acquisition Fund" means the Construction and Acquisition Fund established in the Resolution.

"Cost of Construction and Acquisition" means, with respect to a Project, the District's costs, expenses and liabilities paid or incurred or to be paid or incurred by the District in connection with the planning, engineering, designing, acquiring, constructing, installing and financing, of a Project and the obtaining of all governmental approvals, certificates, permits and licenses with respect thereto, including, but not limited to, all costs relating to the acquisition, construction and installation of a Project and the cost of any demolitions or relocations necessary in connection therewith, any good faith or other similar payment or deposits required in connection with the purchase of a Project, the cost of acquisition by or for the District of real and personal property or any interests therein, and costs of the District incidental to such construction, acquisition or installation all costs relating to injury and damage claims relating to a Project, the cost of any indemnity or surety bonds and premiums on insurance, preliminary investigation and development costs, engineering fees and expenses, contractors' fees and expenses, the costs of labor, materials, equipment and utility services and supplies, legal and financial advisory fees and expenses, interest and financing costs, including, without limitation, bank commitment, line of credit, and letter of credit fees, bond insurance and indemnity premiums, and any other means of providing credit enhancement or credit support, costs incurred in connection with interest rate exchanges, futures contracts or other similar financing arrangements, fees and expenses of the Fiduciaries, including reasonable fees and expenses of counsel to the Fiduciaries, administration and general overhead expense and costs of keeping accounts and making reports required by the Resolution prior to or in connection with the completion of construction of a Project, amounts, if any, required by the Resolution to be paid into the Bond Fund to provide, among other things, for interest accruing on Bonds and to provide for the Debt Service Reserve Requirement or to be paid into the Renewal and Replacement Account for any of the respective purposes thereof, payment when due (whether at the maturity of principal or the due date of interest or upon redemption or purchase) on any indebtedness of the District, including Bonds, notes and Subordinate Debt, incurred in respect of any of the foregoing, and working capital and reserves therefor, and all federal, state and local taxes and payments in lieu of taxes legally required to be paid in connection with a Project and shall include reimbursements to the District for any of the above items theretofore paid by or on behalf of the District. It is intended that this definition of Cost of Construction and Acquisition be broadly construed to encompass all costs, expenses and liabilities of the District related to a Project which on the date of adoption of the Resolution or in the future shall be permitted to be funded with the proceeds of Bonds pursuant to the provisions of the laws of the Commonwealth.

"Credit Facility" means, a letter of credit, surety bond, loan agreement, standby purchase agreement or other credit agreement, facility or insurance or guaranty arrangement which has been rated not lower than "A" by Moody's or S&P's, or which is issued by an entity whose unsecured long term debt or claims paying ability is rated not lower than "A" by Moody's or S&P's, in either case, pursuant to which the District or another person is entitled to obtain funds to pay Bonds and interest thereon tendered to the District or a third party for payment, purchase or redemption in accordance with the Resolution.

"Debt Service" for any period means, as of any date of calculation and with respect to any Series, an amount equal to [i] the interest accruing during such period on Bonds of such Series plus [ii] the portion of each Principal Installment for such Series which would accrue during such period if such Principal Installment were deemed to accrue periodically in equal amounts from the next preceding Principal Installment due date for such Series (or, if there shall be no such preceding Principal Installment due date, from a date one year preceding the due date of such Principal Installment or from the date of issuance of the Bonds of such Series, whichever date is later). For Variable Interest Rate Bonds, the annual interest rate thereon and the resulting Debt Service shall be calculated by an Authorized Officer and evidenced by a certificate from such Authorized Officer of the District in accordance with the following procedure: for any Variable Interest Rate Bonds Outstanding on the date such certificate is delivered, an Authorized Officer of the District shall estimate the Debt Service on such Bonds upon reliance upon a written estimate of such Debt Service by the District's financial advisor which estimate shall include assumptions with respect to the interest rate or rates to be borne by such Bonds and the amounts and due dates of the Principal Installments for such Bonds; provided, however, that the interest rate or rates assumed to be borne by any Variable Interest Rate Bonds shall not be less than the interest rate borne by such Variable Interest Rate Bonds at the time that an Authorized Officer of the District delivers such certificate. The principal and interest portions of the Accreted Value and Appreciated Value of Capital Appreciation Bonds and Capital Appreciation and Income Bonds, respectively, becoming due at maturity or by virtue of a Sinking Fund Installment shall be included in the calculations of accrued and unpaid and accruing interest or Principal Installments in such manner and during such period of time as is specified in the Supplemental Resolution authorizing such Bonds.

"Debt Service Account" means the Debt Service Account of the Bond Fund.

"Debt Service Reserve Requirement" as of a particular date of computation means an amount, computed separately for each Series of Bonds, equal to the least of [i] ten percent (10%) of the face amount of such Series, [ii] one hundred percent (100%) of the maximum Aggregate Net Debt Service (as of the computation date) in the current or any future Fiscal Year and [iii] one hundred twenty-five percent (125%) of average Aggregate Net Debt Service (as of the computation date) in the current or any future Fiscal Year. For Variable Interest Rate Bonds, the Debt Service Reserve Requirement shall be the maximum permitted amount with interest calculated at the lesser of the 30-year Revenue Bond Index (published by The Bond Buyer no more than two weeks prior to the date of sale of such Variable Interest Rate Bonds) or the Maximum Interest Rate. If any Variable Interest Rate Bond shall be converted to a fixed rate Bond for the remainder of the term thereof, and as a result thereof a nominal deficiency shall be created in the Bond Fund, the Debt Service Reserve Requirement shall be adjusted so as to exclude the amount of such deficiency, but the Debt Service Reserve Requirement shall be increased in each Fiscal Year or portion thereof after the date of such conversion by an amount equal to one hundred percent (100%) of the nominal deficiency, until there is no longer a nominal deficiency.

"Default" shall mean any event which with the giving of notice or lapse of time, or both, would constitute an Event of Default.

"Defaulted Interest" shall have the meaning stated in Note Resolution.

"Defeasance Obligations" means (i) cash, (ii) U.S. Treasury Certificates, Notes and Bonds (including State and Local Government Series - "SLGS"), (iii) direct obligations of the United States Treasury which have been stripped by the Treasury itself (CATS, TIGRS and similar securities), (iv) interest components of obligations of the Resolution Funding Corporation in book-entry form if such obligations have been stripped by request to the Federal Reserve Bank of New York, (v) pre-refunded municipal bonds rated "Aaa" by Moody's and "AAA" by S&P; however, if the issue is only rated by S&P,

then the pre-refunded bonds must have been pre-refunded with cash, direct U.S. or U.S. guaranteed obligations, or AAA rated pre-refunded municipals, (vi) obligations issued by the following agencies which are backed by the full faith and credit of the United States: (a) direct obligations or fully guaranteed certificates of beneficial ownership of the U.S. Export-Import Bank (Eximbank), (b) certificates of beneficial ownership of the Farmers Home Administration, (c) obligations of the Federal Financing Bank, (d) participation certificates of the General Services Administration, (e) guaranteed Title XI financings of the U.S. Maritime Administration, (f) United States guaranteed New Community Debentures, (g) United States guaranteed public housing notes and bonds, and (h) project notes and local authority bonds of the U.S. Department of Housing and Urban Development, and (vii) any other investments approved in writing by the Insurer.

"District" means the Louisville and Jefferson County Metropolitan Sewer District, a public body corporate and political subdivision, created and established pursuant to the Act.

"District Certificate" shall mean a certificate signed by an Authorized District Representative and delivered to the Paying Agent.

"District Note" shall mean any Note registered in the name of the District or any beneficial ownership interest in the Notes held by the District.

"District Request", "District Order" or "District Consent" shall mean, respectively, a written request, order or consent of the District, signed by an Authorized District Representative and delivered to the Paying Agent.

"District Resolution" shall mean a resolution or other appropriate enactment by the District certified by the Secretary or another Authorized District Representative to have been duly adopted by the District and to be in full force and effect on the date of such certification, and delivered to the Paying Agent.

"Eastern Time" shall mean the prevailing time in the City of Louisville, Kentucky.

"Eligible Moneys" shall mean (a) proceeds of the sale of Notes not sold to the District or an Affiliate of the District, (b) moneys deposited with the Paying Agent by the District (including proceeds of Notes sold to an Affiliate of the District) for the benefit of the Noteholders for more than 183 days during which no Act of Bankruptcy has occurred as evidenced by a certificate of the District, (c) moneys with respect to which the District delivers to the Paying Agent an Opinion of Counsel with nationally recognized expertise in bankruptcy acceptable to the Paying Agent that such payments will not constitute a voidable transfer or preference under and pursuant to Section 547 of the Federal Bankruptcy Code and (d) investment income on the foregoing types of money.

"Event of Default" shall have the meaning given to such term herein under the caption "Events of Default."

"Extraordinary Services and Extraordinary Expenses" shall mean all reasonable services rendered and all reasonable expenses incurred by the Paying Agent under the Resolution other than Ordinary Services and Ordinary Expenses.

"Federal Reserve Bank" means any one of the central banks constituting the Federal Reserve System, created by the Federal Reserve Act of 1913, as amended, in order to regulate and aid the member banks in its respective Federal Reserve district.

"Fiduciary" or "Fiduciaries" means the Bond Registrar, the Paying Agents, or any or all of them, as may be appropriate or any bank, trust company, national banking association, savings and loan association, savings bank or other banking association selected by the District as a depositary of monies and securities held under the provisions of the Resolution, and may include the Bond Registrar.

"Fiscal Year" means each twelve (12) month period commencing on July 1 and ending on the succeeding June 30.

"Fitch" shall mean Fitch Ratings, its successors and their assigns, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a municipal securities rating agency, Fitch shall be deemed to refer to any other nationally recognized municipal securities rating agency designated by the District.

"Fund" or "Funds" means, as the case may be, each or all of the Funds established in the Resolution.

"Government Obligations" when used with respect to Bonds shall mean (i) any direct obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury) or obligations the principal and interest on which are unconditionally guaranteed by the United States of America, and (ii) bonds, debentures, notes or other evidences of indebtedness issued or guaranteed by any of the following federal agencies (including stripped obligations thereof if such obligations have been stripped by the issuing agency itself) provided such obligations are backed by the full faith and credit of the United States of America: [1] Farmer's Home Administration; [2] General Services Administration; [3] United States Maritime Administration - Guaranteed Title XI Financing; [4] Federal Financing Bank; [5] United States Department of Housing and Urban Development; [6] U.S. Export - Import Bank; [7] Federal Housing Administration Debentures, and [8] Government National Mortgage Association guaranteed mortgage-backed bonds and guaranteed pass-through obligations.

"Government Obligations" when used with respect to Notes shall mean, direct general obligations of, or obligations the prompt payment of the principal of and the interest on which are fully and unconditionally guaranteed by, the United States of America. In addition, investments having a maturity of seven days or less in a money market or other fund, which fund is rated by Moody's and S & P in the highest rating category, and investments of which fund are exclusively in Government Obligations, shall be considered investments in Government Obligations.

"Granting Clauses" means the granting clauses appearing at the beginning of the Resolution.

"Immediate Notice" shall mean notice (a) by telex, telecopier or telephone, or delivery by hand, (b) promptly followed by written notice by first class mail, postage prepaid, and (c) to such address or such telex, telecopier or telephone number as the Person receiving such notice shall have previously furnished to the Paying Agent in writing.

"Independent" when used with respect to any specified Person shall mean such a Person who (a) is in fact independent; (b) does not have any direct financial interest or any material indirect financial interest in the District or any Affiliate of the District, other than the payment to be received under a contract for services to be performed by such Person; and (c) is not connected with the District or any Affiliate of the District, as an official, officer, employee, promoter, underwriter, trustee, partner, subsidiary, director or Person performing similar functions.

"Interest Payment Date" shall mean the date or dates for the payment of interest on each series of Notes as provided in the applicable series of Notes.

"Insurer" means any nationally recognized company engaged in the business of insuring bonds which may from time to time insure the payment of the principal of and interest on all or a portion of the Bonds of any Series.

"Interest Commencement Date" means, with respect to any particular Capital Appreciation and Income Bond, the date specified in the Supplemental Resolution authorizing such Bonds, (which date must be prior to the maturity date for such Bonds) after which interest ceases to be deferred and compounds and the interest becomes currently payable.

"Investment Securities" means any of the following securities, to the extent legal for investment of the District's funds: [a] Government Obligations and, to the extent from time to time permitted by law, [b] obligations of [i] Federal Home Loan Banks, senior debt obligations, [ii] Federal Home Loan Mortgage Corporation, participation certificates and senior debt obligations, [iii] Student Loan Marketing Association, senior debt obligations, [iv] Resolution Funding Corporation and [v] Federal National Mortgage Association mortgage-backed securities and senior debt obligations; [c] money market funds registered under the Federal Investment Company Act of 1940, whose shares are registered under the Federal Securities Act of 1933, and having a rating by Standard and Poor's of AAAm-G, AAAm or AAm; [d] certificates of deposit or time deposits of any bank, any branch of any bank, trust company or national banking association or any savings and loan association; provided, however, that such certificates of deposit or time deposits shall be fully secured, to the extent not insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation, by Government Obligations in which the Bond Registrar has a perfected first security interest, [e] investment agreements (for investment of moneys held in the Construction and Acquisition Fund) or other investments approved in writing by the Insurer, [f] commercial paper rated at the time of purchase, "Prime-1" by Moody's and "A-1" or better by S&P, [g] bonds or notes issued by any state or municipality which are rated by Moody's and S&P in one of the two highest rating categories assigned by such agencies, [h] federal funds or banker acceptances with a maximum term of 1 year with a rating of "Prime-1" or "A-3" or better by Moody's and "A-1" or "A" or better by S&P, and [i] any repurchase agreement approved in writing by the Insurer or any repurchase agreement with a term not in excess of 30 days that is a legal investment for public funds under state law (as determined by a written legal opinion delivered to the District) and is with a primary dealer on the Federal Reserve reporting dealer list rated A or better by Moody's and S&P or any bank or trust company (including the Bond Registrar) rated "A" or better by Moody's and S & P for Government Obligations or obligations described in [b] above in which the Bond Registrar shall be given a first security interest and on which no third party shall have a lien. The underlying repurchase obligations must be valued weekly and marked to market at a current market price plus accrued interest of at least 104% (105% if the underlying securities are Federal National Mortgage Association Mortgage-backed securities and senior debt obligations) of the amount of the repurchase obligations of the bank or trust company. All obligations purchased must be transferred to the Bond Registrar or a third party agent by physical delivery or by an entry made on the records of the issuer of such obligations. Any investment in a repurchase agreement shall be considered to mature on the date the obligor providing the repurchase agreement is obligated to repurchase the obligations. Any investment in obligations described in [a] and [b] above may be made in the form of an entry made on the records of the issuer of the particular obligation.

The Bond Registrar, any Paying Agent, other Fiduciaries, or other custodian of funds of the District, respectively, may trade with itself in the purchase and sale of securities for such investment and may charge its ordinary and customary fees for such trades, including cash sweep account fees. In the absence of any direction from the District, the Bond Registrar, any Paying Agent, other Fiduciaries, or other custodian of funds of the District, respectively, shall invest all funds in sweep accounts, money market funds and similar short-term investments, provided that all such investments shall constitute Investment Securities.

"Maturity" when used with respect to any Note shall mean the date on which the principal of such Note becomes due and payable as therein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

"Maximum Interest Rate" means, with respect to any particular Variable Interest Rate Bond, an annual rate of interest, which shall be set forth in the Supplemental Resolution authorizing such Bond, that shall be the maximum rate of interest such Bond may at any time bear.

"Minimum Interest Rate" means, with respect to any particular Variable Interest Rate Bond, an annual rate of interest which may (but need not) be set forth in the Supplemental Resolution authorizing such Bond, that shall be the minimum rate of interest such Bond may at any time bear.

"Moody's" means Moody's Investors Service, Inc., a corporation organized and existing under the laws of the State of Delaware, its successors and their assigns, if any.

"Month" means a calendar month.

"Net Revenues" for any period shall mean Revenues, less Operating Expenses for such period.

"Noteholder", "Owner", "owner", "Holder" or "holder" or any similar term, when used with reference to any of the Notes, shall mean any Person who shall be the registered owner on the records of the Note Registrar of any then Outstanding Notes.

"Notes" shall mean the District's Subordinated Sewer and Drainage System Revenue Notes issued pursuant to the Note Resolution.

"Note Account" shall mean the fund created in Section 5.2 of the Note Resolution.

"Note Documents" shall mean the Note Resolution and the Notes.

"Note Register" shall have the meaning specified in Section 2.5 of the Note Resolution.

"Note Registrar" shall mean the Paying Agent in its capacity as bond registrar, appointed and serving in such capacity pursuant to the Note Resolution.

"Note Resolution" or "Subordinated Debt Resolution" shall mean the Subordinate Debt Resolution adopted by the District on April 26, 2010, as amended by the Subordinate Debt Sale Resolution adopted on September 9, 2016.

"Notice by Mail" or "notice" of any action or condition "by Mail" shall mean a written notice meeting the requirements of the Note Resolution mailed by first-class mail, postage prepaid, to the Holders of specified Notes at the addresses shown in the Note Register. If, because of the temporary or permanent suspension of mail service or for any other reason, it is impossible or impracticable to mail any such notice in the manner described, then such notification in lieu thereof as shall be made with the approval of the Paying Agent shall constitute a sufficient notice.

"Official Statement" shall mean the offering document for a series of Notes to be used by the Underwriter to offer such Notes, as from time to time amended.

"Operating Expenses" means the District's reasonable, ordinary, usual or necessary current expenses of maintenance, repair and operation of the System, determined in accordance with generally accepted accounting principles and the enterprise basis of accounting. Operating Expenses shall include, without limiting the generality of the foregoing, [i] expenses not annually recurring, [ii] administrative and engineering expenses (to the extent not paid or reimbursed as a Cost of Construction and Acquisition), payments to pension or retirement funds properly chargeable to the System, insurance premiums, fees and expenses of Paying Agents and legal expenses, [iii] interest on, redemption premium on, or principal of, Subordinated Debt, [iv] any other expenses required to be paid by the District under the provisions of the Resolution or by law and [v] amounts reasonably required to be set aside in reserves for operating items or expenses the payment of which is not then immediately required.

However, Operating Expenses do not include [i] reserves for extraordinary maintenance or repair, or any allowance for depreciation, or any deposits or transfers to the credit of the Bond Fund or the Renewal and Replacement Account, nor any amounts paid or required to be paid to the United States of America pursuant to the Resolution (except to the extent such rebate amounts must be paid from Revenues other than the investment income that generated the liability to the United States), [ii] non-capital Costs of Acquisition and Construction or other costs, to the extent composed of non-capital expenses, salaries, wages and fees that are necessary or incidental to capital improvements for which debt has been issued and which may be paid from proceeds of such debt or [iii] losses from the sale, abandonment, reclassification, revaluation or other disposition of properties of the System nor such property items, including taxes and fuel, which are capitalized pursuant to the then existing accounting practice of the District.

"Opinion of Counsel" means an opinion signed by an attorney or firm of attorneys of nationally recognized standing in the field of law relating to municipal bonds (who may be counsel to the District) selected by the District.

"Option Bonds" means Bonds which by their terms may be tendered by and at the option of the Holder thereof for payment or purchase by the District or a third party prior to the stated maturity thereof, or the maturities of which may be extended by and at the option of the Holder thereof

"Ordinary Services and Ordinary Expenses" shall mean those services normally rendered and those expenses normally incurred by a paying agent, bond registrar or trustee under instruments similar to the Note Resolution, including all costs of administering the optional redemption provisions contained in the Note Resolution including, but not limited to, reasonable attorneys' fees.

"Outstanding" when used with respect to Notes shall mean, as of the date of determination, all Notes theretofore authenticated and delivered under the Note Resolution, except:

Notes theretofore canceled by the Paying Agent or delivered to the Paying Agent for cancellation;

(a) Notes for whose payment or redemption money (which shall be Eligible Moneys to the extent, if any, provided in the Resolution) in the necessary amount has been theretofore deposited with the Paying Agent in trust for the Holders of such Notes, provided that, if such Notes are to be redeemed, notice of such redemption has been duly given pursuant to the Resolution or provision therefor satisfactory to the Paying Agent has been made;

(b) Notes in exchange for or in lieu of which other Notes have been authenticated and delivered pursuant to the Resolution; provided, however, that in determining whether the Holders of the requisite principal amount of Notes Outstanding have given any request, demand, authorization, direction, notice, consent or waiver hereunder, District Notes shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Paying Agent shall be protected in relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Notes of which the Responsible Officer of the Paying Agent located at the Paying Agent's principal corporate trust office has actual knowledge are District Notes are disregarded; and

(c) For purposes of any consent, request, demand, authorization, direction, notice, waiver or other action to be taken by the Holders of all or a specified percentage of Outstanding Notes hereunder, all District Notes.

"Outstanding" when used with reference to Bonds, means, as of any date, Bonds theretofore or thereupon being authenticated and delivered under the Resolution except:

(i) Bonds cancelled pursuant to the Resolution at or prior to such date;

(ii) Bonds (or portion of Bonds) for the payment or redemption of which monies, equal to the principal amount or Redemption Price thereof, as the case may be, with interest to the date of maturity or redemption date shall be held in trust under the Resolution and set aside for such payment or redemption (whether at or prior to the maturity or redemption date), provided that if such bonds (or portion of Bonds) are to be redeemed, notice of such redemption shall have been given or provision satisfactory to the District shall have been made for the giving of such notice as provided in the Resolution;

(iii) Bonds in lieu of or in substitution for which other Bonds shall have been authenticated and delivered pursuant to the Resolution;

(iv) Bonds deemed to have been paid as provided in the Resolution; and

(v) Option Bonds deemed tendered in accordance with the provisions of the Supplemental Resolution authorizing such Bonds on the applicable adjustment or conversion date if interest thereon shall have been paid through such applicable date and the purchase price thereof shall have been paid or amounts are available for such payment as provided in the Resolution.

"Paying Agent" means any bank or trust company organized under the laws of any state of the United States of America or any national banking association designated as paying agent for the Bonds of any Series, and its successor or successors hereafter appointed in the manner provided in the Resolution.

"Payment of the Notes" shall mean the payment in full of principal of, premium, if any, and interest on the Notes or provisions for such payment sufficient to discharge the Note Resolution.

"Person" shall mean any natural person, corporation, limited liability company, joint venture, cooperative, partnership, trust or unincorporated organization, government or governmental body or agency, political subdivision or other legal entity, as in the context may be appropriate.

"Pledged Property" means and includes the following property, as and when received by or for the account of the District, in each case pending the application or expenditure thereof in accordance with the Resolution: [i] the proceeds of sale of Bonds, [ii] all Revenues, [iii] all amounts on deposit in the Funds or Accounts established under the Resolution, [iv] such other amounts as may be pledged from time to time by the District as security for the payment of Bonds and [v] all proceeds of the foregoing.

"Principal Installment" means, as of the date of calculation and with respect to any Series, so long as any Bonds thereof are Outstanding, [i] the principal amount of Bonds of such Series due on a certain future date for which no Sinking Fund Installments have been established (including the principal amount of Option Bonds tendered for payment and not purchased), [ii] the Sinking Fund Installment due on a certain future date for Bonds of such Series and [iii] if such future dates coincide, the sum of such principal amount and such Sinking Fund Installment.

"Prior Bonds" or "Senior Debt" shall mean any bonds, notes or other obligations issued on a parity as to security and sources of payment pursuant to the Bond Resolution.

"Project" means a capital project of the District to be financed or refinanced with the proceeds of any of the Notes, and with respect to the Series 2017 Notes shall mean the refunding of certain of the District's outstanding Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2013.

"Rating Agency" shall mean Moody's, S&P and/or Fitch.

"Record Date" means a Regular Record Date or a Special Record Date.

"Redemption Date" when used with respect to any Note to be redeemed shall mean the date on which it is to be redeemed pursuant to the Resolution.

"Redemption Price" means, with respect to any Bond, the principal amount thereof plus the applicable premium, if any, payable upon redemption thereof pursuant to such Bond.

"Redemption Price" when used with respect to any Note to be redeemed shall mean the price at which it is to be redeemed.

"Refunding Bonds" means all Bonds, whether issued in one or more Series or as part of a Series, authenticated and delivered on original issuance pursuant to the Resolution.

"Renewal and Replacement Account" means the account of that name which is maintained pursuant to the Resolution.

"Reserve Account" means the Reserve Account of the Bond Fund.

"Resolution" means the Sewer and Drainage System Revenue Bond Resolution of the District originally adopted on December 9, 1992 and amended and restated in its entirety on June 30, 1993, as from time to time amended or supplemented.

"Responsible Officer" when used with respect to the Paying Agent shall mean the chairman or vice-chairman of the board of directors, the chairman or vice-chairman of the executive committee of the board of directors, the president, any vice-president, any trust officer, or any other officer of the Paying Agent customarily performing functions similar to those performed by any of the above designated officers and who, in any event is located at the principal corporate trust office of the Paying Agent and shall also mean, with respect to a particular corporate trust matter any other officer to whom such matter is referred because of his knowledge of and familiarity with the particular subject; with respect to any signature on or authentication of Notes by the Paying Agent, the term "Responsible Officer" shall also include any authorized signers of the Paying Agent.

"Revenue Fund" means the Revenue Fund which is maintained pursuant to the Resolution.

"Revenues" means all revenues, rates, fees, rents, charges and other operating income and receipts, as derived by or for the account of the District from or for the operation, use or services of the System, determined in accordance with generally accepted accounting principles and the enterprise basis of accounting. Revenues shall include, without limiting the generality of the foregoing, [i] revenue from capital charges recovered or reimbursed to the District, capacity charges and service connection fees, [ii] acquisition surcharges and assessments levied by the District (regardless of whether any of the same are allocated or designated by the District for capital expenditures) and [iii] interest or other income received or to be received from any source, including but not limited to interest or other income received or to be received on any monies or securities held pursuant to the Resolution. Revenues shall not include customer deposits and contributions in aid of construction, except to the extent the same would constitute revenues or income in accordance with generally accepted accounting principles.

"S&P" shall mean Standard & Poor's Ratings Group, a division of McGraw-Hill Financial Services Company, a corporation organized and existing under the laws of the State of New York, its successors and their assigns, and if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a municipal securities rating agency, S&P shall be deemed to refer to any other nationally recognized municipal securities rating agency designated by the District.

"Secretary-Treasurer" means the Secretary-Treasurer of the District, or such officer of the District as may succeed to the duties and responsibilities of the Secretary-Treasurer.

"Securities Exchange Act" means the Securities Exchange Act of 1934, as amended.

"Securities Depository" means any securities depository that is a "clearing corporation" within the meaning of the New York Uniform Commercial Code and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act, operating and maintaining, with its participants or otherwise, a Book-Entry System to record ownership of beneficial interests in bonds and bond service charges, and to effect transfers of bonds in Book-Entry Form, and means, initially, The Depository Trust Company (a limited purpose trust company), New York, New York.

"Securities Depository Nominee" means any nominee of a Securities Depository and shall initially mean Cede & Co., New York, New York, as nominee of The Depository Trust Company.

"Senior Debt" or "Prior Bonds" shall mean any bonds, notes or other obligations issued on a parity as to security and sources of payment pursuant to the Bond Resolution.

"Senior Subordinated Debt Fund" means the Senior Subordinated Debt Fund which is maintained pursuant to the Resolution.

"Series" means all of the Bonds authenticated and delivered on original issuance and identified pursuant to the Resolution or any Supplemental Resolution authorizing such Bonds as a separate Series of Bond, and any Bonds thereafter authenticated and delivered in lieu of or in substitution for such Bonds pursuant to the Resolution, regardless of variations in maturity, interest rate, Sinking Fund Installments, or other provisions.

"Series 2017 Notes" shall mean the District's Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2017 issued pursuant to the Note Resolution.

"Sinking Fund Installment" means an amount so designated which is established pursuant to the Resolution.

"Stated Maturity" when used with respect to any Note or any installment of interest thereon shall mean the date specified in such Note as the fixed date on which principal of such Note or such installment of interest is due and payable.

"Subordinated Debt Subaccounts" shall have the meaning assigned to such term in Section 6.05 of the Note Resolution.

"Subordinated Debt" means indebtedness of the System which is subordinate to the Bonds issued under the Resolution including the Senior Subordinated Debt.

"Supplemental Resolution" means any resolution supplemental to or mandatory of this Resolution adopted by the District in accordance with the Resolution.

"System" means [i] the sewer facilities, drainage facilities and all appurtenant facilities or any other facilities owned, operated or controlled by the District from time to time, [ii] any Project and [iii] all improvements, additions, extensions and betterments to the foregoing which may be hereafter acquired by the District by any means whatsoever.

"Trust Funds" shall mean all of the funds and accounts held by the Paying Agent pursuant to Note Resolution, but otherwise excluding the Rebate Fund.

"Trust Moneys" shall have the meaning stated in the Note Resolution.

"Valuation Date" means with respect to any Capital Appreciation Bonds and Capital Appreciation and Income Bonds, the date or dates set forth in the Supplemental Resolution authorizing such Bonds on which specific Accreted Values or Appreciated Values are assigned to the Capital Appreciation Bonds and Capital Appreciation and Income Bonds, as the case may be.

"Variable Interest Rate" means a variable interest rate to be borne by a Series of Bonds or any one or more maturities within a Series of Bonds.

"Variable Interest Rate Bonds" for any period means bonds which during such period bear a Variable Interest Rate, provided that Bonds the interest rate on which shall have been fixed for the remainder of the term thereof shall no longer be Variable Interest Rate Bonds.

"Vice-Chairperson" means the Vice-Chairperson of the District, or such officer of the District as may succeed to the duties and responsibilities of the Vice-Chairperson.

SUMMARY OF PROVISIONS OF THE BOND RESOLUTION

The Pledge Affected by the Resolution.

The Bonds are special and limited obligations of the District payable, solely from and secured as to the payment of the principal and Redemption Price thereof, and interest thereon, in accordance with their terms and the provisions of the Resolution, solely from the Pledged Property. There are by the Resolution pledged and assigned as security for the payment of the principal and Redemption Price of, and interest on, the Bonds in accordance with their terms and the provisions of the Resolution, subject only to the provisions of the Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Resolution, the Pledged Property.

Establishment of Funds and Accounts.

The Resolution establishes the following Funds and Accounts:

(a) Construction and Acquisition Fund to be held by the District,

(b) Revenue Fund to be held by the District,

(c) Bond Fund to be held by the Paying Agent which shall consist of a Debt Service Account and a Reserve Account,

(d) Renewal and Replacement Account to be held by the District, and

(e) Senior Subordinated Debt Fund to be held by the District.

The District may, for accounting or allocation purposes, [i] establish one or more additional accounts or subaccounts within the Construction and Acquisition Account, the Revenue Fund, the Bond Fund or the Renewal and Replacement Account, or [ii] to the extent not expressly prohibited by other provisions hereof, commingle amounts between or among any or all of such Funds or Accounts, except the Senior Subordinated Debt Fund.

Construction and Acquisition Fund.

There shall be paid into the Construction and Acquisition Fund the amounts required to be so paid by the provisions of the Resolution, and there may be paid into the Construction and Acquisition Fund, at the option of the District, any monies received by the District from any source, unless required to be otherwise applied as provided by the Resolution. Amounts in the Construction and Acquisition Fund shall be applied to pay the Cost of Construction and Acquisition in the manner provided in the Resolution and the Supplemental Resolution authorizing a Series of Bonds to finance the Cost and Acquisition of a Project.

There shall be established within the Construction and Acquisition Fund a separate account for a Project.

The proceeds of insurance, if any, maintained pursuant to the Resolution against physical loss of or damage to the System, or of contractors' performance bonds or other assurances of completion with respect thereof, or pertaining to the period of construction thereof, shall be paid into the appropriate separate account in the Construction and Acquisition Fund.

The Secretary-Treasurer of the District shall make payments from the Construction and Acquisition Fund, except payments and withdrawals pursuant to the Resolution as described in the next paragraph, in the amounts, at the times, in the manner, and on the other terms and conditions set forth in the Resolution. The Secretary-Treasurer or other Authorized Officer of the District shall maintain adequate records in respect of all payments made, including [a] the particular account established within the Construction and Acquisition Fund from which such payment is to be made, [b] the name and address of the person, firm or corporation to whom payment is due, [c] the amount to be paid and [d] the particular item of the Cost of Construction and Acquisition to be paid and that the cost or the obligation in the stated amount is a proper charge against the Construction and Acquisition Fund which has not been previously paid. The Secretary-Treasurer shall issue a check for each payment required by such requisition or shall by interbank transfer or other method arrange to make the payment required by such requisition.

Notwithstanding any of the provisions of the Resolution as described under this caption, except as provided below, to the extent that other monies are not available therefor, amounts in the Construction and Acquisition Fund shall be applied to the payment of Principal Installments of and interest on Bonds when due; provided, however, that proceeds (and investment earnings thereon) from the issuance by the District of Senior Subordinated Debt shall not be subject to the priority in favor of the Bonds created by the Resolution, but may instead be pledged by the District as security and a source of payment first for the Senior Subordinated Debt pursuant to the resolution or resolutions of the District authorizing such Senior Subordinated Debt, in which event such amounts shall be applied to the payment of debt service on the Senior Subordinated Debt when due to the extent that other monies are not available therefor, and shall not be used to pay debt service on any Bonds if there is any Senior Subordinated Debt which remains outstanding and unpaid.

An adequate record of the completion of construction of a Project financed in whole or in part by the issuance of Bonds shall be maintained by an Authorized Officer of the District. The balance in the separate account in the Construction and Acquisition Fund established therefor shall be transferred to the Reserve Account in the Bond Fund, if and to the extent necessary to make the amount of such Account equal to the Debt Service Reserve Requirement, and any excess amount shall be paid over or transferred to the District for deposit in the Revenue Fund.

Application of Revenues.

All Revenues shall be promptly deposited by the District upon receipt thereof into the Revenue Fund.

There shall be withdrawn in each month the following amounts, for deposit as set forth below and in the order of priority set forth below.

(i) To the Bond Fund, (i) for credit to the Debt Service Account, the amount, if any, required so that the balance in such Account shall equal the Accrued Aggregate Debt Service as of the last day of the then current month or, if interest or principal are required to be paid to Holders of Bonds during the next succeeding month on a day other than the first day of such month, Accrued Aggregate Debt Service as of the day through and including which such interest or principal is required to be paid and (ii) for credit to the Reserve Account, the amount, if any, required for such Account, after giving effect to any surety bond, insurance policy, letter of credit or other similar obligation deposited in such Account pursuant to the Resolution, to equal one-twelfth (1/12) of the difference between (a) the amount then in the Reserve Account immediately preceding such deposit and (b) the actual Debt Service Reserve Requirement as of the last day of the then current month; and

(ii) To the Senior Subordinated Debt Fund the amount, if any, required to pay the scheduled base and additional rental payments when due on the Senior Subordinated Debt and make deposits, if any, for reserves therefor, in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in, the Senior Subordinated Debt; and

(iii) Each month the District shall pay from the Revenue Fund such amounts as are necessary to meet Operating Expenses for such month; and

(iv) To the Renewal and Replacement Account, a sum equal to 1/12 of the amount, if any, provided in the Annual Budget to be deposited in the Renewal and Replacement Account during the then current Fiscal Year; provided that, if any such monthly allocation to the Renewal and Replacement Account shall be less than the required amount, the amount of the next succeeding monthly payment shall be increased by the amount of such deficiency.

The balance of monies remaining in the Revenue Fund after the above required payments have been made may be used by the District for any lawful purpose relating to the System; provided, however, that none of the remaining monies shall be used for any purpose other than those hereinabove specified unless all current payments and including all deficiencies in prior payments, if any, have been made in full and unless the District shall have complied fully with all the covenants and provisions of the Resolution.

So long as there shall be held in the Debt Service Account and the Reserve Account an amount sufficient to pay in full all Outstanding Bonds in accordance with their terms (including principal or applicable sinking fund Redemption Price and interest thereon), no transfers shall be required to be made to the Bond Fund; and provided further, that any deficiency in the Reserve Account, after giving effect to any surety bond, insurance policy or letter of credit deposited in such Account pursuant to the Resolution as described in the fourth paragraph under the caption "Bond Fund - Reserve Account" herein, other than a deficiency attributable to a withdrawal of amounts therefrom pursuant to the Resolution as described in the first paragraph under the caption "Bond Fund - Reserve Account" herein, shall be cured by depositing into the Reserve Account each month during the period commencing with the month following the month in which the determination of the deficiency was made an amount equal to one-twelfth (1/12th) of the deficiency, except that, if a new valuation of Investment Securities held in the Reserve Account is made pursuant to the Resolution during the period that such deposits are required, then the obligation of the District to make deposits during the balance of such period on the basis of the preceding valuation shall be discharged and the deposits, if any, required to be made for the balance of such period shall be determined under this proviso on the basis of the new valuation.

***Bond Fund - Debt Service Account*.**

The Paying Agent, from amounts deposited therein, shall pay out of the Debt Service Account, [i] on or before each interest payment date for any of the Bonds, the amount required for the interest payable on such date, [ii] no later than each Principal Installment due date, the amount required for the Principal Installment payable on such due date and [iii] no later than any redemption date for the Bonds, the amount required for the payment of interest on the Bonds then to be redeemed. In the case of Variable Interest Rate Bonds, the District shall furnish the Paying Agent with a certificate setting forth the amount to be paid on such Bonds on each interest payment date, such certificate shall be furnished on or prior to the appropriate Record Date with respect to any interest payment date. Such amounts shall be applied by the Paying Agents on or after the due dates thereof. The Paying Agent shall also pay out of the Debt Service Account, from amounts deposited therein, the accrued interest included in the purchase price of Bonds purchased for retirement.

Amounts accumulated in the Debt Service Account with respect to any Sinking Fund Installment may be applied on or prior to the 40th day next preceding the due date of such Sinking Fund Installment, to [i] the purchase of Bonds of the Series and maturity for which such Sinking Fund Installment was established or [ii] the redemption at the applicable sinking fund Redemption Price of such Bonds, if then redeemable by their terms. All purchases of any Bonds pursuant to the Resolution as described in this paragraph shall be made at prices not exceeding the applicable sinking fund Redemption Price of such Bonds plus accrued interest. The applicable sinking fund Redemption Price (or principal amount of maturing Bonds) of any Bonds so purchased or redeemed shall be deemed to constitute part of the Debt Service Account until such Sinking Fund Installment date, for the purpose of calculating the amount of such Account. As soon as practicable after the 40th day preceding the due date of any such Sinking Fund Installment, the District shall proceed to call for redemption, by giving notice as provided in the Resolution, on such due date Bonds of the Series and maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as shall be necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment. The District shall pay out of the Debt Service Account to the appropriate Paying Agents, on or before such redemption date (or maturity date), the amount required for the redemption of the Bonds so called for redemption (or for the payment of such Bonds then maturing), and such amount shall be applied by such Paying Agents to such redemption (or payment).

Unless otherwise provided by the District, upon any purchase or redemption pursuant to the Resolution of Bonds of any Series and maturity for which Sinking Fund Installments shall have been established, there shall be credited, in increments of $5,000 to the extent practicable, toward each succeeding Sinking Fund Installment thereafter to become due on Bonds, of the same series and maturity (other than the Sinking Fund Installment next coming due) an amount bearing the same ratio, to the Sinking Fund Installment, as the total principal amount of Bonds purchased or redeemed bears to the total principal amount of all the Sinking Fund Installments to be credited. The portion of any principal Sinking Fund Installment remaining after the deduction of any such amounts are credited toward the same shall constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

The amount, if any, deposited in the Debt Service Account from the proceeds of each Series of Bonds shall be set aside in such Account and applied to the payment of interest on Bonds as provided in the Resolution or in accordance with certificates of the District delivered pursuant to the Resolution or, if the District shall modify or amend any such certificate by a subsequent certificate signed by an Authorized Officer of the District, then in accordance with the most recent amended certificate.

In the event of the refunding of any Bonds, the District may withdraw from the Debt Service Account in the Bond Fund all, or any portion of, the amounts accumulated therein with respect to Debt Service on the Bonds being refunded and deposit such amounts with itself to be held for the payment of the principal or Redemption Price, if applicable, and interest on the Bonds being refunded; provided that such withdrawal shall not be made unless (a) immediately thereafter Bonds being refunded shall be deemed to have been paid pursuant to the Resolution as described herein under the caption "Defeasance," and (b) the amount remaining in the Debt Service Account in the Bond Fund, after giving effect to the issuance of Refunding Bonds and the disposition of the proceeds thereof, shall not be less than the requirement of such Account pursuant to the Resolution in the second paragraph under this caption. In the event of such refunding, the District may also withdraw from the Debt Service Account in the Bond Fund all, or any portion of, the amounts accumulated therein with respect to Debt Service on the Bonds being refunded and deposit such amounts in any fund or Account under the Resolution; provided, however, that such withdrawal shall not be made unless items (a) and (b) referred to hereinabove have been satisfied and provided, further, that, at the time of such withdrawal, there shall exist no deficiency in any Fund or Account held under the Resolution, as confirmed in writing to the Bond Registrar by the Secretary-Treasurer.

Bond Fund - Reserve Account.

If five days prior to any interest or Principal Installment due date with respect to any Series of Bonds payment for such interest or Principal Installment in full has not been made or provided for, the District shall forthwith withdraw from the Reserve Account an amount not exceeding the amount required to provide or such payment in full and deposit such amount in the Debt Service Account for application to such payment.

Whenever the amount in the Reserve Account shall exceed the Debt Service Reserve Requirement, after giving effect to any surety bond, insurance policy or letter of credit deposited in such Account pursuant to the Resolution as described in the fourth paragraph under this caption, such excess shall be deposited in the Debt Service Account.

Whenever the amount in the Reserve Account (exclusive of any surety bond, letter of credit or insurance policy therein), together with the amount in the Debt Service Account is sufficient to pay in full all Outstanding Bonds in accordance with their terms (including principal or applicable sinking fund Redemption Price and interest thereon), the funds on deposit in the Reserve Account shall be transferred to the Debt Service Account. Prior to said transfer, all investments held in the Reserve Account shall be liquidated to the extent necessary in order to provide for the timely payment of principal and interest (or Redemption Price) on the Bonds.

In lieu of the required transfers or deposits to the Reserve Account, the District may cause to be deposited into the Reserve Account a surety bond or an insurance policy for the benefit of the holders of the Bonds or a letter of credit in an amount equal to the difference between the Debt Service Reserve Requirement and the sums then on deposit in the Reserve Account, if any, after the deposit of such surety bond, insurance policy or letter or credit. Such difference may be withdrawn by the District and be deposited in the Revenue Fund. The surety bond, insurance policy or letter of credit shall be payable (upon the giving of notice as required thereunder) on any due date on which monies will be required to be withdrawn from the Reserve Account and applied to the payment of a Principal Installment of or interest on any Bonds and such withdrawal cannot be met by amounts on deposit in the Reserve Account. If a disbursement is made pursuant to a surety bond, an insurance policy or a letter of credit provided pursuant to this subsection, the District shall be obligated either (i) to reinstate the maximum limits of such surety bond, insurance policy or letter of credit or (ii) to deposit into the Reserve Account, funds in the amount of the disbursement made under such surety bond, insurance policy or letter of credit, or a combination of such alternatives, as shall provide that the amount in the Reserve Account equals the Debt Service Reserve Requirement. Any other provision under this caption to the contrary notwithstanding, for each particular Series of Bonds or portion thereof which is insured by an Insurer, the right of the District under the Resolution to cause a surety bond or an insurance policy to be deposited into the Reserve Account in lieu of the required transfers or deposits thereto shall be subject to the condition that the District obtain the prior written consent of the Insurer as to the structure and the issuer of such surety bond or insurance policy.

In the event of the refunding of any Bonds, the District may withdraw from the Reserve Account in the Bond Fund all, or any portion of, the amounts accumulated therein with respect to the Bonds being refunded and deposit such amounts with itself to be held for the payment of the principal or Redemption Price, if applicable, and interest on the Bonds being refunded; provided that such withdrawal shall not be made unless (a) immediately thereafter the Bonds being refunded shall be deemed to have been paid pursuant to the Resolution as described in the second paragraph under the caption "Defeasance" herein, and (b) the amount remaining in the Reserve Account in the Bond Fund, after giving effect to the issuance of the Refunding Bonds and the disposition of the proceeds thereof, shall not be less than the Debt Service Reserve Requirement.

If any withdrawals are made from the Reserve Account pursuant to the Resolution, the resulting deficiency, if any, shall be remedied by the application of monthly payments into the Reserve Account as set forth in the Resolution, or by transfers from the Renewal and Replacement Account or both, until the amount on deposit in the Reserve Account is equal to the Debt Service Reserve Requirement, whereupon such deposits shall be discontinued until such time, if any, that there is again a deficiency.

Renewal and Replacement Account.

Monies to the credit of the Renewal and Replacement Account may be applied to the cost of major replacements, repairs, renewals, maintenance, betterments, improvements, reconstruction or extensions of the System or any part thereof as may be determined by the Board.

If at any time the monies in the Debt Service Account, the Reserve Account and the Revenue Fund shall be insufficient to pay the interest and Principal Installments becoming due on the Bonds, then the District shall transfer from the Renewal and Replacement Account for deposit in the Debt Service Account the amount necessary (or all the monies in said Fund if less than the amount necessary) to make up such deficiency.

Any balance of monies and securities in the Renewal and Replacement Account not required to meet a deficiency as set forth above or for any of the purposes for which the Renewal and Replacement Account was established, may, on direction of the District, be transferred from the Renewal and Replacement Account to the Reserve Account, if and to the extent necessary to make the amount in such Account equal to the Debt Service Reserve Requirement, and any balance may be deposited in the Debt Service Account or the Revenue Fund.

Senior Subordinated Debt Fund.

Subject to the provisions of the Resolution described in the next paragraph, the District shall apply amounts in the Senior Subordinated Debt Fund to the payment of debt service or the scheduled base and additional rental payments when due on the Senior Subordinated Debt and make deposits, if any, for reserves therefor in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in, the Senior Subordinated Debt.

Notwithstanding any of the other provisions of the Resolution described under this caption, if at any time the amount on deposit in the Reserve Account shall be less than the Debt Service Reserve Requirement, the District shall forthwith transfer from the Senior Subordinated Debt Fund for deposit in the Reserve Account the amount necessary (or all moneys in said Senior Subordinated Debt Fund, if necessary) to make up such deficiency.

Amounts in the Senior Subordinated Debt Fund which the District at any time determines to be in excess of the requirements of such fund may, at the discretion of the District, be transferred to the Debt Service Account or the Renewal and Replacement Account.

Investments.

In making any investment in any Investment Securities with monies in any Fund or Account established under the Resolution, the District may combine, to the extent permitted by law, or instruct such Fiduciary to combine, such monies with monies in any other Fund or Account, but solely for purposes of making such investment in such Investment Securities.

Monies held in the Bond Fund, the Revenue Fund, the Renewal and Replacement Account, the Senior Subordinated Debt Fund and the Construction and Acquisition Fund shall be invested and reinvested to the fullest extent practicable in Investment Securities, maturing not later than such times as shall be necessary to provide monies when needed for payments to be made from such Fund or Account. The Fiduciary, shall make all such investments of monies held by it in accordance with written instructions from time to time received from an Authorized Officer of the District.

Interest (net of that which represents a return of accrued interest) or gain realized on investments in such Funds and Accounts other than the Reserve Account of the Bond Fund, shall be paid into the Revenue Fund, provided that gain realized from the liquidation of an investment shall be governed by the provisions described below. Interest earned or gain realized on investments in the Reserve Account shall be transferred to the Debt Service Account, provided that gain realized from the liquidation of an investment shall be governed by the provisions of the Resolution as described in the first paragraph under the caption "Valuation and Sale of Investments" herein.

Nothing in the Resolution shall prevent any Investment Securities acquired as investments of or security for funds held under the Resolution from being issued or held in book-entry form on the books of the Department of the Treasury of the United States.

Nothing in the Resolution shall preclude any Fiduciary from investing or reinvesting monies through its respective trust department; provided, however, that the District may, in its discretion, direct that such monies be invested or reinvested in a manner other than through such respective trust department.

Valuation and Sale of Investments.

Obligations purchased as an investment of monies in any Fund or Account created under the provisions of the Resolution shall be deemed at all times to be a part of such Fund or Account. Any profit realized from the liquidation of such investment shall be credited to such Fund or Account, and any loss resulting from the liquidation of such investment shall be charged to the respective Fund or Account.

In computing the amount in any Fund or Account created under the provisions of the Resolution for any purpose provided in the Resolution, investments shall be valued at the then market price (as of the time of valuation) thereof. The accrued interest paid in connection with the purchase of an investment shall be included in the value thereof until interest on such investment is paid. Such computation shall be determined on June 30 and December 31 in each Fiscal Year and at such other times as the District shall determine.

Additional Bonds.

One or more Series of Additional Bonds may be authenticated and delivered upon original issuance at any time or from time to time for the purpose of paying all or a portion of the Cost of Construction and Acquisition of a Project. The proceeds, including accrued interest, of the Additional Bonds of each Series shall be applied simultaneously with the delivery of such Bonds as provided in the Supplemental Resolution authorizing such Series. The conditions for the issuance of Additional Bonds to finance the Acquisition and Construction of Additional Facilities include a certificate of an Authorized Officer of the District setting forth (A) for any period of 12 consecutive calendar months within the 24 calendar months preceding the date of the authentication and delivery, the Net Revenues for such period, and (B) the Aggregate Net Debt Service during the same period for which Net Revenues are computed, with respect to all Series of Bonds which were then Outstanding (excluding from Aggregate Net Debt Service any Principal Installment or portion thereof which was paid from sources other than Net Revenues), and showing that the amount set forth in (A) is equal to or greater than 110% of the amount set forth in (B). The conditions for the issuance of Additional Bonds to finance the Acquisition and Construction of Additional Facilities include a certificate of an Authorized Officer of the District setting forth (A) for the last full Fiscal Year of 12 months (ending June 30) immediately preceding the date of the authentication and delivery, the Net Revenues for such period, or, at the option of the District, for the last 12 consecutive full calendar months immediately preceding the date of the authentication and delivery, the Net Revenues for such period, and (B) the estimated maximum Aggregate Net Debt Service in the current or any future Fiscal Year with respect to [i] all Series of Bonds which are then Outstanding and [ii] the Additional Bonds then proposed to be authenticated and delivered (and for this purpose all Series of Bonds Outstanding plus such proposed Additional Bonds shall be treated as a single Series; that is, the maximum Aggregate Net Debt Service shall be computed collectively with respect to all such Bonds, and not computed cumulatively or separately for each particular Series), and showing that the amount set forth in (A) is equal to or greater than 110% of the amount set forth in (B). For purposes of computing the amount set forth in (A), Net Revenues may be increased to reflect the following amounts: [i] any increases in the rates, fees, rents and other charges for services of the System made subsequent to the commencement of such period and prior to the date of such certificate, [ii] any estimated increases in Net Revenues caused by any Project or Projects having been placed into use and operation subsequent to the commencement of such period and prior to the date of such certificate, as if such Project or Projects had actually been placed into use and operation for the entire period chosen in (A) above and [iii] 75% of any estimated increases in Net Revenues which would have been derived from the operation of any Project or Projects with respect to which the Cost of Construction and Acquisition is to be paid from proceeds of the Additional Bonds proposed to be authenticated and delivered, as if such Project or Projects had actually been placed into use and operation for the entire period chosen in (A) above.

Refunding Bonds.

One or more Series of Refunding Bonds may be issued at any time to refund [i] Outstanding Bonds of one or more Series or [ii] one or more maturities within a Series of any Bonds. Refunding Bonds shall be issued in a principal amount sufficient, together with other monies available therefor, to accomplish such refunding and to make the deposits in the Funds and Accounts under the Resolution required by the provisions of the Supplemental Resolution authorizing such Bonds.

Refunding Bonds of each Series shall be authenticated and delivered by the Bond Registrar only upon satisfaction of the following conditions (in addition to the other documents required by the

Resolution) of: [i] Instructions to the Bond Registrar, satisfactory to it, to give due notice of redemption, if applicable, of all the Bonds to be refunded on a redemption date or dates specified in such instructions, subject to the provisions of the Resolution described hereinafter under the caption "Defeasance"; [ii] if the Bonds to be refunded are not by their terms subject to redemption or will not be redeemed within the next succeeding 60 days, instructions to the escrow agent described in the Resolution, satisfactory to it, to mail the notice provided for in the Resolution described hereinafter under the caption "Defeasance" to the Holders of the Bonds being refunded; [iii] either (a) cash (including cash withdrawn and deposited pursuant to the Resolution as described herein under the captions "Bond Fund - Debt Service Account" and "Bond Fund - Reserve Account," respectively) in an amount sufficient to effect payment at the applicable Redemption Price of the Bonds to be refunded, together with accrued interest on such Bonds to the redemption date, which monies shall be held by the escrow agent described in the Resolution or any one or more of the Paying Agents in a separate account irrevocably in trust for and assigned to the respective Holders of the Bonds to be refunded or (b) Investment Securities in such principal amounts, of such maturities, bearing such interest, and otherwise having such terms and qualifications and any monies, as shall be necessary to comply with the provisions of the Resolution as described herein under the caption "Defeasance", which Investment Securities and monies shall be held in trust and used only as provided in the Resolution described hereinafter under the caption "Defeasance"; and [iv] such further documents and monies as are required by the provisions of the Resolution or any Supplemental Resolution adopted pursuant to the Resolution.

The proceeds, including accrued interest, of the Refunding Bonds of each Series shall be applied simultaneously with the delivery of such Bonds for the purposes of making deposits in such Funds and Accounts under the Resolution as shall be provided by the Supplemental Resolution authorizing such Series of Refunding Bonds and shall be applied to the refunding purposes thereof in the manner provided in such Supplemental Resolution.

Subordinated Debt.

The District may, at any time, or from time to time, issue debt or enter into a contract, lease, installment sale agreement or other instrument or lend credit to or guarantee debts, claims or other obligations of any person for any of its corporate purposes payable out of, and which may be secured by a pledge of, such amounts as may from time to time be available for the purpose of payment thereof; provided, however, that such pledge shall be, and shall be expressed to be, subordinate and junior in all respects to the pledge and lien created by the Resolution as security for the Bonds.

Creation of Liens; Sale and Lease of Property.

The District shall not issue any bonds, notes, debentures or other evidences of indebtedness of similar nature, other than the Bonds, payable out of or secured by a pledge or assignment of the Pledged Property and shall not create or cause to be created any lien or charge on the Pledged Property; provided, however, that nothing contained in the Resolution shall prevent the District from issuing, if and to the extent permitted by law [i] evidences of indebtedness (a) payable out of monies in the Construction and Acquisition Fund as part of the Cost of Construction and Acquisition of the System or (b) payable out of, or secured by a pledge or assignment of, Revenues to be received on and after such date as the pledge of the Pledged Property provided in the Resolution shall be discharged and satisfied as provided in the Resolution or [ii] Subordinated Debt.

Facilities of the System shall not be sold, leased, mortgaged or otherwise disposed of, except as follows: (A) The District may sell or exchange at any time and from time to time any property or facilities constituting part of the System, at such consideration as the District in its sole discretion deems reasonable or appropriate under all the circumstances, but only if it shall determine that ownership by the District of such property or facilities is not necessary or is not material for the purposes of the District in the operation of the System as a whole; or (B) The District may lease or make contracts or grant licenses for the operation of, or make arrangements for the use of, or grant easements or other rights with respect to, any part of the System, provided that any such lease, contract, license, arrangement, easement or right [i] does not materially impede the operation by the District or its agents of the System and [ii] does not materially impair or adversely affect the rights or security of the Bondholders under the Resolution.

Operation and Maintenance of System.

The District shall at all times use its best efforts to operate or cause to be operated the System properly and in an efficient and economical manner, and shall use its best efforts to maintain, preserve and keep the same or cause the same to be so maintained, preserved and kept, with the appurtenances and every part and parcel thereof, in good repair, working order and condition, and shall from time to time make or cause to be made, all necessary and proper repairs, replacements and renewals so that at all times the operation of the System may be properly and advantageously conducted. In rendering any report, certificate or opinion requested pursuant to the Resolution, an Authorized Officer of the District may rely upon information, certificates, opinions or reports required to be provided by others pursuant to the Resolution, and upon other sources which an Authorized Officer of the District considers reliable, and other considerations and assumptions as deemed appropriate by an Authorized Officer of the District.

Annual Budget.

On or before the first day of each Fiscal Year commencing with the Fiscal Year beginning July 1, 1993, the District shall prepare and adopt an Annual Budget for operating purposes for the ensuing Fiscal Year and will furnish copies thereof to any holder of any Bond. Said Annual Budget shall set forth in reasonable detail the estimated Revenues and Operating Expenses and other anticipated expenditures relating to the System for such Fiscal Year. Following the end of each fiscal quarter and at such other times as the District shall determine, the District shall review its estimates set forth in the Annual Budget for such Fiscal Year, and if a material change has occurred in such estimates, the District also may at any time adopt an amended Annual Budget for the remainder of the then current Fiscal Year.

Rents, Rates, Fees and Charges.

The District shall fix, establish, maintain and collect rates, fees, rents and charges for services of the System, which, together with other "Available Revenues" (as hereinafter defined) are expected to produce Available Revenues which will be at least sufficient for each Fiscal Year to pay the sum of [a] an amount equal to 110% of the Aggregate Net Debt Service for such Fiscal Year; and [b] the amount, if any, to be paid during such Fiscal Year into the Reserve Account in the Bond Fund (other than amounts required to be paid into such Account out of the proceeds of Bonds); and [c] all Operating Expenses for such Fiscal Year as estimated in the Annual Budget; and [d] to the extent not included in the foregoing, an amount equal to the debt service on the Senior Subordinated Debt, any other Subordinated Debt or other debt of the District for such Fiscal Year computed as of the beginning of such Fiscal Year; and [e] amounts necessary to pay and discharge all charges or liens payable out of the Available Revenues when due and enforceable.

For purposes of the preceding paragraph, "Available Revenues" means (i) revenues from all rates, rents and charges and other operating income derived or to be derived by the District from or for the operation, use or services of the System, (ii) any other amounts received from any other source by the District and pledged by the District as security for the payment of Bonds and (iii) interest received or to be received on any moneys or securities held pursuant to the Resolution and paid or required to be paid into the Revenue Fund or required to be retained in the Debt Service Account in the Bond Fund or transferred to the Debt Service Account in the Bond Fund. "Available Revenues" will exclude, however, any interest income which is capitalized pursuant to generally accepted accounting principles and the enterprise basis of accounting for governmental enterprises, as promulgated by the Governmental Accounting Standards Board, and governmental grants, in-kind contributions of assets and any assessments levied by the District to the extent that such grants, in-kind contributions and assessments are not recognized as operating revenues, other revenues or extraordinary gains pursuant to generally accepted accounting principles for governmental enterprises, as promulgated by the Governmental Accounting Standards Board. Nothing herein under this caption or in the definition of "Available Revenues" for purposes of the covenant described in the preceding paragraph, shall be construed so as to prohibit the District from taking into account interest earned on moneys or securities held under the Resolution, and other income available or expected to be available in the ordinary course for the payment of Debt Service pursuant to the Resolution, in calculating Aggregate Net Debt Service on the Bonds for any calculation period for purposes hereof or otherwise, nor prohibit the District from taking into account interest earned on moneys or securities held under any Resolution or indenture or similar document adopted or entered into in connection with an issuance of Subordinated Debt, and other income available or expected to be available in the ordinary course for the payment of debt service on Subordinated Debt, in calculating debt service payable on Subordinated Debt for any calculation period for purposes hereof or otherwise.

Promptly upon [i] any material decrease in the Revenues anticipated to be produced by any rates, fees, rents or charges or any later review thereof, [ii] any material increase in expenses of operation of the System not contemplated at the time of adoption of the rates, fees, rents and charges then in effect or any later review thereof or [iii] any other material change in the circumstances which were contemplated at the time such rates, fees, rents and charges were most recently reviewed, but not less frequently than once every 12 months, the District shall review the rates, fees, rents and charges so established and shall promptly establish or revise such rates, fees, rents and charges as necessary to comply with the foregoing requirements, provided that such rates, fees, rents and charges shall in any event produce Revenues sufficient, together with other Revenues, if any, available therefor, to enable the District to comply with all its covenants under the Resolution.

In estimating Aggregate Debt Service or Aggregate Net Debt Service on any Variable Interest Rate Bonds for purposes of the first paragraph under this caption, the District shall be entitled to assume that such Variable Interest Rate Bonds will bear such interest rate or rates as the District shall determine; provided, however, that the interest rate or rates assumed shall not be less than the interest rate borne by such Variable Interest Rate Bonds at the time such estimate is made.

Insurance

Maintenance of Insurance.

The District shall provide protection for the System to the extent necessary to properly conduct the business of the System. Said protection may consist of insurance, self-insurance and indemnities. Any insurance shall be in the form of policies or contracts for insurance with insurers of good standing, shall be payable to the District and may provide for such deductibles, exclusions, limitations, restrictions and restrictive endorsements customary in policies for similar coverage issued to entities operating properties similar to the properties of the System.

Application of Insurance Proceeds.

In the event of any loss or damage to the System covered by insurance, the District will, with respect to each such loss, promptly repair, reconstruct or replace the parts of the System affected by such loss or damage to the extent necessary to the proper conduct of the operation of the business of the System, shall cause the proceeds of such insurance to be applied for that purpose to the extent required therefor, and pending such application shall hold the proceeds of any insurance policy covering such damage or loss in trust to be applied for that purpose to the extent required therefor. Any excess insurance proceeds received by the District shall be transferred to the Revenue Fund.

Accounts and Reports.

The District shall keep or cause to be kept proper books of record and account (separate from all other records and accounts) in which complete and correct entries shall be made of its transactions relating to the System and each Fund and Account established under the Resolution and which, together with all other books and papers of the District, including insurance policies, relating to the System, shall at all times be subject to the inspection of the Bondholders and the Holders of an aggregate of not less than ten percent (10%) in principal amount of the Bonds then Outstanding or their representatives duly authorized in writing.

The District shall annually, within 180 days after the close of each Fiscal Year commencing with the Fiscal Year ending June 30, 1993, prepare an audit for such Fiscal Year, accompanied by a certificate of an Accountant relating to the System which shall include the following statements in reasonable detail: a statement of assets and liabilities as of the end of such Fiscal Year; and a statement of Revenues and Operating Expenses for such Fiscal Year. Such Certificate shall state whether or not, to the knowledge of the signer, the District is in default with respect to any of the covenants, agreements or conditions on its part contained in the Resolution, and if so, the nature of such default.

The reports, statements and other documents required pursuant to any provisions of the Resolution shall be available for the inspection of Bondholders and shall be mailed to each Bondholder who shall file a written request therefor with the District. The District may charge for such reports, statements and other documents, a reasonable fee to cover reproduction, handling and postage.

Tax Covenants Relating to the Internal Revenue Code.

The District shall do the following with respect to Bonds which, when initially issued, are the subject of an Opinion of Counsel to the effect that interest thereon is excluded from gross income for Federal income tax purposes pursuant to the Internal Revenue Code of 1986 or any successor thereto (the "Code"): [a] in order to maintain the exclusion of interest on the Bonds from gross income for Federal income tax purposes, and for no other purpose, the District shall comply with the Code; [b] in furtherance of the covenant contained in the preceding paragraph, the District shall make any and all payments required to be made to the United States Department of the Treasury in connection with the Bonds pursuant to Section 148(f) of the Internal Revenue Code; and [c] Notwithstanding any other provision of the Resolution to the contrary, so long as necessary in order to maintain the exclusion from gross income of interest on the Bonds for Federal income tax purposes, the covenants contained in this Section thereon, including any payment or defeasance thereof pursuant to the Resolution as described under the caption "Defeasance" herein.

Events of Default.

Each of the following events (being those provided by Section 76.160 of the Kentucky Revised Statutes) is hereby declared an "event of default"; that is, if: [a] payment of the principal of any of the Bonds is not made on the date therein specified for payment thereof, nor within thirty (30) days thereafter, or payment of any installment of interest is not made on the date specified for such payment, nor within thirty (30) days thereafter, or [b] default shall be made in the due and punctual observance or performance of any of the covenants, conditions and agreements on the part of the District, in the Bonds or in the Resolution, or in any pertinent law contained, and such default shall continue for a period of thirty (30) days.

Rights Arising Upon Occurrence of Event of Default.

That upon the happening of any event of default specified in the Resolution as described immediately above, the provisions of said Section 76.160 of Kentucky Revised Statutes shall become operative, and the holder or holders of twenty percent (20%) in principal amount or more of the Bonds then Outstanding pursuant to the Resolution may, by an instrument or instruments filed in the office of the County Clerk of Jefferson County, Kentucky, and approved or acknowledged in the same manner as a deed to be recorded, apply to a Judge in the Circuit Court of such County to appoint a trustee to represent all of the Bondholders. Upon such application, such Judge shall appoint a trustee and such trustee may, and upon the written request of the holder or holders of twenty percent (20%) in principal amount or more of the Bonds Outstanding under the Resolution, shall, in his or its name, (a) by mandamus or other suit, action or proceeding at law, or in equity, including mandatory injunction, enforce all rights of the District to collect rates, rentals and other charges adequate to carry out any agreement as to, or pledge of, the revenues and income of the District, and to require the District and its officers to carry out any other agreement with the Bondholders and to perform its and their duties imposed by law; (b) bring suit upon the Bonds; (c) by action or suit in equity require the District to account as if it were the trustee of an express trust for the Bondholders; (d) by action or suit in equity enjoin any acts or things which may be unlawful or in violation of the rights of Bondholders; (e) declare all Bonds due and payable; and (f) pursue any other rights or remedies available at law or in equity. For any Bonds registered in Book-Entry Form, notwithstanding the above definition of "Bondholder," the Paying Agent shall be entitled to rely upon written instructions from a majority of the beneficial owners of the Bonds with reference to consent, if any, required from Holders pursuant to the terms of the Resolution.

Any such trustee, whether or not all Bonds have been declared due and payable, shall be entitled as of right upon application to such Court to the appointment of a receiver, who may enter upon and take possession of the System, or any part or parts thereof, and operate and maintain the same, and collect and receive all rentals, rates, and other charges, and other revenues and income, of the District, thereafter arising therefrom, in the same manner as the District and its officers might do, and shall deposit all such monies in a separate account and apply the same in such manner as such Court shall direct. In any suit, action or proceeding, by the trustee, the fees, counsel fees and expenses of the trustee and of the receiver, if any, shall constitute disbursements taxable as costs. All costs and disbursements allowed by the Court shall be a first charge on any revenue and income derived from the System. Such trustee shall, in addition to the foregoing, have and possess all of the powers necessary or appropriate for the exercise of any functions specifically set forth herein or incident to the general representation of the Bondholders in the enforcement and protection of their rights.

Rights of Insurer.

Any other provision of the Resolution to the contrary notwithstanding, and to the extent permitted by law (including the Act), for each particular Series of Bonds or portion thereof that is insured by an Insurer, the exercise by the court appointed trustee or the Bondholders of any rights, powers or privileges granted thereto in the Resolution shall require the written consent of the Insurer, if the Insurer is not then in breach or default of its obligations under its insurance policy.

Bond Registrar; Paying Agents.

The Resolution permits the appointment by the District of a Bond Registrar and one or more Paying Agents. Any Paying Agent or Bond Registrar may at any time resign and be discharged of the duties and obligations created by the Resolution by giving at least 60 days written notice to the District and the other Paying Agents or Bond Registrars. Any Paying Agent or Bond Registrar may be removed at any time by an instrument filed with such Paying Agent or Bond Registrar and signed by an Authorized Officer of the District. Any successor Paying Agent or Bond Registrar shall be appointed by the District and shall be a bank or trust company organized under the laws of any state of the United States or a national banking association, having capital stock, surplus and undivided earnings aggregating at least $10,000,000, and willing and able to accept the office on reasonable and customary terms and authorized by law to perform all the duties imposed upon it by the Resolution.

Amendments and Supplemental Resolutions.

Any modification or amendment of the Resolution and of the rights and obligations of the District and of the Holders of the Bonds thereunder, in any particular, may be made by a Supplemental Resolution, with the written consent given as provided in the Resolution of [i] the Holders of at least a majority in principal amount of the Bonds Outstanding at the time such consent is given and [ii] if less than all of the Series of Bonds then Outstanding are affected by the modification or amendment, the Holders of at least a majority in principal amount of the Bonds of each Series so affected and Outstanding at the time such consent is given; provided that if such modification or amendment will, by its terms, not take effect so long as any Bonds of any specified like Series and maturity remain Outstanding, the consent of the Holders of such Bonds shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds under this Section. No such modification or amendment shall permit a change in the terms of redemption (including Sinking Fund Installments) or maturity of the principal of any Outstanding Bond or of any installment of interest thereon or a reduction in the principal amount or the Redemption Price thereof or in the rate of interest thereof without the consent of the Holder of such Bond, or shall reduce the percentages or otherwise affect the classes of Bonds the consent of the Holders of which is required to effect any such modification or amendment, or shall change or modify any of the rights or obligations of any Fiduciary without its written assent thereto. For the purpose of this caption, a Series shall be deemed to be affected by a modification or amendment of the Resolution if the same adversely affects or diminishes the rights of the Holders of Bonds of such Series. The District may in its sole discretion determine whether or not, in accordance with the foregoing powers of amendment, Bonds of any particular Series or maturity would be affected by any modification or amendment of the Resolution and any such determination shall be binding and conclusive on the District and all Holders of Bonds.

For any one or more of the following purposes and at any time or from time to time, a Supplemental Resolution of the District may be adopted, which, when adopted, shall be fully effective in accordance with its terms: [1] to close the Resolution against, or provide limitations and restrictions in addition to the limitations and restrictions contained in the Resolution on, the authentication and delivery of Bonds or the issuance of other evidences of indebtedness; or [2] to add to the covenants and agreements of the District in the Resolution, other covenants and agreements to be observed by the District which are not contrary to or inconsistent with the resolutions as theretofore in effect; or [3] to add to the limitations and restrictions in the Resolution, other limitations and restrictions to be observed by the District which are not contrary to or inconsistent with the Resolution as theretofore in effect; or [4] to authorize Bonds of a Series; or [5] to authorize one or more series of Subordinated Debt; or [6] to authorize, in compliance with all applicable law, Bonds of each Series to be issued in the form of coupon Bonds; or [7] to authorize, in compliance with all applicable law, Bonds of each Series to be issued in the form of Bonds issued and held in book-entry form on the books of the District or any Fiduciary appointed for that purpose by the District; or [8] notwithstanding any other provisions of the Resolution, to authorize Bonds of a Series having terms and provisions different than the terms and provisions theretofore provided in the Resolution; or [9] to confirm, as further assurance, any pledge or assignment under, and the subjection to any security interest, pledge or assignment created or to be created by, the Resolution of the Pledged Property and Credit Facilities or other agreements; or [10] to comply with the provisions of any federal or state securities law, including, without limitation, the Trust Indenture Act of 1939, as amended or comply with Section 103 of the Internal Revenue Code of 1986 or 1954, as applicable, as amended, or successor provisions; or [11] to modify any of the provisions of the Resolution in any other respect whatever, provided that [i] such modification shall be, and be expressed to be, effective only after all Bonds of each Series Outstanding at the date of the adoption of such Supplemental Resolution shall cease to be Outstanding and [ii] such Supplemental Resolution shall be specifically referred to in the text of all Bonds of any Series authenticated and delivered after the date of the adoption of such Supplemental Resolution and of Bonds issued in exchange therefore or in place thereof; or [12] to cure any ambiguity, defect or inconsistency provided that there is no material adverse impact on Bondholders.

Consent of the Insurer When Consent of Bondholder Required; Notice.

The Insurer, and not the registered Holders thereof, shall be deemed to be the Holder of Bonds of any Series as to which it is the Insurer at all times for the purpose of giving any approval or consent to the execution and delivery of any Supplemental Resolution or any amendment, change or modification of the Resolution which, as specified in the Resolution, requires the written approval or consent of the Holders of at least a majority in aggregate principal amount of Bonds of such Series at the time Outstanding. In such cases where the consent of the Insurer shall be necessary pursuant to the Resolution for the execution of a particular amendment, the District shall be required to send a copy of such amendment to S&P's. In addition, in such cases where the consent of the Insurer shall not be necessary pursuant to the Resolution for the execution of a particular amendment, the District shall provide the Insurer with written notice of such amendment prior to or within a reasonable time after the execution thereof.

Defeasance.

If the District shall pay or cause to be paid, or there shall otherwise be paid, to the Holders of all Bonds the principal or Redemption Price, if applicable, and interest due or to become due thereon, at the times and in the manner stipulated in the Bonds and in the Resolution, then the pledge of the Pledged Property and all covenants, agreements and other obligations of the District to the Bondholders, shall thereupon cease, terminate and become void and be discharged and satisfied.

Bonds or interest installments, or portions thereof, for the payment or redemption of which monies shall have been set aside and shall be held in trust by the Paying Agents (through deposit by the District of funds for such payment or redemption or otherwise) at the maturity or redemption date thereof shall be deemed to have been paid within the meaning and with the effect expressed in the Resolution. Subject to the provisions of the Resolution, any Outstanding Bonds shall prior to the maturity or redemption date thereof be deemed to have been paid within the meaning and with the effect expressed in the Resolution if the following conditions are met: (a) if any of such Bonds are to be redeemed on any date prior to their maturity, the District shall have instructed the Bond Registrar to mail as provided in the Resolution notice of redemption of such Bonds (other than Bonds which have been purchased or otherwise acquired by the District and delivered to the Bond Registrar as hereinafter provided prior to the mailing of notice of redemption), (b) there shall have been deposited with an escrow agent either cash (including amounts, if any, withdrawn and deposited pursuant to the Resolution as described herein under the captions "Bond Fund - Debt Service Account" and "Bond Fund - Reserve Account") in an amount which shall be sufficient, or Defeasance Obligations (including any Defeasance Obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States) the principal of and the interest on which when due will provide cash which, together with any other cash on deposit with the escrow agent, shall be sufficient, to pay when due the principal or Redemption Price, if applicable, and interest due and to become due on the Bonds on or prior to the redemption date or maturity date thereof; as the case may be and (c) if the Bonds are not by their terms subject to redemption within the next succeeding 60 days, the District shall have instructed the Bond Registrar to mail a notice to the Holders of such Bonds to be paid or redeemed, that the deposit required by (b) above has been made and that the Bonds are deemed to have been paid in accordance with this Section and stating the maturity or redemption date upon which monies are expected to be available for the payment.

Such escrow agent shall, as and to the extent necessary, apply amounts held by it pursuant to this Section to the retirement of Bonds in amounts equal to the unsatisfied balances (determined as provided in the Resolution as described herein under the caption "Bond Fund - Debt Service Account") of any Sinking Fund Installments with respect to such Bonds, all in the manner provided in the Resolution. The escrow agent shall, if so directed by the District prior to the maturity or redemption date, as applicable, of

Bonds deemed to have been paid in accordance with the provisions of the Resolution described under this caption, apply cash, redeem or sell Defeasance Obligations so deposited with such escrow agent and apply the proceeds thereof, together with any cash on deposit with the escrow agent, to the purchase of such Bonds (and the Bond Registrar shall immediately thereafter cancel all such Bonds so purchased and delivered to it); provided, however, that the cash and Defeasance Obligations remaining on deposit with such escrow agent after the purchase and cancellation shall be sufficient to pay when due the principal or Redemption Price, as applicable, and interest due or to become due on all remaining Bonds in respect of which such cash and Defeasance Obligations are being held by such escrow agent on or prior to the redemption date or maturity date thereof, as the case may be. Except as otherwise provided in the Resolution, neither Defeasance Obligations nor cash deposited with such escrow agent pursuant to the Resolution nor principal or interest payments on any such Defeasance Obligations shall be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal or Redemption Price, as applicable, and interest on the Bonds with respect to which such cash and Defeasance Obligations have been deposited. Any excess cash received from such principal or interest payments on such Defeasance Obligations shall be paid over to the District as received by such escrow agent, free and clear of any trust, lien or pledge.

Notwithstanding any of the provisions of the Resolution regarding Defeasance, no forward supply contract shall constitute a "Defeasance Obligation" or otherwise be used to refund all or any portion of Bonds which are insured as to the payment of principal and interest by an Insurer, without first obtaining the prior written consent of such Insurer.

SUMMARY OF PROVISIONS OF THE NOTE RESOLUTION

The following is a brief summary of certain provisions of the District's Subordinated Debt Resolution adopted by the District on April 26, 2010 (the "Resolution" or the "Subordinated Debt Resolution") and used in this Official Statement. The summary does not purport to be comprehensive or definitive. All references herein to the Resolution are qualified in their entirety by reference to such Resolution, a copy of which is available for review prior to the issuance and delivery of the Series 2017 Notes, at the office of the District and thereafter at the office of the Paying Agent. All references to the Series 2017 Notes are qualified in their entirety by reference to the definitive form thereof and the information with respect thereto included in the Resolution.

GENERAL COVENANTS OF THE DISTRICT.

Payment of Notes.

The District shall promptly pay when due the principal or purchase price of (whether at maturity, upon acceleration, call for redemption or purchase or otherwise) and premium, if any, and interest on each series of Notes at the places, on the dates and in the manner provided the Resolution and in such Notes according to the true intent and meaning thereof; provided, however, that such obligations are not general obligations of the District but are limited obligations payable solely from the revenues and receipts described in the Granting Clauses to the Resolution and the other Pledged Property, all of which are specifically pledged to such purposes in the manner and to the extent provided the Resolution. The Notes and interest thereon shall not be deemed to constitute a debt or a pledge of the faith and credit of the State or any political subdivision thereof, including the District. Neither the State nor any political subdivision thereof, including the District shall be obligated to pay the principal of or interest on the Notes or other costs incident thereto except from the revenues and receipts pledged therefor, and neither the faith and credit nor the taxing power of the State or any political subdivision thereof, including the District is pledged to the payment of the principal of or interest on the Notes or other costs incident thereto.

Covenants and Representations of District.

The District shall observe and perform all covenants, conditions and agreements on its part contained in the Resolution, in every Note executed, authenticated and delivered hereunder and in all of its proceedings pertaining thereto. The District represents (a) that it is duly authorized under the Constitution and laws of the State, including particularly and without limitation the Act, to issue the Notes and to execute the Resolution; to execute the Note Purchase Agreement; and to pledge the revenues, receipts and funds in the manner and to the extent set forth in the Resolution; (b) that all action on its part for the issuance of the Notes and the execution and delivery of the Resolution has been duly and effectively taken; and (c) that the Notes in the hands of the Holders thereof are and will be valid and enforceable obligations of the District according to the terms thereof except as limited by bankruptcy laws and usual equity principles.

Further Assurances.

The District shall do, execute, acknowledge and deliver, or cause to be done, executed, acknowledged and delivered, such supplemental resolutions and such further acts, instruments and transfers as the Paying Agent may reasonably require for the better assuring, transferring, conveying, pledging and assigning to the Paying Agent of all the rights assigned by the Resolution and the revenues and receipts pledged to the payment of the principal of, premium, if any, and interest on the Notes. The District shall cooperate with the Paying Agent and the Noteholders in protecting the rights and security of the Noteholders.

Inspection of Books and Project.

All books and documents in the District's possession relating to each Project and the revenues derived therefrom shall at all times be open to inspection by such agents as the Paying Agent or the Holders of 25% in aggregate principal amount of Notes then Outstanding may from time to time designate.

Priority of Notes.

The District warrants and covenants that the lien created under the Resolution with respect to any series of Notes shall be superior in priority to all revenue debt of the District, except for the Senior Debt.

Prohibited Activities.

The District shall not knowingly engage in any activities or take any action that might result in (a) the income of the District derived from each Project becoming taxable to it, (b) any Note becoming an "arbitrage bond" within the meaning of Section 148 of the Code and the regulations and rulings thereunder, or (c) any interest on the Notes otherwise becoming includable in the gross income of the recipients thereof under the federal income tax laws or becoming taxable under the laws of the State.

Anticipation of Issuance of Bonds.

The District covenants that each series of Notes issued under the Resolution is issued in anticipation of the issuance by the District, prior to the maturity of such Notes whether by acceleration, redemption, or otherwise, of Additional Bonds (within the meaning of the Bond Resolution) on a parity with the Senior Debt under the Bond Resolution and pursuant to the Act. The District further covenants to, in a timely fashion, do any and all things necessary for the issuance of such Additional Bonds on a parity with the Senior Debt, to the extent necessary to pay such Notes and to the extent permitted by law. To the extent that any Notes of a particular series issued hereunder are not paid from the Revenues of the

District as described in the Resolution, including the proceeds of the Project for which such Notes were issued, such Notes shall be paid from the proceeds of such Senior Debt.

Tax Covenants.

The District covenants that within the meaning of Section 141 of the Code, [i] less than 10% of the proceeds of the Notes of any series, if any, will be applied for any private business use, and the payment of principal of or interest on less than 10% of the amount of the Notes of any series, if any, will be secured directly or indirectly by any interest in property used for a private business use, or payments in respect of such property, or will be derived from payments in respect of such property; [ii] at least 90% of the proceeds of the Notes of any series will be applied for a governmental use of the District; [iii] any private business use of the Project will be related to such governmental use of the District and will not be unrelated or disproportionate; and [iv] none of the proceeds of the Notes of any series will be used, directly or indirectly, to make or finance loans to private Persons; and the District covenants further that the Notes of any series will not be federally guaranteed within the meaning of Section 149(b) of the Code.

APPLICATION OF FUNDS.

"***Trust Moneys" Defined***.

All moneys received by the Paying Agent to be held and applied under the Resolution, or required to be paid to the Paying Agent and whose disposition is not elsewhere in the Resolution otherwise specifically provided for, including but not limited to the investment income of all Trust Funds held by the Paying Agent under the Resolution (all such moneys pending the expenditure thereof, including but not limited to the proceeds of Notes deposited in the Subordinated Debt Subaccounts of the Construction and Acquisition Fund and investment income thereon pending the expenditures thereof, and all proceeds of any such moneys pending the expenditure of such proceeds, being defined as the "Trust Moneys") shall be held by the Paying Agent as a part of the Pledged Property, and, upon the exercise by the Paying Agent of any remedy specified in the Resolution, such Trust Moneys shall be applied in accordance with the Resolution, except to the extent that the Paying Agent is holding in trust moneys and/or Government Obligations for the payment of any specified Notes which are no longer deemed to be Outstanding under the provisions of the Resolution, which moneys and/or Government Obligations shall be applied only as provided in said Article. Prior to the exercise of any such remedy, all or any part of the Trust Moneys shall be held, invested, withdrawn, paid or applied by the Paying Agent, from time to time.

NOTE ACCOUNT.

(a) A special trust fund is established under the Resolution with the Paying Agent and designated as the "Note Account." The Note Account constitutes a part of the Senior Subordinated Debt Fund of the District pursuant to the Bond Resolution, but is maintained as a separate special trust fund. Established within the Note Account is a General Subaccount.

There shall be credited to the General Subaccount in the Note Account, as and when received,

(i) each payment received by the Paying Agent under and pursuant to any of the provisions of the Resolution which is required, or which is accompanied by directions that such payment is, to be credited to the Note Account; and

(ii) all income derived from the investment of amounts described in clause (i) as realized.

(b) The Paying Agent shall disburse, from time to time, sufficient moneys from the Note Account as specified below to pay the principal of, premium if any, and the interest on, the Notes as the same become due and payable.

(c) Funds for the payment of the principal of, premium, if any, and interest on the Notes shall be derived from the following sources:

(1) Funds for the payment of the principal of and premium, if any, on the Notes, at Maturity, shall be disbursed by the Paying Agent from the Note Account in the order of priority indicated below:

(i) Eligible Moneys in the General Subaccount in the Note Account; and

(ii) all other amounts in the General Subaccount in the Note Account which were received by the Paying Agent under and pursuant to the Resolution from the District or from any other Person or Fund, and amounts derived from the investment of such amounts.

(2) Funds for the payment of interest on the Notes shall be derived from the following sources in the order of priority indicated below and in each case applied to interest on Notes:

(i) Eligible Moneys in the General Subaccount in the Note Account; and

(ii) all other amounts in the General Subaccount in the Note Account which were received by the Paying Agent under and pursuant to the Resolution from the District or from any other Person or Fund, and amounts derived from the investment of such amounts.

(d) Upon the occurrence of an Event of Default described in clauses (d) of Section 8.1, the Paying Agent shall pay, to the extent moneys are available, to the Noteholders, in accordance with the provisions of Section 2.2 of the Resolution, in payment of the principal of and interest on the Notes, an amount equal to the principal of and interest on the Notes due upon the date of acceleration of the Notes as provided in Section 8.2 of the Resolution and to the extent of such payment, the obligations of the District under the Resolution and the Notes shall be deemed to have been satisfied.

(e) If any Note shall not be presented for payment at Maturity, provided moneys sufficient to pay such Note shall have been made available to the Paying Agent and are held in the Note Account for the benefit of the Holder thereof, all liability of the District to the Holder thereof for the payment of such Note shall forthwith cease, determine and be completely discharged, and thereupon it shall be the duty of the Paying Agent to hold such moneys in the Note Account, without liability to the Holder for interest thereon, for the benefit of the Holder of such Note, who shall thereafter be restricted exclusively to such moneys for any claim of whatever nature on the part of such Holder hereunder or on, or with respect to, such Note.

(f) All moneys paid over to the Paying Agent for the account of the Note Account shall be held in trust by the Paying Agent for the benefit of the Holders of the Notes as each is entitled to be paid therefrom.

(g) Any moneys remaining in the Note Account after any Interest Payment Date and after Payment of the Notes, and payment of the fees, charges and expenses of the Paying Agent which have accrued and which will accrue and all other items required to be paid hereunder, shall be paid to the District.

Payment Into Construction and Acquisition Fund; Use of Proceeds.

The proceeds of sale of each series of Notes shall be deposited in a separate subaccount in the Construction and Acquisition Fund (collectively, the "Subordinated Debt Subaccounts"), each of the Subordinated Debt Subaccounts to be designated in a manner which will distinguish it from all other subaccounts of the Construction and Acquisition Fund and to consist of Pledged Property on which the holders of such series of Notes shall have a first lien. The District shall use such proceeds of the Notes only to pay costs of a Project with respect to which at the time of use the District reasonably intends to issue Additional Bonds on a parity with the Prior Bonds to permanently finance the Project.

Trust Moneys; Reports.

All Trust Moneys shall be trust funds and shall not be subject to lien or attachment of any creditor of the District or the Paying Agent. Such Trust Moneys shall be held in trust and applied in accordance with the provisions of the Resolution. The Paying Agent shall furnish to the District on at least a semi-annual basis a statement of the moneys (including all investment activity) in each Trust Fund.

Arbitrage.

The District covenants and agrees that it will commit knowingly no act that would cause any Notes of any series to be "arbitrage bonds" within the meaning of Section 148(a) of the Code (including the applicable regulations thereunder). The Paying Agent covenants that it will comply with any instructions of the District regarding investment or other use of proceeds of the Notes so as to prevent the Notes from becoming "arbitrage bonds" but shall otherwise have no other liability or obligations with respect to preventing the Notes from becoming "arbitrage bonds." The Paying Agent shall file a copy of any applicable Opinion of Bond Counsel received by it with the District.

Rebate Requirements.

The District covenants and agrees to comply with any requirements to rebate moneys to the United States of America as may be required by law. Moneys in any rebate fund established for this purpose, including investment earnings thereon, if any, shall not be subject to the pledge of the Resolution and shall not constitute part of any of the Funds and Accounts held under the Resolution for the benefit and security of the Noteholders.

INVESTMENTS.

Investments.

Moneys held in any Accounts hereunder (other than Eligible Moneys) shall be invested and reinvested in Authorized Investments maturing or subject to redemption at the option of the Holder as needed as directed by the District in writing, or if orally, promptly confirmed in writing, or in such other manner as is acceptable to the Paying Agent. Eligible Moneys held in any Accounts hereunder shall be invested in Government Obligations maturing as needed as directed by the District in writing, or if orally, promptly confirmed in writing, or in such other manner as is acceptable to the Paying Agent. All such investments shall be held by or under the control of the Paying Agent except as may be otherwise permitted or authorized in the Resolution, and shall be deemed at all times a part of the fund or account in which the moneys so invested were originally held and the interest accruing thereon and any profit realized therefrom shall be credited to and held in such fund or account and any loss resulting therefrom shall be charged to such fund or account. The Paying Agent is directed to sell and convert to cash a sufficient amount of such investments in any fund whenever the cash held in such fund is insufficient for the purposes thereof Moneys held in the Subordinated Debt Subaccounts shall not be invested except as otherwise permitted in the Resolution or in the Bond Resolution for amounts on deposit in the Construction and Acquisition Fund.

Limitation of Liability.

(a) The Paying Agent shall not be responsible for any losses on investments or from the redemption, sale or maturity of any such investments made in accordance with the Resolution, and the District specifically holds the Paying Agent harmless and agrees to indemnify the Paying Agent for any claim resulting from any losses on investments made in accordance with the District's instructions.

(b) Notwithstanding any provision of the Resolution to the contrary, unless otherwise specifically agreed in a separate written agreement, the Paying Agent shall not be liable or responsible for any calculation or determination which may be required in connection with, or for the purpose of complying with, Section 148 of the Code, or any successor statute or any regulation, ruling or other judicial or administrative interpretation thereof, including, without limitation, the calculation of amounts required to be paid to the United States of America or the determination of the maximum amount which may be invested in nonpurpose obligations having a yield higher than the yield on the Notes, or the determination as to whether any investments are permissible under Section 148 of the Code, and the Paying Agent shall not be liable or responsible for monitoring the compliance by the District with any of the requirements of Section 148 of the Code or any judicial or administrative interpretation thereof; it being acknowledged and agreed that the sole obligation of the Paying Agent in this regard shall be to hold and invest monies received by it pursuant to the terms of the Resolution and in each case pursuant to the instructions of the District.

DISCHARGE OF LIEN.

Discharge of Lien and Security Interests.

If the District shall pay or cause to be paid in full the principal of and the interest on any series of Notes or if the District has deposited or caused to be deposited with the Paying Agent in trust cash and/or Government Obligations, which do not permit the redemption thereof at the option of the issuer thereof, the principal of, premium, if any, and interest on which when due (or upon the redemption thereof at the option of the Holder), will, without reinvestment, provide cash which, together with the cash, if any, deposited with the Paying Agent at the same time, shall be sufficient to pay and discharge the entire indebtedness on such series of Notes as the same become due not theretofore canceled by the Paying Agent or delivered to the Paying Agent for cancellation, for principal and interest (and premium, if any) which have become due and payable, or to the Maturity thereof or earlier Redemption Date and (a) has paid or made arrangements satisfactory with the Paying Agent to pay, all fees and expenses (including, without limitation, counsel's fees and expenses) of the Paying Agent respecting such series of Notes which have accrued or which the Paying Agent estimates will accrue prior to the final payment of such series of Notes in full, (b) has furnished to the Paying Agent an Opinion of Bond Counsel to the effect that the deposit of such cash and Government Obligations is in compliance with the provisions of the Resolution, will not adversely affect the exclusion of interest on such Notes from gross income for purposes of Federal income taxation and that payments to the owners of such Notes will not constitute a voidable transfer or preference under and pursuant to the Federal Bankruptcy Code as then in effect in the event of a bankruptcy proceeding thereunder by or against the District, and (c) has made arrangements satisfactory to the Paying Agent for the giving of notice of redemption, if any, then the lien of the

Resolution, these presents and the security interests in the Resolution with respect to such series of Notes shall cease, determine and be void. Upon the discharge of the lien of the Resolution with respect to the applicable series of Notes, these presents and the security interests therein ceasing, determining and being void as provided in the preceding sentence, the Paying Agent shall, upon receipt of evidence satisfactory to it that all conditions precedent to the satisfaction and discharge of the Resolution with respect to such Notes have been complied with, cancel and discharge the Resolution with respect to such Notes and the security interests therein, execute and deliver to the District such instruments in writing as shall be required to cancel and discharge the Resolution with respect to such Notes and the security interests therein and apply any moneys and investments held in the Note Account with respect to such Notes in accordance with Sections 5.2, provided that all moneys then held in the Note Account for the purpose of paying such Notes of the applicable series which have not yet been presented for payment shall be held thereafter in trust solely for the Holders of such Notes pending the payment thereof to such Holders. If such Notes will not be redeemed in whole within 60 days of such discharge, the Paying Agent shall promptly give notice of such discharge, to all Noteholders of such Notes in the manner described in Section 3.6(a) for the giving of notices of redemption. If the lien and security interests of the Resolution with respect to all series of Notes are discharged, the Resolution, at the request of the District, shall be discharged and canceled.

Discharge of the Resolution.

Notwithstanding the fact that the lien of the Resolution upon the Pledged Property may have been discharged and canceled with respect to a series of Notes, the Resolution and the rights granted and duties imposed by the Resolution, to the extent not inconsistent with the fact that the lien upon the Pledged Property may have been discharged and canceled with respect to one or more series of Notes, shall nevertheless continue and subsist until the principal of, premium, if any, and the interest on, all of the Notes shall have actually been paid in full, all amounts owed by the District to the Paying Agent shall have been paid in full, and the Paying Agent shall have applied amounts in the Note Account and all funds theretofore held by the Paying Agent for payment of any Notes not theretofore presented for payment or purchase, as the case may be, which funds shall be held in trust solely for the Holders of such Notes pending their application in accordance herewith, until such funds have been applied in accordance herewith.

DEFAULT PROVISIONS AND REMEDIES.

Events of Default.

Each of the following events is defined as and declared to be and to constitute an "Event of Default" hereunder with respect to the Notes of a particular series:

(a) default in the due and punctual payment of any interest on any Note when the same shall become due and payable; or

(b) default in the due and punctual payment of the principal of or premium on any Note at its maturity or upon mandatory redemption; or

(c) the declaration of an Event of Default hereunder with regard to the Notes of any series; or

(d) the failure of the District to observe and perform any of the covenants, conditions, agreements, or provisions contained in the Resolution, or in the Notes, on the part of the District to be observed or performed and the continuation thereof for thirty days after written notice, specifying such default and requiring the same to be remedied, is given to the District by the Paying Agent.

Acceleration.

Upon the occurrence of any Event of Default described in subsection (a), (b) or (c) of Section 8.1 of the Resolution, the Paying Agent may or the Holders of more than fifty percent (50%) in aggregate principal amount of the Outstanding Notes of the particular series shall, and, upon the occurrence and continuance of an Event of Default described in subsection (d) of Section 8.1 of the Resolution, the Paying Agent shall by notice in writing delivered to the District declare the principal of all the Notes immediately due and payable as of the fifth Business Day following such date, whereupon the same shall become immediately due and payable. Upon any such acceleration, the Notes and the interest thereon shall forthwith be paid in accordance with the Resolution. Upon any declaration of acceleration hereunder, the Paying Agent shall immediately declare the payments required to be made by the District hereunder to be immediately due and payable.

Other Remedies.

Upon the occurrence of an Event of Default, the Paying Agent shall have the power to proceed with any right or remedy available at law or in equity or by statute, as it may deem best, including any suit, action or special proceeding in equity or at law for the collection of amounts due and to become due hereunder and under the Notes or the performance of any covenant or agreement contained in the Resolution or for the enforcement of any proper legal or equitable remedy as the Paying Agent shall deem most effectual to protect the rights aforesaid, insofar as such may be authorized by law.

No delay or omission to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or shall be construed to be a waiver of any such Event of Default or acquiescence therein; and every such right and remedy may be exercised from time to time and as often as may be deemed expedient.

No waiver of any Event of Default hereunder, whether by the Paying Agent or by the Noteholders, shall extend to or affect any subsequent or other Event of Default, or impair any rights or remedies consequent thereon.

Rights of Noteholders.

Upon the occurrence of an Event of Default and if requested so to do by the Holders of more than fifty percent (50%) in aggregate principal amount of the Notes then Outstanding and if indemnified, the Paying Agent shall be obligated to exercise such one or more of the rights and remedies conferred by the Resolution as the Paying Agent, being advised by Counsel, shall deem most expedient in the interests of the Noteholders.

Right of Noteholders to Direct Proceedings.

Except in the case of an Event of Default under Section 8.1(d) of the Resolution, the Holders of more than fifty percent (50%) in aggregate principal amount of the Notes then Outstanding shall have the right, at any time, by an instrument or instruments in writing executed and delivered to the Paying Agent, to direct (as between such Noteholders and the Paying Agent) the time, method and place of conducting all proceedings otherwise permitted to be taken in connection with the enforcement of the terms and conditions of the Resolution, or for the appointment of a receiver or any other proceedings, provided the Paying Agent is indemnified

Application of Moneys.

All moneys received by the Paying Agent pursuant to any right given or remedy or action taken under the provisions of the Resolution shall, after payment of all fees and expenses of the Paying Agent, including, without limitation, the costs and expenses of the proceedings resulting in the collection of such other moneys and of the related expenses, liabilities and advances incurred or made by the Paying Agent, be deposited in the General Subaccount in the Note Account. All such other moneys shall be applied by the Paying Agent as follows:

(a) Unless the principal of all the Notes shall have become or shall have been declared due and payable, all such moneys shall be applied:

First. to the payment to the Persons entitled thereto of all installments of interest then due on the Outstanding Notes (other than District Notes), in the order of the maturity of the installments of such interest and, if the amount available shall not be sufficient to pay in full any particular installment, then to the payment of such installment ratably, according to the amounts due on such installment, to the Persons entitled thereto, without any discrimination or privilege;

Second. to the payment to the Persons entitled thereto of the unpaid principal of any of the Outstanding Notes which shall have become due (other than District Notes), in the order of their due dates, with interest on such Notes at the rate last borne by the Notes from the respective dates upon which they became due and, if the amount available shall not be sufficient to pay in full the principal which became due on such Notes on any particular date, together with such interest, then to the payment thereof ratably, according to the amount of principal due on such date, to the Persons entitled thereto, without any discrimination or privilege;

Third. to the payment of the principal of and interest on the District Notes in the same order of priority as specified in the first and second clauses.

(b) If the principal of all the Notes shall have become due or shall have been declared due and payable, all such moneys shall be applied FIRST, to the payment of the principal and the interest then due and unpaid on the Outstanding Notes (other than District Notes), without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any such Note over any other such Note, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or privilege, and SECOND to the payment of the principal of and interest on the District Notes in the same manner as specified in this first clause.

(c) If the principal of all such Notes shall have been declared due and payable, and if such declaration shall thereafter have been rescinded and annulled under the provisions of the Resolution, in the event that the principal of all the Notes shall later become due or be declared due and payable.

Such moneys shall be applied at such times, and from time to time, as the Paying Agent shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future. Whenever the Paying Agent shall apply such funds, it shall fix the date (which shall be an Interest Payment Date unless it shall deem another date more suitable or unless the principal of all of the Notes has been declared immediately due and payable, in which case application shall be made immediately) upon which such application is to be made and upon such date interest on the amount of principal to be paid on such dates shall cease to accrue provided that such amount of principal is in fact paid on such date. The Paying Agent shall give such notice to the Holders of the Notes as it may deem appropriate of the deposit with it of any such moneys and of the fixing of any such date, and shall not be required to make payment from such moneys to the Holder of any Notes until such Note shall be presented to the Paying Agent.

Whenever all Notes and the interest thereon have been paid in full and all expenses and charges of the Paying Agent have been paid, any balance remaining in the Note Account shall be disposed of in the manner provided in the Resolution.

Rights and Remedies Vested in Paying Agent.

All rights of action and remedies (including the right to file proofs of claim) hereunder or under any of the Notes may be enforced by the Paying Agent without the possession of any of the Notes or the production thereof in any trial or other proceedings relating thereto and any such suit or proceeding instituted by the Paying Agent shall be brought in its name as Paying Agent without the necessity of joining as plaintiffs or defendants any Holders of the Notes, and any recovery of judgment shall be for the equal benefit of the Holders of the Notes.

Rights and Remedies of Noteholders.

No Holder of any Note shall have any right to institute any suit, action or proceeding in equity or at law for the enforcement of the Resolution, for the execution of any trust or for the appointment of a receiver or to enforce any other right or remedy under the Resolution unless (a) a Default has occurred of which the Paying Agent has been notified as provided in subsection (e) of Section 9.1 of the Resolution, or of which by said subsection it is deemed to have notice, (b) such Default shall have become an Event of Default and the Holders of more than fifty percent (50%) in aggregate principal amount of Notes then Outstanding shall have made written request to the Paying Agent and shall have offered reasonable opportunity to the Paying Agent either to proceed to exercise the powers in the Resolution before granted or to institute such action, suit or proceeding in its own name, and (c) such Noteholders have offered to the Paying Agent indemnity and the Paying Agent shall thereafter fail or refuse to exercise the powers in the Resolution before granted, or to institute such action, suit or proceeding in its own name. Such notification, request and offer of indemnity are at the option of the Paying Agent to be conditions precedent to the execution of the powers and trusts, and to any action or cause of action for the enforcement of the Resolution, or for the appointment of a receiver or for any other right or remedy under the Resolution; it being understood and intended that no one or more Holders of the Notes shall have any right in any manner whatsoever to affect, disturb or prejudice the lien of the Resolution by its, his or their action or to enforce any right or remedy, and that all proceedings at law or in equity shall be instituted, had and maintained in the manner provided in the Resolution and for the benefit, first, of the Holders of all Notes other than District Notes and, second, of the Holders of District Notes. Nothing in the Resolution shall, however, affect or impair the right of any Noteholder to enforce the payment of the principal and redemption or purchase price of, and interest on, any Note at and after the date such payment is due, or the obligation of the District or the Paying Agent to pay the principal and redemption or purchase price of, and interest on, each of the Notes to the respective Holders thereof at the time, place, from the source and in the manner expressed in the Notes.

Termination of Proceedings.

If the Paying Agent shall have proceeded to enforce any right or remedy hereunder by any action at law or in equity, by the appointment of a receiver or otherwise, and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely to the Paying Agent, then and in every such case the District, the Paying Agent and the Noteholders shall be restored to their former positions and rights hereunder, respectively, with respect to the Pledged Property, and all rights, remedies and powers of the Paying Agent and the Noteholders, respectively, shall continue as if no such proceedings had been taken.

Waivers of Events of Default.

(a) The Paying Agent shall waive any Event of Default hereunder and its consequences upon the written request of the Holders of more than fifty percent (50%) in aggregate principal amount of all Notes then Outstanding, provided, however, that except as permitted in subsection (b) below (relating to the rescission and annulment of declarations of acceleration of the Notes), there shall not be waived:

(1) any Event of Default pertaining to the payment of the principal or redemption or purchase price of any Note at its Maturity or Redemption Date; or

(2) any Event of Default pertaining to the payment when due of the interest on any Note unless prior to such waiver, all arrears of interest and all principal or redemption or purchase price payments in respect of which such Event of Default shall have occurred, with interest thereon (to the extent permitted by law) for the period from the occurrence of such Event of Default until paid in full at a rate per annum equal to the interest rate payable on the Notes from time to time during such period in accordance with the terms of the Notes, and all expenses of the Paying Agent in connection with such Event of Default, shall have been paid or provided for, and in case of any such waiver, or in case any proceeding taken by the Paying Agent on account of any such Event of Default shall have been discontinued or abandoned or for any reason, or shall have been determined adversely to the Paying Agent, then and in every such case the District, the Paying Agent and the Noteholders shall be restored to their former positions and rights hereunder, respectively, but no such waiver shall extend to or affect any subsequent or other Event of Default, or impair any rights or remedies consequent thereon.

The Paying Agent shall not have any discretion to waive any Event of Default hereunder and its consequences except in the manner and subject to the terms expressed above or in subsection (b) below.

(b) If a declaration of acceleration is made then and in every such case, the Paying Agent shall upon the written request of the Holders of more than fifty percent (50%) in principal amount of such Notes then Outstanding rescind and annul such declaration, and the consequences thereof, provided that at the time such declaration is rescinded and annulled:

(1) no judgment or decree has been entered for the payment of any moneys due pursuant to the Notes;

(2) all arrears of interest on all of the Notes and all other sums payable under the Notes (except as to principal of, and interest on, the Notes which have become due and payable by reason of such declaration) shall have been duly paid; and

(3) each and every Event of Default hereunder shall have been waived pursuant to the preceding paragraph or otherwise made good or cured;

and, provided further, that no such rescission and annulment shall extend to or affect any subsequent or other Event of Default or impair any rights or remedies consequent thereon. The Paying Agent shall not have any discretion to rescind and annul any declaration of acceleration and its consequences except in the manner and subject to the terms expressed in the Resolution.

SUPPLEMENTAL RESOLUTIONS.

Supplemental Resolutions Not Requiring Consent of Noteholders.

The District may adopt, effective upon filing of a copy thereof certified by the District with the Paying Agent and without the consent of, or notice to, any of the Noteholders, one or more supplemental resolutions for any one or more of the following purposes, provided that in the opinion of the District the change effected thereby is not to the prejudice of the interests of the Paying Agent or the Noteholders:

(a) to cure any ambiguity or formal defect or omission in the Resolution or between the terms and provisions of any other instrument or document executed in connection herewith or with the issuance of the Notes;

(b) to grant to or confer upon the Noteholders, the Paying Agent or for the benefit of the Noteholders or the Paying Agent any additional rights, remedies, powers or authorities that may lawfully be granted to or conferred upon the Noteholders or the Paying Agent;

(c) to subject to the lien and pledge of the Resolution, additional payments, revenues, properties or collateral including a lien, mortgage or security interest in a Project;

(d) to modify, amend or supplement the Resolution or any supplemental resolution in such manner as to permit the qualification under the Trust Indenture Act of 1939, as amended, or any similar Federal statute hereafter in effect or to permit the qualification of the Notes for sale under the securities laws of any of the states of the United States of America or the Securities Act of 1933, and, if it so determines, to add to any supplemental resolution such other terms, conditions and provisions as may be permitted by the Trust Indenture Act of 1939, as amended, or similar Federal statute;

(e) to evidence the appointment of a Co-Paying Agent or the succession of a new Paying Agent;

(f) to effect any other supplement to the Resolution which, in the judgment of the District, will not adversely affect the interests of the Noteholders; or

(g) to modify or supplement the Resolution in such manner as may be necessary, in the Opinion of Bond Counsel, to comply fully with all applicable rules, rulings, policies, procedures, regulations or other official statements promulgated or proposed by the Department of the Treasury or the Internal Revenue Service.

Supplemental Resolutions Requiring Consent of Noteholders.

(a) Exclusive of supplemental resolutions, and not otherwise, the Holders of not less than two-thirds (2/3) in aggregate principal amount of the Notes Outstanding shall have the right, from time to time, to consent to and approve the adoption by the District of such other supplemental resolution or resolutions as shall be deemed necessary and desirable by the District for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, any of the terms or provisions contained in the Resolution or in any supplemental resolution; provided, however, that nothing in this Section contained shall permit, or be construed as permitting, (1) an extension of the maturity date on which the principal of or the interest on any Note is, or is to become, due and payable, (2) a reduction in the principal amount of any Note, premium, if any, or interest rate on any of the Notes, (3) the creation of a lien ranking prior to or on a parity with the lien of the Resolution on the property conveyed pursuant to the Resolution or the deprivation of such lien, (4) a privilege or priority of any Note or Notes over any other Note or Notes, (5) the elimination of any mandatory redemption or mandatory purchase of Notes, extension of the due date for the purchase of Notes or call for mandatory redemption or the reduction of the purchase price or Redemption Price for the Notes or (6) a reduction in the aggregate principal amount of the Notes required for consent to such supplemental resolution without the consent of all Noteholders.

(b) If the District shall notify in writing the Paying Agent of the desire of the District to adopt any such supplemental resolution for any of the purposes of this Section, the Paying Agent shall, upon being satisfactorily indemnified with respect to expenses, cause written notice of the proposed adoption of such supplemental resolution together with a copy of such proposed supplemental resolution to be given by first class mail, postage prepaid, to the Holders of the Notes at their addresses shown on the Paying Agent's books of registration. If, within 60 days following the mailing of such notice or such longer period as shall be prescribed by the District and specified in such notice, the Holders of not less than two-thirds (2/3) in aggregate principal amount of the Notes Outstanding shall have consented to and approved the adoption of such supplemental resolution as provided in the Resolution, no Holder of any Note shall have any right to object to any of the terms and provisions contained therein, or the operation thereof, or in any manner to question the propriety of the adoption thereof, or to enjoin or restrain the District from adopting the same or the District or the Paying Agent from taking any action pursuant to the provisions thereof. Upon the adoption of any such supplemental resolution as in this section permitted and provided, and effective upon filing of a copy thereof certified by the District with the Paying Agent, and subject to Section 10.4 of the Resolution, the Resolution shall be modified and amended in accordance therewith.

(c) The Resolution may not be amended, changed or modified except by the execution and delivery of a supplemental resolution entered into in accordance with the provisions of Article X of the Resolution.

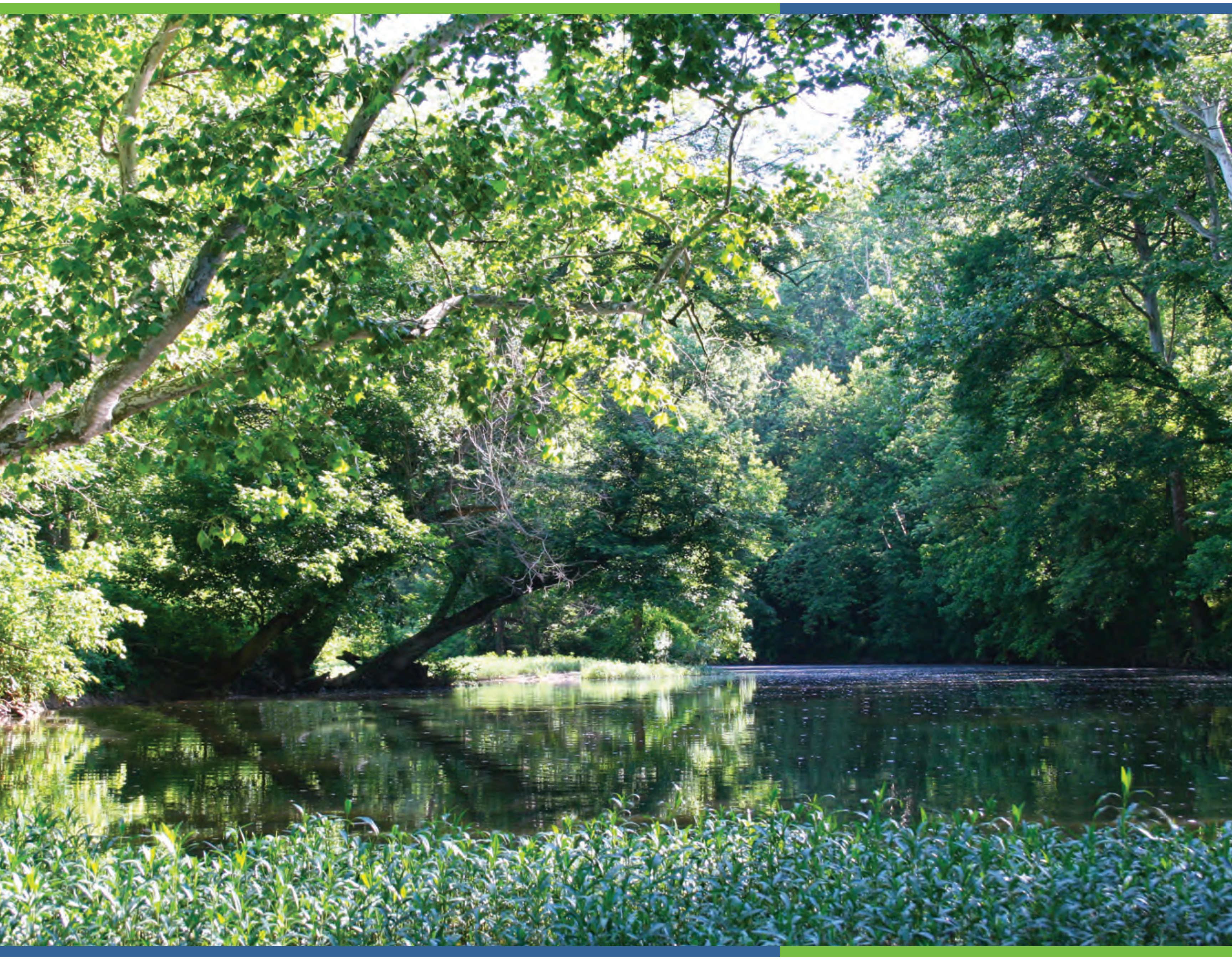
APPENDIX B

AUDITED FINANCIAL STATEMENTS FOR THE FISCAL YEAR ENDED JUNE 30, 2016

Louisville and Jefferson County
Metropolitan Sewer District

COMPREHENSIVE ANNUAL FINANCIAL REPORT

Fiscal Years Ended June 30, 2016 and 2015



msd
Safe, clean waterways

Comprehensive Annual Financial Report

Louisville and Jefferson County Metropolitan Sewer District
Louisville, Kentucky

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

Fiscal Years Ended June 30, 2016 and 2015

Prepared by the Department of Finance, Louisville MSD
Chad Collier, CFO, Secretary/Treasurer

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INTRODUCTORY SECTION

msd
Safe, clean waterways

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December 19, 2016

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

As Controller 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, 2016.

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 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. 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 considered 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 the Metro government. The value of these services in 2016 was $4.2 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 was to provide reasonable assurance that the financial statements of MSD for the fiscal years ended June 30, 2016 and 2015 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 auditors report is at the beginning of the financial section of this report.

Customer Base:
MSD's revenue is derived from sewer and drainage service charges collected from residential, commercial, and industrial customers. Sewer service charges are distributed to respective customer classes on the basis of actual costs incurred to collect and treat wastewater. For FY 2016 fifty-five percent (55%) of MSD's sewer service charge revenue came from residential customers, thirty-two percent (32%) came from commercial customers and eleven percent (11%) from industrial customers. MSD bills for stormwater services using equivalent service units (ESUs). An ESU is defined by MSD as 2,500 square feet of impervious area. For FY 2016 thirty-seven percent (37%) of MSD's stormwater service charge revenue came from residential customers, fifty-seven percent (57%) came from commercial customers and six percent (6%) from industrial customers.

Local Economy:
A Louisville Metro Demographic and Economic Projection study published in December 2015 by the University of Louisville, the Urban Studies Institute and the Kentucky State Data Center projects that the Louisville Metropolitan Statistical Area (MSA) will grow by 315,834 people or 26% between 2010 and 2040. Jefferson County is forecast to experience the largest numeric gain over this period accounting for 42% of the predicted growth in the MSA.

A separate University of Louisville population study completed in February 2015 forecasts that Jefferson County will experience employment growth in the professional, healthcare, social assistance, transportation, warehousing and hospitality sectors between the years 2020 and 2040.

The United States Department of Labor listed the unemployment rate for Jefferson County as 4.3 percent in June 2016 which was slightly below the United States overall unemployment rate of 4.9 percent for the same time period.

Major Initiatives:
Fiscal year 2016 was an exciting and active year for MSD. Listed below are some of the major initiatives that we focused on during the year:

- *New Executive Director:* On September 14, 2015 James A. “Tony” Parrott began his tenure as Executive Director of Louisville MSD. Parrot comes to Louisville from Cincinnati where he served as Executive Director of Greater Cincinnati Water Works and Metropolitan Sewer District of Greater Cincinnati. Parrot replaces Greg Heitzman who served as Executive Director of Louisville MSD from December 2011 until his retirement on September 30, 2015.

- *One Water Initiative:* In 2012 the mayor of Louisville/Jefferson County Metro Government, Greg Fischer, formed the One Water Advisory Council to examine the operations of MSD and the Louisville Water Company. The Advisory Council was tasked to determine if synergies existed between the two entities that would allow for improved service or reduced costs. The Council found opportunities existed for cost reduction, revenue enhancement and service improvement and recommended a comprehensive inter-local approach to take advantage of these opportunities. In 2015 the Board of MSD and the Board of Waterworks of the Louisville Water Company entered into an inter-local agreement which was approved by the Kentucky Attorney General in September 2015. A One Water Board of Directors has now been appointed and contains two members of the Board of Waterworks, two members of the MSD Board of Directors, and one member of Louisville/Jefferson County Metro Government.

  At the August 2016 One Water Board meeting it was reported that the One Water initiative is expected to produce a $9.3 million net benefit by the end of 2016. Key initiatives driving this benefit included identification of lost revenue and combining the Customer Service and Information Technology departments of both organizations into shared service teams. Effective January 1, 2017, all Customer Service and IT employees who currently work for MSD will become Louisville Water Company employees. These employees will continue to work at MSD but will support both organizations. The board also passed a resolution at the August 2016 meeting to begin to integrate the Communications and Human Resources departments. A timeline for this integration will be created over the coming months.

- *20 Year Facility Plan:* A 20 Year Comprehensive Facility Plan, including a comprehensive cost-of-service evaluation, is currently being prepared for MSD’s Sewer and Drainage Systems. The scope of the Facility Plan was developed to identify long-term capital project needs and associated operating programs to improve and sustain the wastewater, stormwater and Ohio River flood protection system. Most of the recommendations of the Facility Plan are based on the community’s desire for sustained reliability of service and improvements in the level of protection for stormwater drainage, floodplain management and Ohio River flood protection. The Facility Plan is scheduled to be completed in late 2016 at which time MSD will begin a program of community outreach to explain the benefits and costs of the long-term construction recommendations. The intent is to facilitate a broad stakeholder and community dialog on the implementation approach and the schedule of the proposed infrastructure improvements.

- *Elimination of Inefficient Water Quality Treatment Centers:* MSD has completed a 36-year journey to eliminate more than 300 inefficient water quality treatment centers that were beyond their design life. In May of 2016 MSD decommissioned the final remaining such treatment facility at McNeely Lake leaving five regional water quality treatment centers to serve all of Louisville and Jefferson County. Elimination of these inefficient facilities not only reduces operational costs and maintenance issues but it also enhances water quality in our streams and in the Ohio River.

- *Morris Forman Water Quality Treatment Center Power Failure and Flood:* On April 8, 2015 the Morris Forman Treatment Plant experienced an explosion, power outage and subsequent flood. One of two primary power supplies was destroyed in the explosion and the second backup power feed tripped offline due to the explosion. It was approximately eight hours before power was restored and during that time the plant was flooded with wastewater coming in from the combined sewer system.

  The below-ground motor control center was damaged beyond repair and had to be completely replaced. MSD's insurance carrier strongly recommended that all electrical equipment be moved above ground which would put Morris Forman in compliance with the Ten State Standard, an industry best practice strategy that applies to the construction of Wastewater Treatment Plants in the United States. This recommendation necessitated the construction of a new electrical building to house the new electrical equipment which supplies power to the plant's secondary process area. Recovery efforts are ongoing at this date.

- *Supplier Diversity Program Changes:* On November 21, 2015 MSD's Supplier Diversity Program was realigned under the Finance division's Procurement department. This change has improved communication and collaboration between Supplier Diversity and Procurement. The Supplier Diversity Program itself was changed from a Contractor Compliance Program (CCP) to an interim Good Faith Effort (GFE) policy. The interim GFE policy removes the mandatory Minority and Women-Owned Business participation requirements of 15% and 6% respectively. The Interim Policy allows prime contractors to either meet the goals of 15% minority and 6% women-owned business or submit documentation demonstrating their good faith efforts to reach these goals. The interim GFE policy became effective on December 1, 2015. MSD is currently utilizing a contractor to complete a comprehensive disparity study to determine if we should continue with the interim GFE policy or if we should establish a new policy and/or goals for participation of minority and woman-owned business entities in future MSD procurement activities.

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 for the fiscal year ended June 30, 2015. This was the 26th 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. The report satisfied both generally accepted accounting principles and applicable legal requirements.

Acknowledgements
The Finance department of Louisville MSD has worked hard to produce the 2016 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
Controller

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

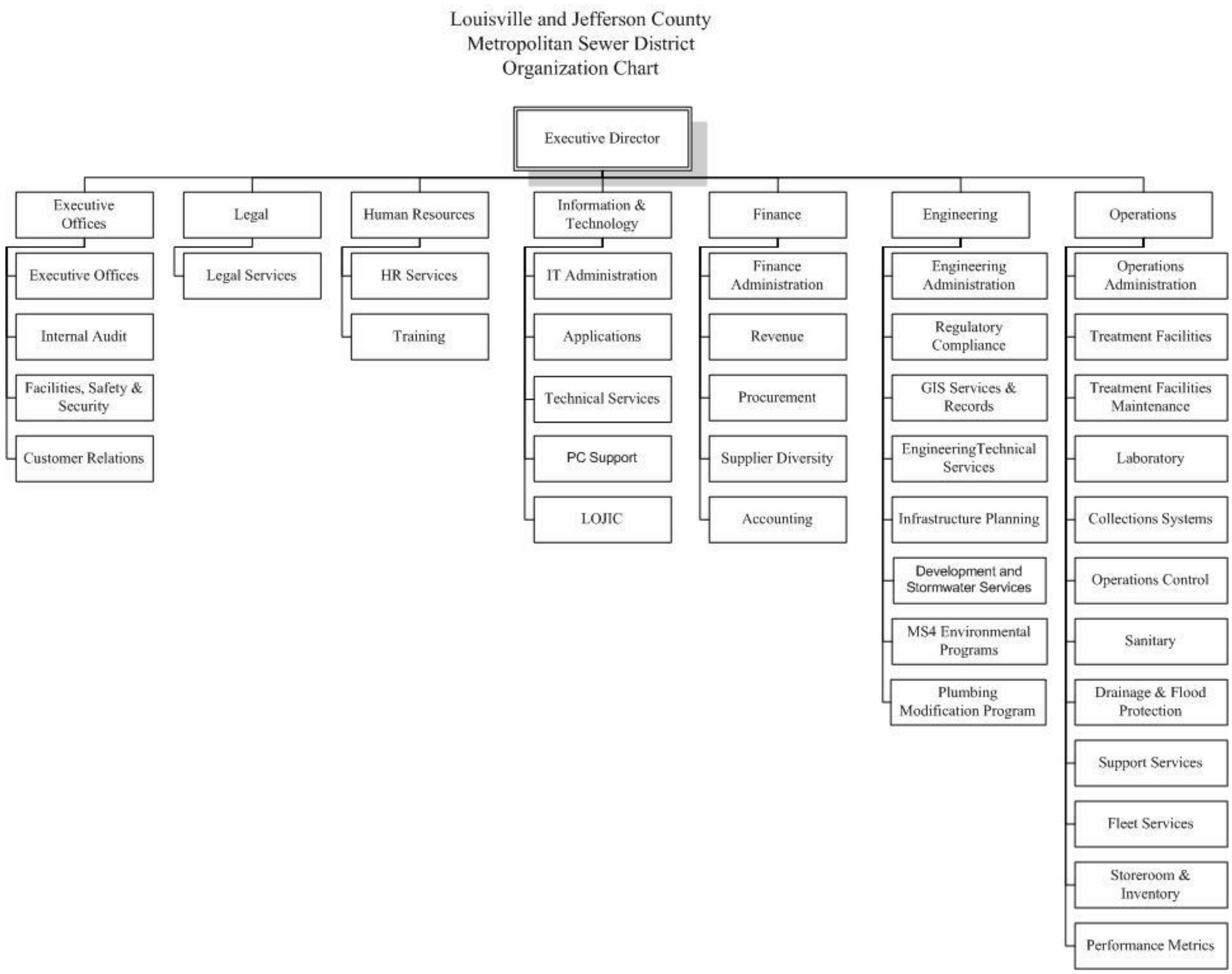
Louisville and Jefferson County
Metropolitan Sewer District
Kentucky

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2015

Executive Director/CEO

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
ORGANIZATION CHART



LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT

Fiscal Year Ended June 30, 2016

MSD BOARD MEMBERS:

Cyndi Caudill, Chair	Term expires 8/31/17
Daniel Arbough, Vice Chair	Term expires 6/30/18
Yvonne Wells-Hatfield	Term expires 6/30/16
John Phelps	Term expires 7/31/16
Joyce Horton Mott	Term expires 8/31/17
J.T. Sims	Term expires 7/31/17
Andrew Bailey	Term expires 7/31/18
Sujata Barai Chugh	Resigned 5/23/16

PRINCIPAL OFFICERS:

Tony Parrott	Executive Director
Angela Akridge	Chief Engineer
Chad Collier	Chief Financial Officer and Secretary/Treasurer
Paula Purifoy	General Counsel
W. Brian Bingham	Chief of Operations
Lynne Fleming	Human Resources Director
Tom Luckett	One Water Chief Information Officer
Greg Heitzman	Executive Director (retired 9/30/15)

FINANCIAL MANAGERS:

Brad Good	Controller
Rene' Thomas	Director of Procurement and Supplier Diversity
Sharon Dawson	Revenue Manager
Patrick Meador	Budget Administrator

Financial Section

FINANCIAL SECTION

INDEPENDENT AUDITOR'S REPORT

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

Report on the 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, 2016 and 2015, 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, 2016 and 2015, and the changes in financial position and its 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 9, the schedule of proportionate share of the net pension liability and the schedule of employer contributions on page 40-41 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was 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 audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Crowe Horwath LLP

Crowe Horwath LLP

Louisville, Kentucky
December 19, 2016

As management of Louisville and Jefferson County Metropolitan Sewer District (MSD), a component unit of the Louisville/Jefferson County Metro Government, we offer readers of MSD's financial statements this narrative overview and analysis of the financial activities for the fiscal years ended June 30, 2016 and 2015. We encourage readers to consider the information presented in conjunction with the letter of transmittal which can be found on pages i-iii of this report.

OVERVIEW OF THE FINANCIAL STATEMENTS

MSD's basic financial statements consist of the Statement of Net Position; Statement of Revenues, Expenses, and Changes in Net Position; Statement of Cash Flows; and Notes to the Financials.

The Statement of Net Position includes all of MSD's assets, liabilities and deferred outflow and inflow of resources. It also 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.

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

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

FINANCIAL HIGHLIGHTS

Total Net Position increased by $15.5 million, or 2.7%, as a result of operations.

Operating Revenues increased by $13.4 million, or 5.8% primarily due to a rate increase of 5.5% effective August 1, 2015.

Total Operating Expenses increased by $14.5 million, or 10.4%. Utility expenses increased $4.4 million. Salaries and related overhead increased $5.0 million. The primary driver of the increase in salaries and related overhead was pension expense which increased $4.1 million.

Total Investment Income increased $268 thousand.

Non-Operating Expenses increased $2.4 million or 3.4%.

STATEMENT OF NET POSITION

A summary of MSD's Statement of Net Position is shown below in Figure 1.

Figure 1

	FY 2016	FY 2015	% Change 2015-2016	FY 2014
Unrestricted current assets	$ 103,671	$ 93,761	10.6%	$ 111,934
Restricted current assets	20,378	16,342	24.7%	27,886
Capital assets	2,573,262	2,392,466	7.6%	2,270,502
Restricted non-current assets	149,447	138,780	7.7%	134,036
Other non-current assets	29,315	30,807	(4.8%)	33,501
Total assets	2,876,073	2,672,156	7.6%	2,577,859
Deferred outflows of resources	23,708	20,407	16.2%	22,862
Total assets and deferred outflows	2,899,781	2,692,563	7.7%	2,600,721
Current liabilities	17,420	14,936	16.6%	13,653
Current liabilities from restricted assets	85,186	74,697	14.0%	57,639
Non-current liabilities	2,087,962	1,925,627	8.4%	1,898,150
Total liabilities	2,190,568	2,015,260	8.7%	1,969,442
Deferred inflows of resources	108,633	92,233	17.8%	82,293
Total liabilities and deferred outflows	2,299,201	2,107,493	9.1%	2,051,735
Invested in capital assets, net	534,946	506,187	5.7%	418,784
Restricted, net	84,639	80,424	5.2%	148,451
Unrestricted	(19,005)	(1,541)	1133.3%	(18,249)
Total net position	600,580	585,070	2.7%	548,986
Total liabilities , deferred inflows & net position	$ 2,899,781	$ 2,692,563	7.7%	$ 2,600,721

The change in MSD's net position was $15.5 million in FY 2016 compared to $36.1 million in FY 2015. In FY 2016 total assets and deferred outflow of resources increased by $207 million. This overall increase can be attributed primarily to additions to plant, lines and other facilities which were financed by the issuance of $175 million in Revenue Bonds. In FY 2015, total assets and deferred outflows or resources increased by $91.8 which was also primarily attributable to additions to plant, lines and other facilities financed by the issuance of $80 million in Revenue Bonds.

In FY 2016 total liabilities and deferred inflow of resources increased by $191.7 million. This increase is due to an increase in bonds payable of $146 million as a result of the issuance of the 2015A Revenue Bonds, a decrease in the fair value of swaps of $23 million and an increase in net pension liability of $16.7 million. In FY 2015 the increase in total liabilities and deferred inflow of resources was $55.8 million due to an increase in accounts payable for construction of $16 million, a decrease in the fair value of swaps of $5.2 million, deferred inflows related to pension of $5.8 million and an increase in bonds payable of $34.6 million as a result of the issuance of the 2014A Revenue Bonds.

Unrestricted net position decreased $17.5 million during FY 2016.

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

A summary of MSD's Statement of Changes in Net Position is shown below in Figure 2.

Figure 2

Condensed Statements of Revenues, Expenses and Changes in Net Position
(amounts in thousands)

	FY 2016	FY 2015	% Change 2015-2016	FY 2014
Service charges	$ 238,480	$ 225,462	5.8%	$ 214,056
Other operating income	4,810	4,407	9.1%	2,576
Total operating revenues	243,290	229,869	5.8%	216,632
Investment income	17,891	17,623	1.5%	20,330
Total revenues	261,181	247,492	5.5%	236,962
Depreciation & amortization expense	62,820	63,321	(0.8%)	63,516
Service and administrative costs	87,155	76,245	14.3%	75,246
GASB 68 pension expense	4,003	(127)	(3252.0%)	-
Nonoperating expenses	73,779	71,334	3.4%	71,128
Change in fair value - swaps	22,951	5,240	338.0%	1,222
Total expenses	250,708	216,013	16.1%	211,112
Net income (loss) before contributions	10,473	31,479	(66.7%)	25,850
Contributions	5,037	4,605	9.4%	8,103
Increase (decrease) in net position	15,510	36,084	(57.0%)	33,953
Net position - begininng	585,070	548,986	6.6%	515,033
Net Position - ending	$ 600,580	$ 585,070	2.7%	$ 548,986

Operating revenues as of June 30, 2016 were $243.3 million compared to $229.9 million for the same period last year and $216.6 million in FY 2014. This represents an increase of $13.4 million, or 5.8%, in FY 2016 and $13.2 million, or 6.1%, in FY 2015. The increases in operating revenues are driven by Board-approved rate increases of 5.5% in FY 2016 and 5.5% in FY 2015. Wastewater service charges totaled $183.6 million as of June 30, 2016. This represents an increase of $9.7 million, or 5.6%, from a year ago. Wastewater services charges for FY 2015 and FY 2014 were $173.9 million and $165.6 million, respectively. The majority of MSD's wastewater customers are billed based on the volume of water used. Because substantially all of MSD's customers are also customers of the Louisville Water Company, this charge is billed and collected by the Louisville Water Company on behalf of MSD. Stormwater service charges were $54.9 million as of June 30, 2016. This represents an increase of $3.3 million, or 6.4%, from the same period one year ago. Stormwater service charges for FY 2015 and FY 2014 were $51.6 million and $48.5 million, respectively. Other operating income was $4.8 million in FY 2016, which is $403 thousand more than FY 2015. FY 2015 and FY 2014 were $4.4 million and $2.6 million respectively.

Gross service and administrative costs increased by $15 million in FY 2016 from their FY 2015 level and increased by $0.8 million in FY 2015 from their FY 2014 level. A key factor driving the increase in service and administrative costs in FY 2016 were repair expenses associated with the Morris Forman Water Quality Treatment Center flood. MSD's employee count, including vacant positions, increased from 591 in FY 2015 to 607 full-time equivalent positions in FY 2016. Labor cost was 49% of gross service and administrative costs in FY 2016, 51% in FY 2015 and 52% in FY 2014. Figure 3 shows the composition of gross service and administrative costs by major classification for the past three fiscal years.

Figure 3[1]

Service and Administrative Costs
(amounts in thousands)

	2016	2015	2014
Labor	$ 55,229	$ 54,378	$ 57,249
Utilities	18,256	13,817	14,563
Materials and supplies	4,183	9,706	8,151
Contractual services	28,376	20,943	19,483
Chemicals	4,371	3,681	3,306
Fuel	1,326	1,616	1,836
Insurance premiums & recovery	388	(960)	1,499
Bad debt	2,603	2,068	1,781
Other operating expense	2,939	1,052	945
Service & administrative costs	117,671	106,301	108,814
Capitalized overhead	(30,516)	(30,056)	(33,568)
Net service and administrative costs	$ 87,155	$ 76,245	$ 75,246

MSD recorded a net operating income of $89.3 million in FY 2016 which is a decrease of $1.1 million, or 1.2%, compared to FY 2015. Net operating income in FY 2015 and FY 2014 was $90.4 million and $77.9 million, respectively.

STATEMENT OF CASH FLOWS

A summary of MSD's Statement of Cash Flows is shown below in Figure 4.

Figure 4

Condensed Statement of Cash Flows
(amounts in thousands)

	FY 2016	FY 2015	% Change 2015-2016	FY 2014
Cash flows from:				
Operating activities	$ 155,163	$ 152,718	1.6%	$ 140,040
Capital and related financing activites	(142,129)	(184,324)	(22.9%)	(119,711)
Investing activities	(6,909)	5,289	(230.6%)	(24,667)
Change in cash and temporary investments	6,125	(26,317)	(123.3%)	(4,338)
Cash and temporary investments, Beginning of year	97,970	124,287	(21.2%)	128,625
Cash and temporary investments, End of year	$ 104,095	$ 97,970	6.3%	$ 124,287

Cash and Temporary Investments were $104 million at the end of FY 2016 which is an increase of $6 million from FY 2015 or 6.3%. Cash from Operating Activities in FY 2016 was $155 million which is an

[1] GASB 68 pension expense has been excluded from this chart of Service and Administrative Costs.

increase of $2.4 million compared to FY 2015. Cash from Operating Activities in FY 2015 was $153 million which was an increase of $12.7 million compared to FY 2014. Cash used by Capital and Related Financing Activities in FY 2016 and FY 2015 was $142 million and $184 million, respectively. Cash used by Investing Activities was $7 million in FY 2016 compared to $5 million provided by Investing Activities in FY 2015.

CAPITAL ASSETS

MSD's total gross capital assets (additions) increased by $377.9 million in FY 2016. Major additions include $140 million worth of wastewater treatment facilities and $101 million worth of sewer line installations.

Readers are encouraged to review Note 5 on page 21 of this report and the Comparative Schedules of Plant, Lines, and Other Facilities found on page 45 of this report for additional information regarding changes to capital assets.

Depreciation expense was $62.8 million or $0.5 million less than FY 2015. These expenses are expected to increase in future years as MSD adds additional capital assets to its wastewater and stormwater systems.

DEBT ADMINISTRATION

A summary of significant debt transactions follows:

On October 6, 2015, MSD issued $175 million of Sewer and Drainage System Revenue Bonds, Series 2015A. Proceeds of the 2015A bonds, net of issuance cost were used to pay the cost of improvements to MSD's sewer and drainage system.

On October 6, 2015, MSD issued $81.7 million of Sewer and Drainage System Revenue Bonds, Series 2015B. Proceeds of the 2015B bonds, net of issuance cost and together with funds released from the Reserve Account were used to currently refund $87.3 million of MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 2006A. The refunded bonds are considered defeased and the liability was removed from MSD's Statement of Net Position. The refunding reduced debt service payments over the next 23 years by $18.4 million and resulted in a net present value savings of $12.3 million.

MSD ended fiscal year 2016 with $2.1 billion in outstanding long-term debt compared to $2.0 billion in outstanding long-term debt at the end of fiscal year 2015. Additional information on MSD's long-term debt can be found in Note 7 on pages 23-27 of this report.

Short term debt outstanding payable from restricted assets at the end of fiscal year 2016 totaled $85.1 million compared to $74.7 million at the end of fiscal year 2015.

Net interest expense totaled $73.8 million in FY 2016, an increase of $2.5 million from FY 2015.

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 debt service ratio tests of the 1993 Sewer and Drainage System Revenue Bond Resolution. MSD's debt service coverage, calculated on the foregoing basis, was 187% in 2016 and 188% in 2015 (see Figure 5).

The 1993 Resolution and its supplements require MSD to provide available revenues sufficient to pay 110% of each year's aggregate net debt service on Revenue Bonds and 100% of operating expenses. 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.

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.

Figure 5[2]

Debt Service Coverage
(amounts in thousands)

	FY 2016	FY 2015	% Change 2015-2016	FY 2014
Total available revenues	270,025	249,392	8.3%	239,091
Total net operating expenses	87,155	76,245	14.3%	75,246
Net revenue	182,870	173,147	5.6%	163,845
Aggregate net debt service	97,592	92,308	5.7%	90,035
Debt service coverage ratio	187%	188%	(0.1%)	182%

FUTURE ECONOMIC FACTORS

MSD's FY17 budget projects an operating revenue increase of 6.1% over FY 2016. The MSD Board approved a 6.9% rate increase for wastewater and stormwater volume and service charges as well as optional and quality charge rates that are assessed to commercial and industrial wastewater customers effective August 1, 2016.

Moody's Investors Service affirmed MSD's Aa3 rating on the district's $1.8 billion of outstanding sewer and drainage system revenue bonds on August 3, 2016. The outlook remains stable. The Aa3 rating reflects MSD's large service area and stable customer base as well consistent and timely rate increases. Moody's assigned a MIG1 rating to MSD's $226.3 million Sewer and Drainage System Subordinated Bond Anticipation Notes on October 6, 2016.

S&P Global Ratings assigned its AA rating to MSD's outstanding debt on August 2, 2016. The outlook is positive. Their rating reflects a broad and diverse service area with low industry risk. S&P assigned its SP-1+ short term rating to MSD's 2015 sewer and drainage system bond anticipation notes on October 6, 2016.

One Water is a key strategy which will shape MSD's economic future. In 2014 MSD executed an Interlocal Agreement with Louisville Water Company and MSD that is known as One Water. One Water's long term objectives are to maintain the quality of our community's water, provide cost savings that can be used to reinvest in infrastructure and reduce the level of rate increases, and to provide new revenue opportunities.

[2] Excludes GASB 68 pension expense

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). The agreement calls for MSD to design and implement projects within specified deadlines that will eliminate sewer overflows in its service area. The cost of the projects is estimated to be $850 million over the next two decades. MSD has submitted plans to finance the projects through additional bonds and future rate increases. In a letter dated June 6, 2014, MSD requested approval from the KEPPC and the EPA for the Integrated Overflow Abatement Plan (IOAP) 2012 Modifications, dated May 2014. The IOAP 2012 Modifications represents a revision to 28 separate projects set forth in the original IOAP, dated September 30, 2009. The IOAP Modifications were approved and will supersede and replace the 2009 IOAP. To date, MSD has complied with all submittals and reports requirements contained in the Amended Consent Decree. For additional information on the Consent Decree see Note 13 to the financial statements.

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

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF NET POSITION
YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	2016	2015
Current Assets		
Unrestricted cash and cash equivalents	$ 69,481	$ 63,013
Unrestricted investments	100	100
Restricted cash and cash equivalents	5,379	16,342
Restricted investments	14,999	0
Accounts receivable, less allowance for doubtful accounts of $986 (2016), $913 (2015)	26,696	23,787
Inventories	4,210	3,981
Accrued interest receivable	1,193	1,193
Prepaid expenses and other current assets	1,991	1,687
Total current assets	124,049	110,103
Non-current Assets		
Restricted cash and cash equivalents	29,235	18,615
Restricted investments	120,212	120,165
Capital assets -pant, lines and other facilities, net	2,573,262	2,392,466
Other non-current assets	29,315	30,807
Total non-current assets	2,752,024	2,562,053
Total Assets	**$ 2,876,073**	**$ 2,672,156**
Deferred Outflow of Resources		
Deferred outflow - pension contributions	11,580	4,576
Unamortized loss on refunding	12,128	15,831
Total deferred outflow of resources	23,708	20,407
Total Assets and Deferred Outflow of Resources	**$ 2,899,781**	**$ 2,692,563**
Current Liabilities		
Current liabilities (payable from unrestricted assets):		
Accounts payable and accrued expenses	$ 17,420	$ 14,936
Current liabilities (payable from restricted assets):		
Accounts payable and accrued expenses (capital), includes contractor retainage of $14,249 (2016), $8,893 (2015)	33,271	30,607
Accrued interest payable	17,533	13,036
Refundable deposits	2,557	1,639
Current maturities of bonds payable	31,825	29,415
Total current liabilities	102,606	89,633
Non-current Liabilities		
Bonds payable, net	1,790,207	1,644,187
Subordinated Debt	228,412	228,508
Net pension liability	68,653	51,988
Other long term liabilities	690	944
Total non-current liabilities	2,087,962	1,925,627
Total Liabilities	**$ 2,190,568**	**$ 2,015,260**
Deferred Inflow of Resources		
Interest rate swaps	101,832	78,880
Deferred inflow - pension liability	145	5,803
Other deferred inflows	6,656	7,550
Total deferred inflow of resources	108,633	92,233
Total Liabilities and Deferred Inflow of Resources	**$ 2,299,201**	**$ 2,107,493**
Net Position		
Net investment in capital assets	$ 534,946	$ 506,187
Restricted net position	84,639	80,424
Unrestricted net position	(19,005)	(1,541)
Total net position	600,580	585,070
Total Liabilities, Deferred Inflow of Resources and Net Position	**$ 2,899,781**	**$ 2,692,563**

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	2016	2015
Operating Revenues		
Service charges	$ 238,480	$ 225,462
Other operating income	4,810	4,407
Total operating revenues	243,290	229,869
Operating Expenses		
Service and administrative costs	87,155	76,245
GASB 68 pension expense	4,003	(127)
Depreciation and amortization	62,820	63,321
Total operating expenses	153,978	139,439
Income from Operations	89,312	90,430
Non-operating Revenue (Expenses)		
Investment income	7,559	7,527
Build America Bond refund	10,332	10,096
Interest expense - bonds	(86,818)	(83,404)
Interest expense - swaps	(9,514)	(9,737)
Interest expense - other	(8,601)	(4,611)
Amortization of debt discount / premium	12,052	7,887
Amortization of loss on refunding	(1,949)	(1,980)
Capitalized interest	21,051	20,511
Change in fair value - swaps	(22,951)	(5,240)
Total non-operating revenue (expenses) - net	(78,839)	(58,951)
Income before capital contributions	10,473	31,479
Capital contributions	5,037	4,605
Increase in net position	15,510	36,084
Net position, beginning of year	585,070	548,986
Net position, end of year	$ 600,580	$ 585,070

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
COMPARATIVE STATEMENT OF CASH FLOWS
YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	2016	2015
Cash Flows from Operating Activities		
Cash received from customers	$ 240,365	$ 227,975
Cash paid to suppliers	(49,867)	(36,949)
Cash paid to employees	(35,335)	(38,308)
Net Cash Provided by Operating Activities	155,163	152,718
Cash Flows from Capital and Related Financing Activities		
Proceeds from issuance of revenue bonds	256,750	80,000
Proceeds from subordinated debt	226,340	226,340
Build America Bond refund	10,332	10,096
Assessments receivable proceeds	1,740	2,049
Interest received - assessments	426	340
Principal payments on revenue bonds	(114,985)	(45,420)
Interest paid on revenue bonds	(89,169)	(87,813)
Subordinated debt principal payments	(226,436)	(226,432)
Acquisition and construction of capital assets	(206,873)	(143,236)
Acquisition of non-operating property	(254)	(248)
Net Cash Provided (Used) by Capital and Related Financing	(142,129)	(184,324)
Cash Flows from Investing Activities		
Change in investments	(15,047)	1,052
Income received on investments	17,652	13,974
Interest payments - swap agreements	(9,514)	(9,737)
Net Cash Provided (Used) by Investing Activities	(6,909)	5,289
Net Increase (Decrease) in Cash and Cash Equivalents	6,125	(26,317)
Cash and Cash Equivalents, Beginning of Year	97,970	124,287
Cash and Cash Equivalents, End of Year	104,095	97,970
Reconciliation of Operating Income to Net Cash provided by Operating Activities		
Income from operations	89,312	90,430
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation and amortization	62,820	63,321
Accounts receivable	(3,844)	(1,964)
Inventories	(229)	(173)
Prepaid expense	(303)	(250)
Accounts payable	1,502	1,117
Customer deposits	918	71
Accrued liabilities	4,985	166
Net Cash Provided by Operating Activities	$ 155,161	$ 152,718
Non-Cash Capital Financing and Investing Activities		
Contribution of plant, lines and other facilities by developers and property owners	$ 5,037	$ 4,605
Construction costs in accounts payable	33,270	30,607
Change in fair value of investments	786	979
Decrease in interest rate swap deferred revenue	918	932
Change in fair value - swap agreements	$ (22,951)	$ (5,240)

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

NOTE 1 – SIGNIFIGANT ACCOUNTING POLICIES

The financial statements of the Louisville and Jefferson County Metropolitan Sewer District (MSD), a 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 the 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. 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 sewer 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. Sewer 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, but no change in the service charge schedule is final within the Louisville Metro area until approval by Louisville Metro Council. However, the statute provides that such approval may not be arbitrarily withheld and that the schedule shall be sufficient to provide revenues 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.

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 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 Metropolitan 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 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.

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 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 investments[1]. Investment income is reduced by estimated federal arbitrage liability.[2]

Operating/Non-Operating Revenues, Expenses and Receivables: Operating revenues are those revenues that are generated directly from the primary activity of MSD. These revenues are wastewater and stormwater service charges. The Louisville Water Company is 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 bad debt expense and a credit to accounts receivable.

[1] See Note 2 – Deposits and Investments
[2] See Note 7 – Long-Term Debt

DOLLARS IN THOUSANDS

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.

Inventories: Inventories are stated at the lower of cost (principally weighted average cost) or market. They consist 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.

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. The revenues from contributions are part of the change in net position.

Capital Assets - Plant, Lines and Other Facilities: Plant, lines and other facilities are recorded at historical cost or, if contributed, at fair 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 basis[3].

Estimated useful lives on depreciable assets are as follows:

Buildings 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	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 stormwater 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 manor of duration of use of a capital asset, and construction stoppage. A capital asset is generally

[3] See Note 5 – Capital Assets – Plant, Lines, and Other Facilities
[4] See Note 6 – Capitalized Interest

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 the years ended June 30, 2016 and 2015.

Bonds Payable: Bonds payable are recorded at the principal amount outstanding, net of any applicable premium or discount[5].

Bonds outstanding, which have been refunded and economically defeased, are not included in long-term debt. The related assets are not included in investments. The 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.

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. Derivative instruments are reported at fair value as deferred inflow of resources. Changes in fair value of derivative instruments are reported in non-operating revenue (expenses) on the Statement of Revenues, Expenses and Changes in Net Position.

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 which are: 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, 2015, MSD adopted the following GASB pronouncements:

- Statement No. 72: *Fair Value Measurement and Application*
- Statement No. 73: *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement No. 68 and Amendments to Certain Provisions of GASB Statements 67 and 68*

[5] See Note 7 – Long-Term Debt

- Statement No. 76: *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*

Statement No. 72: *Fair Value Measurement and Application* requires governments to disclose how they measure the fair value of investments and the underlying valuation techniques[6].

The objective of Statement No. 73: *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement No. 68 and Amendments to Certain Provisions of GASB Statements 67 and 68* is to improve the usefulness of information about pensions included in the general purpose external financial reports of state and local governments for making decisions and assessing accountability[7].

The objective of Statement No. 76: *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments* is to identify the hierarchy of generally accepted accounting principles (GAAP). This statement addresses the use of authoritative and nonauthoritative literature in the event the accounting treatment for a transaction or event is not specified within authoritative GAAP.[8]

Recent Accounting Pronouncements: The following GASB Pronouncements are being evaluated for future year implementation:

- Statement No. 74: *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* (FY2017)
- Statement No. 75: *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (FY2018)
- Statement No. 77: *Tax Abatement Disclosures* (FY2017)
- Statement No. 80: *Blending Requirements for Certain Component Units – an Amendment of GASB Statement No. 15 (FY2017)*
- Statement No. 81: *Irrevocable Split-Interest Agreements (FY2017)*
- Statement No. 82: *Pension Issues – An Amendment of GASB Statements No. 67, No. 68, and No. 73 (FY2017)*
- *Statement No. 83: Certain Asset Retirement Obligations (FY2019)*

MSD has not determined the impact these statements will have on their financial statements.

[6] See Note 2 – Deposits and Investments
[7] Government Accounting Standards Board, Statement No. 73, page 1, from the Government Accounting Standards Board website http://www.gasb.org/jsp/GASB/Document_C/GASBDocumentPage?cid=1176166143097&acceptedDisclaimer=true, accessed September 7, 2016.
[8] Government Accounting Standards Board, Statement No. 76, pages 1-2, from the Government Accounting Standards Board website http://gasb.org/jsp/GASB/Document_C/GASBDocumentPage?cid=1176166147773&acceptedDisclaimer=true, accessed September 7, 2016.

DOLLARS IN THOUSANDS

NOTE 2 - DEPOSITS AND INVESTMENTS

A comparative statement of cash, cash equivalents and investments held in MSD's portfolio follows:

June 30, 2016

Investment Type	Fair Value	Weighted Average Maturity in Years	Credit Rating
U S Agency Discount Notes	$ 37,728	0.24	Aaa
U S Agency Securities	5,219	1.43	Aaa
Municipal Bonds	92,264	22.53	Aa
Money Market Funds	77,201	0.10	Aaa
Commercial Paper	0		
Repurchase Agreement/Cash	26,894		
Certificate of Deposit	100		
Total	239,406	9.90	
Accrued interest	1,193		
Total cash, cash equivalents and investments	$ 240,599		

June 30, 2015

Investment Type	Fair Value	Weighted Average Maturity in Years	Credit Rating
U S Agency Discount Notes	$ 22,751	0.38	Aaa
U S Agency Securities	5,211	2.45	Aaa
Municipal Bonds	92,202	23.42	Aa
Money Market Funds	69,938	0.11	Aaa
Commercial Paper	19,996	0.10	A-1 / P-1
Repurchase Agreement/Cash	8,037		
Certificate of Deposit	100		
Total	218,235	10.43	
Accrued interest	1,193		
Total cash, cash equivalents and investments	$ 219,428		

Section 66.480 of the Kentucky Revised Statutes and the District's bond resolutions authorize the District 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. MSD bond resolutions and covenants contain similar restrictions.

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.

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 VIII of The Policy outlines the permitted investments and identifies the limitations placed on the types of investments to minimize the risk.

DOLLARS IN THOUSANDS

Interest Rate Risk: The Policy also requires that all investments have among the highest category of ratings by the nationally recognized rating agencies. Credit ratings of current applicable investments are shown in the preceding table. The weighted average maturity in years represents the interest rate risk for MSD.

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, 2016 and 2015.

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

	June 30, 2016	June 30, 2015
Cash and cash equivalents - unrestricted	$ 69,481	$ 63,013
Investments - unrestricted	100	100
Cash and cash equivalents - restricted	34,614	34,958
Investments - restricted	135,211	120,164
Total	$ 239,406	$ 218,235

GASB 72 requires MSD to disclose how we measure the fair value of investments and the underlying valuation techniques. A comparative statement of fair value measurements and valuation techniques follows:

	Fair Value Measurements at June 30, 2016 Using:			
	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:				
Commercial Paper	$ -	$ -	$ -	$ -
U.S. Agencies	-	5,219	-	5,219
U.S. Agency Discount Notes	-	37,728	-	37,728
State and Municipal Obligations	-	92,264	-	92,264
Repurchase Agreement/Cash	26,894	-	-	26,894
Total investments by fair value level	$ 26,894	$ 135,211	$ -	$ 162,105

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	Fair Value Measurements at June 30, 2015 Using:			
	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:				
Commercial Paper	$ -	$ 19,996	$ -	$ 19,996
U.S. Agencies	-	5,211	-	5,211
U.S. Agency Discount Notes	-	22,751	-	22,751
State and Municipal Obligations	-	92,202	-	92,202
Repurchase Agreement/Cash	8,037	-	-	8,037
Total investments by fair value level	$ 8,037	$ 140,160	$ -	$ 148,197

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.

NOTE 3 - RESTRICTED CASH, CASH EQUIVALENTS AND INVESTMENTS

MSD's revenue bond resolution provides that MSD shall maintain in a Debt Service Reserve Account a balance equal to the maximum annual aggregate gross principal and interest due on all outstanding revenue bonds; or, in lieu of cash and investments in that amount, a letter of credit or policy of bond insurance payable in that amount. Cash, cash equivalents and investments segregated as accounts restricted for authorized construction include proceeds from issuance of MSD bonds. Total restricted cash, cash equivalents, and investments at June 30, 2016 and June 30, 2015 was $169,825 and $155,121, respectively.

NOTE 4 - SCHEDULE OF NET POSITION

A comparative schedule of net position follows:

	2016	2015
Net investment in capital assets		
Plant, lines and other facilities net of depreciation	$2,573,262	$2,392,466
Outstanding debt that applies to plant, lines and other facilities	(2,050,444)	(1,902,110)
Deferred outflows and inflows of resources	12,128	15,831
Total	534,946	506,187
Restricted for:		
Assets restricted for debt service	169,825	155,121
Liabilities associated with restricted debt service	(85,186)	(74,697)
Net position, restricted	84,639	80,424
Unrestricted net position	(19,005)	(1,541)
Total net position	$ 600,580	$ 585,070

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

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

Year ended June 30, 2016

	Beginning Balance	Transfers In/ Additions	Retirements / Reclassifications	Ending Balance
Capital assets:				
Sewer lines	$ 1,277,745	$ 9,514	$ 91,894	$ 1,379,153
Wastewater treatment facilities/goodwill	489,292	46	139,745	629,083
Stormwater drainage facilities	448,853	396	66,649	515,898
Pumping and lift stations	96,812	2,717	40,122	139,651
Administrative facilities	49,342	-	-	49,342
Maintenance facilities	8,037	-	467	8,504
Machinery and equipment	58,335	-	1,708	60,043
Miscellaneous	27,060	42	3,557	30,659
Capitalized interest	322,312	21,051	-	343,363
Total capital assets	2,777,788	33,766	344,142	3,155,696
Less accumulated depreciation and amortization:				
Sewer lines	(287,087)	(15,995)	-	(303,082)
Wastewater treatment facilities/goodwill	(346,625)	(20,089)	-	(366,714)
Stormwater drainage facilities	(124,842)	(5,646)	-	(130,488)
Pumping and lift stations	(50,828)	(4,844)	-	(55,672)
Administrative facilities	(33,962)	(1,728)	-	(35,690)
Maintenance facilities	(5,920)	(233)	-	(6,153)
Machinery and equipment	(55,697)	(1,672)	-	(57,369)
Miscellaneous	(20,941)	(3,296)	-	(24,237)
Capitalized interest	(82,601)	(8,102)	-	(90,703)
Total accumulated depreciation/amortization	(1,008,503)	(61,605)	-	(1,070,108)
Construction in progress	623,181	208,792	(344,299)	487,674
Net Fixed Assets	$ 2,392,466	$ 180,953	$ (157)	$ 2,573,262

Capital assets include non-depreciable assets for land related to the facilities and pumping and lift stations. The carrying value was $14,854 and $14,889 at June 30, 2016 and 2015 respectively.

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Year ended June 30, 2015

	Beginning Balance	Transfers In/ Additions	Retirements / Reclassifications	Ending Balance
Capital assets:				
Sewer lines	$ 1,274,180	$ 3,565	$ -	$ 1,277,745
Wastewater treatment facilities/goodwill	489,289	4	(1)	489,292
Stormwater drainage facilities	448,899	-	(46)	448,853
Pumping and lift stations	96,819	-	(7)	96,812
Administrative facilities	49,342	-	-	49,342
Maintenance facilities	8,037	-	-	8,037
Machinery and equipment	58,335	-	-	58,335
Miscellaneous	27,060	-	-	27,060
Capitalized interest	301,800	20,512		322,312
Total capital assets	2,753,761	24,081	(54)	2,777,788
Less accumulated depreciation and amortization:				
Sewer lines	(271,417)	(15,669)	-	(287,086)
Wastewater treatment facilities	(326,465)	(20,161)	-	(346,626)
Stormwater drainage facilities	(119,717)	(5,125)	-	(124,842)
Pumping and lift stations	(46,148)	(4,680)	-	(50,828)
Administrative facilities	(32,216)	(1,746)	-	(33,962)
Maintenance facilities	(5,724)	(195)	-	(5,919)
Machinery and equipment	(52,415)	(3,281)	-	(55,696)
Miscellaneous	(17,310)	(3,632)	-	(20,942)
Capitalized interest	(75,014)	(7,588)	-	(82,602)
Total accumulated depreciation/amortization	(946,426)	(62,077)	-	(1,008,503)
Construction in progress	463,167	159,960	54	623,181
Net Fixed Assets	$ 2,270,502	$ 121,964	$ -	$ 2,392,466

NOTE 6 - CAPITALIZED INTEREST

A comparative schedule of capitalized interest and net interest expense reported in non-operating expenses in 2016 and 2015 follows:

	2016	2015
Interest incurred	$ 94,830	$ 91,845
Less interest capitalization	(21,051)	(20,511)
Interest expense, net	$ 73,779	$ 71,334

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NOTE 7 - LONG-TERM DEBT

A comparative schedule of long-term debt outstanding at June 30, 2016 and 2015 follows:

Revenue Bonds	Original Issue Amount	Interest Rates	Final Payment In	Outstanding as of: 2016	2015
2006 Sewer and Drainage System Revenue Bonds Series 2006A	$ 100,000	4.00% - 5.00%	2038	$ -	$ 87,290
2007 Sewer and Drainage System Revenue Bonds Series 2007A	61,125	4.00% - 5.00%	2025	44,425	45,815
2008 Sewer and Drainage System Revenue Bonds Series 2008A	105,000	4.00% - 5.00%	2038	97,860	99,850
2009A Sewer and Drainage System Revenue Bonds Series 2009A	76,275	5.00%	2022	41,485	47,280
2009B Sewer and Drainage System Revenue Bonds Series 2009B	225,770	2.00% - 5.00%	2023	136,115	150,900
2009C Sewer and Drainage System Revenue Bonds Series 2009C	180,000	5.98%	2040	180,000	180,000
2010A Sewer and Drainage System Revenue Bonds Series 2010A	330,000	6.25%	2043	330,000	330,000
2011A Sewer and Drainage System Revenue Bonds Series 2011A	263,360	3.00% - 5.00%	2034	254,590	256,490
2013A Sewer and Drainage System Revenue Bonds Series 2013A	115,790	4%	2036	115,790	115,790
2013B Sewer and Drainage System Revenue Bonds Series 2013B	119,515	4.00% - 5.00%	2038	118,255	119,515
2013C Sewer and Drainage System Revenue Bonds Series 2013C	100,000	3.00% - 5.00%	2044	99,750	99,875
2014A Sewer and Drainage System Revenue Bonds Series 2014A	80,000	4.00% - 5.00%	2045	79,950	80,000
2015A Sewer and Drainage System Revenue Bonds Series 2015A	175,000	3.125% - 5.00%	2046	175,000	-
2015B Sewer and Drainage System Revenue Bonds Series 2015B	81,750	2.625% - 5.00%	2038	81,350	-
Total long-term debt				1,754,570	1,612,805
Less: current maturities				(31,825)	(29,415)
Add : unamortized premium/discount				67,462	60,797
Total long-term debt, net				$ 1,790,207	$ 1,644,187

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A schedule of future debt service requirements after June 30, 2016 follows:

	Revenue Bonds		
	Principal	Interest	Total
Year Ending June 30,			
2017	$ 31,825	$ 87,597	$ 119,422
2018	33,415	86,016	119,431
2019	35,100	84,353	119,453
2020	36,875	82,601	119,476
2021	39,655	80,840	120,495
2022-2026	209,680	373,205	582,885
2027-2031	217,810	315,706	533,516
2032-2036	292,755	272,094	564,849
2037-2041	504,965	180,248	685,213
2042-2046	352,490	40,585	393,075
	$ 1,754,570	$ 1,603,245	$ 3,357,815

A comparative summary of current and long-term revenue bond activity for the years ended June 30, 2016 and 2015 follows:

	2016	2015
Revenue Bonds - beginning of year, net	$ 1,612,805	$ 1,578,225
Bonds issued	256,750	80,000
Principal paid on bonds and bond refunding	(114,985)	(45,420)
Revenue Bonds - end of year, net	$ 1,754,570	$ 1,612,805

MSD long-term debt is issued to provide sufficient funding for sewer and drainage projects approved for construction.

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, 2016 and 2015, MSD’s accrued liability for arbitrage rebate was $760 and $667, respectively.

A summary of significant debt transactions follows:

On October 6, 2015, MSD issued $175,000 of Sewer and Drainage System Revenue Bonds, Series 2015A. Proceeds of the 2015A bonds, net of issuance cost were used to pay the cost of improvements to MSD’s sewer and drainage system.

On October 6, 2015, MSD issued $81,750 of Sewer and Drainage System Revenue Bonds, Series 2015B. Proceeds of the 2015B bonds, net of issuance cost and together with funds released from the reserve account were used to currently refund $87,290 of MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 2006A. The refunded bonds are considered defeased and the liability was removed from MSD's Statement of Net Position. The refunding reduced debt service payments over the next 23 years by $18,420 and resulted in a net present value savings of $12,278.

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On November 4, 2014, MSD issued $80,000 of Sewer and Drainage System Revenue Bonds, Series 2014A. Proceeds of the 2014A bonds, net of issuance cost were used to pay the cost of improvements to MSD's sewer and drainage system.

Debt Service Covenant: A debt service coverage ratio covenant has been established under the 1993 Sewer and Drainage System Revenue Master Bond Resolution. MSD was in compliance with the ratio covenant as of June 30, 2016 and 2015.

Derivatives: At June 30, 2016 MSD had the following derivative instruments outstanding:

Item	Counter-Party	Initial Notional Amount	Current Notional Amount	MSD Payment Terms	6/30/2016 Fair Value	6/30/2015 Fair Value	Bond Issue to which Swap Relates	Change in Fair Value
A	Wells Fargo	$180,716	$180,716	4.4215%	$ (81,445)	$(63,086)	1999	$ (18,359)
B	Bank of America	56,433	45,284	4.4215%	(20,386)	(15,794)	1999	(4,592)
	Total	$237,149	$226,000		$(101,832)	$(78,880)		$ (22,952)

Both swaps have termination dates of May 15, 2033. Payments are due on the fifteenth of each month beginning December 15, 2009. MSD receipt terms are 67% of 30-day LIBOR.

A comparative summary of the change in fair value of the swaps for the years ended June 30, 2016 and 2015 follows:

	2016	2015
Fair value - beginning of year	$ (78,880)	$ (73,640)
Change in fair value	(22,952)	(5,240)
Fair value - end of year	$(101,832)	$ (78,880)

MSD's swaps are measured at fair value using significant other observable inputs (level 2) with a mid-market derivative valuation using a 67% of LIBOR Fixed Payer Swap rate.

MSD originally entered into interest rate swaps as a hedging derivative instrument. The interest rate swaps were found to be ineffective as of June 30, 2010, based on evaluation and consideration of consistent critical terms and quantitative methods. The swaps remain in the portfolio to lower interest rate risk associated with the Bond Anticipation Note. The total of investment derivatives are reported as interest rate swaps 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). MSD's two outstanding swaps consist of two Floating-to-Fixed swaps described as follows:

> Floating-to-Fixed Swaps are structured so that the notional amount of the swap decreases over time corresponding to the maturity and sinking fund schedule of the actual or expected bond

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issue being hedged. The Floating-to-Fixed swaps have been done on a forward basis with the swap payments starting at a future date when MSD anticipates refunding outstanding debt, which can be issued as variable rate bonds or short-term notes. In 2001, MSD entered into two swaps (A and B) for a synthetic advance refunding of its Series 1999A Bonds. In August 2009 MSD issued Bond Anticipation Notes to refund a portion of its Series 1999A Bonds. In conjunction with the refunding MSD entered into reversal swaps which offset the refunded portion of the A and B swaps. The non-reversed portions of the fixed-to-floating A and B swaps provide a hedge against future higher rates on any long term debt or renewal Bond Anticipation Notes used to refinance MSD's Bond Anticipation Note.

Credit Risk: MSD has implemented steps to safeguard it against the risks associated with the aforementioned swap transactions. If the counter-party does not maintain A1/A+ ratings from Moody's and Standard and Poor's, 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 October 2002 (A and B) swaps were awarded to multiple firms to further mitigate the credit risk associated with the transactions. The credit ratings as of 6/30/2016 for the counter-parties are as follows:

Credit Ratings

	Moody's	Standard & Poor's
Bank of America, N.A.	P-1(cr)	A
Wells Fargo Bank, N.A.	Aa1(cr)	AA -

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 positive and negative fair values of the swap agreements were provided by a third-party financial advisor. The net swap payments made in FY 2016 and FY 2015 were $9,514 and $9,737, respectively.

MSD secured a $10,000 line of credit in October 2015. As of June 30, 2016 MSD does not owe anything on its line of credit.

Swap Terminations: MSD enters 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 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. This payment will be amortized annually into income until 2019, the original termination date on the agreement.

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- In April 2006, MSD entered into a swap agreement with Deutsche Bank AG for an initial notional amount of $171,405 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 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. 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. This payment will be amortized annually into income until 2033, the original termination date of the agreement.

- In May and June of 2013, MSD terminated two Floating to Fixed Interest Rate swap agreements, two Basis swap agreements and three Reversal swap agreements. Additionally, MSD partially terminated two Floating to Fixed Interest Rate swap agreements. The termination value of all swap agreements resulted in a net payment by MSD of $152. This action will result in a savings of $13.5 million over the next ten years.

NOTE 8 – BOND ANTICIPATION NOTE

On November 3, 2015 MSD issued $226,340 of Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2015 Notes with a coupon rate of 5.00% and an effective interest rate of 0.49%. The proceeds of the notes were used to refinance the 2014 Notes. The 2015 Notes matured on November 22, 2016, and were refinanced with Series 2016 Notes described in Note 13 – Subsequent Events.

On November 4, 2014 MSD issued $226,340 of Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2014 Notes with a coupon rate of 2.00% and an effective interest rate of 0.28%. The proceeds of the notes were used to refinance the 2013 Notes. The 2014 Notes matured on November 24, 2015.

A comparative summary of subordinated debt for the years ended June 30, 2016 and 2015 follows:

	June 30, 2016	June 30, 2015
Suboridnated debt - beginning of year	$ 228,508	$ 228,601
Debt incurred	226,340	226,340
Principal paid on debt	(226,436)	(226,433)
Subordinated debt - end of year	$ 228,412	$ 228,508

Under GASB 62, the Bond Anticipation Note (BAN) is considered a noncurrent liability because the Series 2015 BAN was replaced with a new BAN (Series 2016) in November 2016 which extends the debt to November 2017. The BAN is used to finance capital projects.

NOTE 9 - RETIREMENT PLAN AND POSTRETIREMENT BENEFITS

General Information about the Pension 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), 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 Systems 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.

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 liability, deferred outflow of resources and deferred inflow of resources related to pensions, and pension 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.

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

Nonhazardous Normal Retirement:

***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.

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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.

Service Credit	Benefit Factor
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 retirement 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.

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.

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For the fiscal years ended June 30, 2016 and 2015, participating employers contributed 17.06% and 17.67% 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.

MSD has met 100% of its contribution funding requirement for the fiscal years ended June 30, 2016, 2015, and 2014. Employer pension contributions were $4,767 and $4,576 for the years ended June 30, 2016 and 2015.

Members whose participation began before 9/1/2008:

Nonhazardous 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%. Member entitled to a full refund of contributions with interest.

Members whose participation began on or after 9/1/2008:

Nonhazardous 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%. Member 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 on or after 1/1/2014

Nonhazardous contribution 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 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.

Healthcare Plan: The Kentucky Retirement Systems Insurance Fund ("Fund") was established to provide hospital and medical insurance for members receiving benefits from CERS, the Kentucky Employees Retirement System and the State Police Retirement System. The Fund pays a prescribed contribution for whole or partial payment of required premiums to purchase hospital and medical insurance. For the fiscal years ended June 30, 2015 and 2014, insurance premiums withheld from benefit payments for members of CERS were $22.6 and $24.2, respectively.

<u>Plan Information for June 30, 2016 Financial Statements:</u>

Total Pension Liability: The total pension liability ("TPL") was determined by an actuarial valuation as of June 30, 2015, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.25 percent
Salary increases	4.00 percent, average, including inflation
Investment rate of return	7.50 percent, 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, 2015 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 7.50%. The discount rate changed from 7.75% since the last measurement period.

(b) Projected cash flows: The projection of cash flows used to determine the discount rate assumed that local employers would contribute the actuarially determined contribution rate of projected compensation over the remaining 28 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. Several factors are considered in evaluating the long-term rate of return assumption including long term historical data, estimates inherent in current market data, and a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected return, net of investment expense and inflation) were developed by the investment consultant for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The capital market assumptions developed by the investment consultant are intended for use over a 10-year horizon and may not be useful in setting the long-term rate of return for funding pension plans which covers a longer timeframe. The assumption is intended to be a long term assumption and is not expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years.

(d) Municipal bond rate: The discount rate determination does not use a municipal bond rate.

(e) Periods of projected benefit payments: Projected future benefit payments for all current plan members were projected through 2117. The long-term assumed investment 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	Long-Term Target Allocation	Expected Real Rate of Return
Combined equity	44.00%	5.40%
Combined Fixed Income	19.00%	1.50%
Real Return (Diversified Inflation Strategies)	10.00%	3.50%
Private equity	10.00%	8.50%
Real estate	5.00%	4.50%
Absolute Return (Diversified Hedge Funds)	10.00%	4.25%
Cash Equivalent	2.00%	-0.25%
Total	100.00%	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 7.50% 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 ("NPL") of the System, calculated using the discount rate of 7.50 percent, 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 (6.50 percent) or one percentage-point higher (8.50 percent) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Authority's net position liability - Nonhazardous	$ 87,645	$ 68,653	$ 52,389

Employer's Portion of the Collective Net Pension Liability: MSD's proportionate share of the Plan's net pension liability, as indicated in the prior table, is $68,653. MSD's proportionate share of the CERS plan was approximately 1.597% for Nonhazardous service employees. The liability was distributed based on 2015 actual employer contributions to the plan.

Measurement Date: June 30, 2015 is the actuarial valuation date upon which the total pension liability is based. No update procedures were used to determine the total pension liability.

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 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

DOLLARS IN THOUSANDS

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.

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's proportionated share of Plan pension expense was $7,474 for Nonhazardous service employees.

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. The table below provides a summary of the deferred inflows and outflows as of the Measurement Date.

For year ending June 30, 2016:

	Deferred Outflow of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	$ 571	$ -
Change of assumptions	6,923	-
Changes in proportion and differences between employer contributions and proportionate shares of contributions	-	(145)
Differences between expected and actual investment earning on plan investments	615	-
	8,109	(145)
Contributions subsequent to the measurement date	4,767	-
Total	$ 12,876	$ (145)

Deferred outflows of resources resulting from employer contributions subsequent to the measurement date will be recognized as a reduction of net pension liability in the year ending June 30, 2017. The remainder of the deferred outflow of resources is amortized over five years with remaining amortization as follows:

2017	$ 2,720
2018	2,720
2019	1,286
2020	1,238

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

DOLLARS IN THOUSANDS

Plan Information for June 30, 2015 Financial Statements:

Total Pension Liability: The total pension liability ("TPL") was determined by an actuarial valuation as of June 30, 2014, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.5 percent
Salary increases	4.5 percent, average, including inflation
Investment rate of return	7.75 percent, net of pension plan investment expense, including inflation

The rates of mortality for the period after service retirement are according to the 1983 Group Annuity Mortality Table for all retired members and beneficiaries as of June 30, 2006 and the 1994 Group Annuity Mortality Table for all other members. The Group Annuity Mortality Table set forward 5 years is used for the period after disability retirement. The actuarial assumptions used in the June 30, 2014 valuation were based on the results of an actuarial experience study for the period July 1, 2005 - June 30, 2008.

Discount rate assumptions:

(a) Discount rate: The discount rate used to measure the total pension liability was 7.75%.

(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 29 year amortization period of the unfunded actuarial accrued liability. The statutorily 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 prepared as of June 30, 2008, performed for the period covering fiscal years 2005 through 2008, is outlined in a report dated August 25, 2009. Several factors are considered in evaluating the long-term rate of return assumption including long term historical data, estimates inherent in current market data, and a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected return, net of investment expense and inflation) were developed by the investment consultant for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The capital market assumptions developed by the investment consultant are intended for use over a 10-year horizon and may not be useful in setting the long-term rate of return for funding pension plans which covers a longer timeframe. The assumption is intended to be a long term assumption and is not expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years.

(d) Municipal bond rate: The discount rate determination does not use a municipal bond rate.

(e) Periods of projected benefit payments: Projected future benefit payments for all current plan members were projected through 2116.

(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:

DOLLARS IN THOUSANDS

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	30.00%	8.45%
International equity	22.00%	8.85%
Emerging market equity	5.00%	10.50%
Private equity	7.00%	11.25%
Real estate	5.00%	7.00%
Core U.S. fixed income	10.00%	5.25%
High-Yield U.S. fixed income	5.00%	7.25%
Non-U.S. fixed income	5.00%	5.50%
Commodities	5.00%	7.75%
Treasury Inflation Protected Securities	5.00%	5.00%
Cash	1.00%	3.25%
Total	100.00%	

The long-term expected rate of return on pension plan assets was established by the KRS Board of Trustees at 7.75% 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 ("NPL") of the System, calculated using the discount rate of 7.75 percent, 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 (6.75 percent) or one percentage-point higher (8.75 percent) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Authority's net position liability - Nonhazardous	$ 68,413	$ 51,988	$ 37,476

Employer's portion of the collective Net Pension Liability: MSD's proportionate share of the Plan's net pension liability is $51,988. MSD's proportionated share of the CERS plan was approximately 1.602% for Nonhazardous service employees. The liability was distributed based on 2014 actual employer contributions to the plan.

Measurement date: June 30, 2014 is the actuarial valuation date upon which the total pension liability is based. No update procedures were used to determine the total pension liability. An expected total pension liability is determined as of July 1, 2013 using standard roll back techniques. The roll back calculation subtracts the annual normal cost (also called the service costs), adds the actual benefit payments and refunds for the plan year and then applies the expected investment rate of return for the year. The procedure was used to determine the total pension liability as of July 1, 2013, is shown in the GASB 67 report for CERS submitted on November 17, 2014.

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

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's proportionated share of Plan pension expense was $4,161 for Nonhazardous service employees.

DOLLARS IN THOUSANDS

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.

The table below provides a summary of the deferred inflows and outflows as of the Measurement Date of June 30, 2015.

	Deferred Outflow of Resources	Deferred Inflow of Resources
Differences between projected and actual investment earnings on Plan investments	$ -	$ 5,803
Employer contributions subsequent to the measurement date	4,576	-
Total	$ 4,576	$ 5,803

Deferred inflows of resources resulting from the differences between projected and actual investment earnings on Plan investments are amortized over a 5 year period. Deferred outflows of resources resulting from employer contributions subsequent to the measurement date will be recognized as a reduction of net pension liability in the year ending June 30, 2016.

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

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 for through various programs.

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 deductible, various liability coverages up to $5,000 per occurrence. Excess insurance may provide an additional $2,000 of coverage, above the LAGIT $5 million, 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 year 2016 LAGIT did not make any MSD claim payments.

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 per occurrence and aggregate.

DOLLARS IN THOUSANDS

A roll forward of worker's compensation claims follows:

	June 30, 2016	June 30, 2015	June 30, 2014
Liability - beginning of year	$ 1,755	$ 1,728	$ 1,832
Claims and changes in estimates	474	1,063	760
Payments	(959)	(1,036)	(864)
Liability - end of year	$ 1,270	$ 1,755	$ 1,728

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, except for flood and vehicle collision coverage, which have separate deductibles. LAGGIT provides coverage for the next $1,000 per occurrence, except for Flood Zone A locations. An excess insurance policy with a third-party carrier covers claims in excess of $1,100.

In the past three fiscal years the LAGGIT Trust paid $112 on a MSD hail claim and $1,000 on a lightning/flood claim, both of which exceeded MSD's deductibles under the Trust. Additionally, FM Global insurance company has advanced payments totaling $2,750 on the lightning/flood claim. There have been no changes in MSD's self-insurance coverage from the prior year.

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 of outstanding assessments and for MSD to receive 104% of the face value of the assessments.

The subsequent agreement allows an additional $5,000 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 ninety days in arrears or the property owner does not respond to the bank's demand for payment within a ninety 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, 2016 and 2015 was $1,728 and $2,063, respectively.

EPA Consent Decree: In April 2005, MSD agreed to enter into a Consent Decree with the Commonwealth of Kentucky's Environmental and Public Protection Cabinet (The Cabinet) 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 Cabinet/EPA for review and joint approval by December 31, 2008, which was completed. The final LTCP includes schedules, deadlines, and timetables for projects to be completed by December 31, 2020. In addition, a Sanitary Sewer Discharge Plan (SSDP) was due by December 31, 2008, which was completed. The SSDP includes schedules and deadlines for capital projects to be completed by the end of 2024. The cost of the projects is estimated to be $850,000.

Also, MSD agreed to pay a civil penalty to the Commonwealth of Kentucky in the amount of one million dollars ($1,000) to resolve the violations alleged in The Cabinet's and EPA's complaints up through the date of entry of the Consent Decree. The agreement also calls for MSD to perform supplemental environmental projects (SEPS) at an amount of not less than $2,250. MSD neither admitted nor denied the alleged violations but acknowledged that discharges occurred and accepted the obligations imposed in the Consent Decree. The Consent Decree, as negotiated, was entered by the U.S. District Court Judge on August 12, 2005. 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 EPA. The agreement called for MSD to design and implement projects within specified deadlines that will eliminate sewer overflows in its service area. In a letter dated June 6, 2014, MSD requested approval from the KEPPC and the EPA for the IOAP 2012 Modifications, dated May 2014. The IOAP 2012 Modifications represent a revision to 28 separate projects set forth in the original IOAP, dated September 30, 2009. The IOAP Modifications were approved and will supersede and replace the 2009 IOAP. To date, MSD has complied with all submittals and reports requirements contained in the Amended Consent Decree. The enforcement actions initiated by the EPA are not unique in the wastewater treatment industry. Several wastewater utilities have signed, or are in the process of signing, Consent Decrees. In the opinion of MSD, the resolution of any violations will not result in material adverse effect on the operation, property or finances of MSD.

Claims and Litigation: Whittenberg Construction Company v. MSD; In the Jefferson County Circuit Court; Case No. 13-CI-000742. This is a breach of contract case stemming from the construction of a wastewater pump station and screening building at the Derek R. Guthrie Water Quality Treatment Center. Among other claims, Whittenberg contends MSD violated the terms of the construction contract pertaining to withholding of superior knowledge and that MSD's contract violates Kentucky's Fairness in Construction Act, KRS 371.425. Extensive discovery has been conducted and is on-going. Although the outcome is not certain, MSD believes it is probable that MSD could lose on these two claims and has, as such, accrued for a loss contingency as of June 30, 2016.

MSD is a defendant in various other 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.

Construction Commitments: The value of construction contracts signed where work has not yet been performed amounted to $148,748 at June 30, 2016 and was $169,112 at June 30, 2015.

NOTE 13 - SUBSEQUENT EVENTS

On August 1, 2016, MSD’s rates for wastewater and stormwater service charges increased by 6.9%.

On August 30, 2016, MSD issued $150,000 of Revenue Bonds (Series 2016A). The proceeds of the Series 2016A Bonds will be used to: (i) pay the costs of issuing the Series 2016A Bonds; (ii) make a deposit to the Reserve Account; and (iii) make a deposit to the Construction and Acquisition fund to pay the costs of improvements to MSD’s sewer and drainage system.

On August 30, 2016, MSD issued $30,875 of Revenue Refunding Bonds (Series 2016B). The proceeds of the Series 2016B Bonds, together with certain amounts in the Reserve Account, will be used to: (i) refund in advance of maturity the outstanding principal amount of MSD’s Sewer and Drainage System Revenue Bonds, Series 2008A maturing May 15, 2019 through May 15, 2026, the proceeds of which were used to finance the costs of improvements to MSD’s sewer and drainage system, and (ii) pay the cost of issuance of the Series 2016B Bonds. The refunding reduced debt service payments over the next 20 years by $7,790 and resulted in a net present value savings of $5,349.

On August 30, 2016 MSD issued $71,755 of Revenue Refunding Bonds (Series 2016C). The proceeds of the Series 2016C Bonds, together with certain amounts in the Reserve Account, will be used to: (i) refund in advance of maturity a portion of the outstanding principal amount of MSD’s Sewer and Drainage System Revenue Bonds, Series 2009A maturing May 15, 2020 through May 15, 2022 and a portion of the outstanding principal amount of 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 refund an earlier series of bonds, which in turn were used to finance or refinance the costs of improvements to MSD’s sewer and drainage system and (ii) pay the cost of issuance of the Series 2016C Bonds. The refunding reduced debt service payments over the next 7 years by $7,754 and resulted in a net present value savings of $4,774.

On November 15, 2016 MSD issued $226,340 of Bond Anticipation Notes. The proceeds of the Series 2016 Notes were used to: (i) pay the costs of issuing the Series 2016 Notes and (ii) refund and retire the Series 2015 Bond Anticipation Notes (see Note 8).

REQUIRED SUPPLEMENTARY INFORMATION

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF PROPORTIONATE SHARE OF THE NET PENSION LIABILITY
COUNTY EMPLOYEES' RETIREMENT SYSTEM - NONHAZARDOUS
FOR THE YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	2016	2015
MSD's proportion of the net pension liability	1.597%	1.602%
MSD's proportionate share of the net pension liability	$ 68,653	$ 51,988
MSD's covered employee payroll	$ 37,900	$ 37,100
MSD's proportion of the net pension liability as a percentage of its covered employee payroll	181.1%	140.1%
Plan fiduciary net postion as a percentage of the total pension liability	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, which information is available.

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 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.

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF EMPLOYER CONTRIBUTIONS
COUNTY EMPLOYEES' RETIREMENT SYSTEM - NONHAZARDOUS
FOR THE YEARS ENDED JUNE 30, 2016 AND 2015
DOLLARS IN THOUSANDS

	2016	2015
Statutorily required contribution for pension	$ 4,767	$ 4,576
MSD contribution in relation to the statutorily required contribution	$ (4,767)	$ (4,576)
Annual contribution deficiency (excess)	-	-
MSD contributions as a percentage of statutorily required contribution for pension	100%	100%
MSD covered employee payroll	$ 39,596	$ 37,900
Contributions as a percentage of MSD's covered employee payroll	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, which information is available.

Statistical Section

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.

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

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

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

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.

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Revenues:										
Service charges	$ 238,480	$ 225,462	$ 214,056	$ 205,222	$ 190,482	$ 183,297	$ 168,610	$ 163,004	$ 156,889	$ 126,490
Other operating income	4,810	4,407	2,576	4,823	1,756	2,379	2,980	4,552	4,394	5,966
Assessments	9,457	1,901	2,129	2,392	2,405	2,740	7,093	4,387	2,251	8,237
Investment income	17,278	17,623	20,330	20,119	40,687	33,700	36,045	25,568	6,085	8,417
Less: capitalized investment income	-	-	-	(3,817)	(1,851)	(12,134)	(5,990)	-	(1,190)	(3,747)
Total revenues	270,025	249,393	239,091	228,739	233,479	209,982	208,738	197,511	168,429	145,363
Operating expenses:										
Service and administrative costs[1]	117,671	106,301	108,814	108,041	108,325	107,307	101,068	93,935	96,845	89,194
Less: capitalized overhead	(30,516)	(30,056)	(33,568)	(33,110)	(33,200)	(30,308)	(28,129)	(25,257)	(26,510)	(25,715)
Capitalization Rate	26%	28%	31%	31%	31%	28%	28%	27%	27%	29%
Total operating expenses	87,155	76,118	75,246	74,931	75,125	76,999	72,939	68,678	70,335	63,479
Net revenues	182,870	173,275	163,845	153,808	158,354	132,983	135,799	128,833	98,094	81,884
Aggregate debt service:										
Current maturities of long-term debt	31,825	29,415	28,525	27,035	25,740	24,840	23,785	23,105	21,255	18,190
Interest expense	86,818	83,404	80,613	92,616	89,243	78,954	69,949	72,776	66,918	70,548
Less: capitalized interest expense	(21,051)	(20,511)	(19,103)	(26,358)	(26,384)	(25,195)	(13,910)	-	(10,530)	(14,140)
Aggregate net debt service	$ 97,592	$ 92,308	$ 90,035	$ 93,293	$ 88,599	$ 78,599	$ 79,824	$ 95,881	$ 77,643	$ 74,598
Debt service coverage ratio[2]	187%	188%	182%	165%	179%	169%	170%	134%	126%	110%

[1]Excludes GASB 68 pension expense

[2]Excludes GASB 68 pension expense

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Current Assets:										
Unrestricted cash and cash equivalents	$ 69,481	$ 63,013	$ 84,780	$ 66,376	$ 12,040	$ 34,508	$ 24,700	$ 22,552	$ 10,524	$ 1,912
Unrestricted investments	100	100	100	100	100	100	100	7,733	14,379	24,935
Restricted cash and cash equivalents	5,379	16,342	27,886	62,249	227,327	112,559	58,923	35,988	105,299	3,133
Restricted investments	14,999	-	-	90,574	94,639	294,868	394,880	61,303	27,202	73,801
Accounts receivable	26,696	23,787	21,809	18,465	16,666	17,789	15,779	18,065	16,732	15,398
Inventories	4,210	3,981	3,808	3,579	3,484	3,435	3,110	3,027	3,020	3,091
Prepaid expenses and other current assets	3,184	2,880	2,636	2,110	1,862	2,841	2,513	1,965	2,020	1,181
Total current assets	**124,049**	**110,103**	**141,019**	**243,453**	**356,118**	**466,100**	**500,005**	**150,633**	**179,176**	**123,451**
Plant, Lines and Other facilities:										
Completed projects	3,155,696	2,777,788	2,753,762	2,702,448	2,560,403	2,498,355	2,445,755	2,314,406	2,281,413	2,149,779
Less: Accumulated depreciation	(1,070,108)	(1,008,503)	(946,427)	(884,199)	(825,205)	(768,423)	(734,552)	(680,380)	(628,296)	(578,643)
	2,085,588	1,769,285	1,807,335	1,818,249	1,735,198	1,729,932	1,711,203	1,634,026	1,653,117	1,571,136
Construction in progress	487,674	623,181	463,167	371,816	370,350	272,850	140,134	182,711	136,695	193,420
Net plant, lines and other facilities	2,573,262	2,392,466	2,270,502	2,190,065	2,105,548	2,002,782	1,851,337	1,816,737	1,789,812	1,764,556
Other Non-current assets	178,762	169,587	167,537	36,262	35,876	36,611	35,945	99,623	59,039	28,749
Total non-current assets	**2,752,024**	**2,562,053**	**2,438,039**	**2,226,327**	**2,141,424**	**2,039,393**	**1,887,282**	**1,916,360**	**1,848,851**	**1,793,305**
Total assets	**2,876,073**	**2,672,156**	**2,579,058**	**2,469,780**	**2,497,542**	**2,505,493**	**2,387,287**	**2,066,993**	**2,028,027**	**1,916,756**
Deferred outflow of resources	23,708	20,407	22,862	13,511	15,176	16,842	18,507	14,743	16,020	19,859
Total assets and deferred outflows	**$ 2,899,781**	**$ 2,692,563**	**$ 2,600,721**	**$ 2,483,291**	**$ 2,512,718**	**$ 2,522,335**	**$ 2,405,794**	**$ 2,081,736**	**$ 2,044,047**	**$ 1,936,615**

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Liabilities:										
Current liabilities (payable from current assets):										
Accounts payable and accrued expenses	$ 17,420	$ 14,936	$ 13,653	$ 12,693	$ 16,470	$ 15,732	$ 11,141	$ 11,035	$ 10,548	$ 16,639
Total current liabilities (payable from current assets)	17,420	14,936	13,653	12,693	16,470	15,732	11,141	11,035	10,548	16,639
Current liabilities (payable from restricted assets):										
Accounts payable and accrued expenses	33,271	30,607	14,712	16,168	12,656	15,105	13,692	7,735	5,250	4,239
Accrued interest	17,533	13,036	12,834	12,458	13,959	12,360	14,701	8,143	8,597	10,824
Current maturities of bonds payable	31,825	29,415	28,525	27,035	25,740	24,840	23,785	23,105	21,255	18,190
Refundable Deposits	2,557	1,639	1,568	1,137	1,013	1,341	1,622	3,478	4,209	-
Total current liabilities (payable from restricted assets)	85,186	74,697	57,639	56,798	53,368	53,646	53,800	42,461	39,311	33,253
Non-current liabilities:										
Bonds payable	1,722,745	1,583,390	1,549,700	1,478,225	1,536,770	1,591,670	1,302,000	1,385,185	1,421,825	1,327,095
Subordinated Debt	228,412	228,508	228,601	228,691	226,340	226,340	452,680	-	-	-
Unamortized debt premium/discount	67,462	60,797	60,263	56,764	45,841	25,646	9,562	8,912	16,685	14,312
Net Pension Liability	68,653	51,988	58,825	-	-	-	-	-	-	-
Other long-term liabilities	690	944	761	973	5,663	5,561	1,630	2,114	2,375	2,632
Total long-term debt	2,087,962	1,925,627	1,898,150	1,764,653	1,814,614	1,849,217	1,765,872	1,396,211	1,440,885	1,344,039
Total liabilities	2,190,568	2,015,260	1,969,442	1,834,144	1,884,452	1,918,595	1,830,813	1,449,707	1,490,744	1,393,931
Deferred inflow of resources	108,633	92,233	82,293	82,233	119,680	67,948	82,185	74,942	2,784	(8,690)
Net position:										
Invested in plant, lines, & other facilities, net of related debt	534,946	506,187	418,784	365,225	313,575	363,334	450,753	470,445	478,833	479,305
Restricted for payment of bond principal & interest	84,639	80,424	148,451	136,939	157,002	141,217	334,186	100,225	135,537	7,034
Unrestricted	(19,005)	(1,541)	(18,249)	64,750	38,009	31,241	(292,143)	(13,583)	(63,851)	65,035
Total net assets	600,580	585,070	548,986	566,914	508,586	535,792	492,796	557,087	550,519	551,374
Total liabilities, deferred inflows and net position	**$ 2,899,781**	**$ 2,692,563**	**$ 2,600,721**	**$ 2,483,291**	**$ 2,512,718**	**$ 2,522,335**	**$ 2,405,794**	**$ 2,081,736**	**$ 2,044,047**	**$ 1,936,615**

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Operating revenue:										
Wastewater service charges	$ 183,592	$ 173,895	$ 165,599	$ 159,791	$ 149,626	$ 145,880	$ 133,853	$ 130,661	$ 125,782	$ 96,594
Stormwater service charges	54,888	51,567	48,457	45,431	40,856	37,417	34,757	32,343	31,107	29,896
Other operating income	4,810	4,407	2,576	4,823	1,756	2,379	2,980	4,552	4,394	5,956
Total operating revenue	243,290	229,869	216,632	210,045	192,238	185,676	171,590	167,556	161,283	132,446
Operating expenses:										
Service and administrative costs	121,674	106,174	108,814	108,041	108,326	107,307	101,068	93,935	96,845	90,157
Capitalization/recovery of cost	(30,516)	(30,056)	(33,568)	(32,200)	(30,860)	(30,472)	(28,129)	(24,401)	(26,510)	(26,678)
Capitalized overhead (over) under applied	-	-	-	(910)	(2,340)	164	(2,988)	(856)	-	-
Depreciation and amortization	62,820	63,321	63,516	60,335	60,527	58,741	58,513	56,727	55,363	52,177
Total operating expenses	153,978	139,439	138,762	135,266	135,653	135,740	128,464	125,405	125,698	115,656
Income (loss) from operations	89,312	90,430	77,870	74,779	56,585	49,936	43,126	42,151	35,585	16,790
Non-operating revenue (expense):										
Gain (loss) on disposal of assets	614	-	-	45	(19)	194	-	(64)	(122)	-
Investment Income	17,278	17,623	20,330	16,301	40,687	33,700	36,045	25,568	4,895	4,670
Interest expense - bonds	(86,818)	(83,404)	(80,613)	(92,616)	(89,243)	(78,954)	(69,949)	(69,893)	(56,388)	(56,408)
Interest expense - swaps	(9,514)	(9,737)	(9,733)	(10,200)	(11,235)	(11,627)	(8,815)	(2,883)	-	-
Interest expense - other	1,501	1,296	115	241	437	(1,833)	(3,723)	-	-	-
Capitalized Interest	21,051	20,511	19,103	26,358	26,384	25,195	13,910	-	-	-
Decrease upon hedge termination	-	-	-	-	-	-	(58,556)	-	-	-
Change in fair values - swaps	(22,951)	(5,240)	(1,222)	36,286	(52,897)	22,638	(19,889)	-	-	-
Total non-operating revenue (expenses), net	(78,839)	(58,951)	(52,020)	(23,585)	(85,886)	(10,687)	(110,977)	(47,272)	(51,615)	(51,738)
Net income / (loss) before contributions	10,473	31,479	25,850	51,194	(29,301)	39,249	(67,851)	(5,121)	(16,030)	(34,948)
Contributions										
Property owner assessments	-	-	-	-	-	334	(545)	2,239	164	7,634
All other	5,037	4,605	8,103	7,134	2,095	3,413	4,105	9,450	15,011	9,225
Increase (decrease) in net position	15,510	36,084	33,953	58,328	(27,206)	42,996	(64,291)	6,568	(855)	(18,089)
Net position, beginning of year	585,070	548,986	515,033	508,586	535,792	492,796	557,087	550,519	551,374	569,463
Net position, end of year	$ 600,580	$ 585,070	$ 548,986	$ 566,914	$ 508,586	$ 535,792	$ 492,796	$ 557,087	$ 550,519	$ 551,374

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Cash flows from operating activities:										
Cash received from customers	$ 240,365	$ 227,976	$ 213,215	$ 207,905	$ 193,446	$ 182,976	$ 171,641	$ 166,123	$ 159,539	$ 134,160
Cash paid to suppliers and employees	(85,202)	(75,258)	(73,175)	(79,926)	(76,077)	(72,566)	(72,426)	(66,297)	(72,227)	(69,536)
Net cash provided by operating activities	155,163	152,718	140,040	127,979	117,369	110,410	99,215	99,826	87,312	64,624
Cash flows from capital and related financing activities:										
Proceeds from issuance of revenue bonds	256,750	80,000	100,000	115,790	263,360	330,000	405,770	76,275	166,125	-
Proceeds from subordinated debt	226,340	226,340	226,340	228,735	226,340	226,340	452,680	-	-	-
Capital contributed by governments, property owners & developers	5,037	4,605	8,103	7,134	2,095	3,747	3,560	11,689	15,174	16,861
Build America Bond Interest Income	10,332	10,096	10,096	10,986	10,986	7,978	2,260	-	-	-
Assessments receivable	1,740	2,050	1,695	1,833	1,930	1,676	2,998	557	2,703	(645)
Interest income - assessments	426	340	687	731	852	994	1,588	1,471	1,405	1,670
Principal paid on revenue bonds	(114,985)	(45,420)	(27,035)	(173,040)	(317,360)	(39,275)	(488,275)	(95,045)	(84,350)	(17,250)
Interest paid on revenue bonds	(89,169)	(87,813)	(91,719)	(98,944)	(94,240)	(86,191)	(70,192)	(69,063)	(69,145)	(70,180)
Acquisition and construction of capital assets	(211,910)	(147,842)	(121,237)	(113,144)	(119,988)	(167,816)	(86,590)	(75,970)	(80,614)	(65,702)
Acquisition of non-operating property	(254)	(247)	(211)	(223)	(213)	(221)	(484)	(261)	(257)	(258)
Principal paid on subordinated debt	(226,436)	(226,433)	(226,430)	(226,384)	(226,340)	(452,680)	-	-	-	-
Net cash (used in) provided from capital and related financing activities	(142,129)	(184,324)	(119,711)	(246,526)	(252,578)	(175,448)	223,315	(150,347)	(48,959)	(135,504)
Cash flows from investing activities:										
Restricted Investments	(15,047)	1,052	(30,642)	4,064	200,229	100,012	(333,577)	(34,101)	45,656	65,108
Unrestricted Investments		-	-	-	-	-	7,633	6,646	10,555	-
Income received on investments	17,652	13,974	15,708	13,941	38,515	40,097	37,329	24,859	16,214	7,642
Interest expense - swap agreements	(9,514)	(9,737)	(9,733)	(10,200)	(11,235)	(11,627)	(8,832)	(4,166)	-	-
Net cash (used in) provided from investing activities	(6,909)	5,289	(24,667)	7,805	227,509	128,482	(297,447)	(6,762)	72,425	72,750
Net increase (decrease) in cash and cash equivalents	6,125	(26,317)	(4,338)	(110,742)	92,300	63,444	25,083	(57,283)	110,778	1,870
Cash and cash equivalents, beginning of year	97,970	124,287	128,625	239,367	147,067	83,623	58,540	115,823	5,045	3,176
Cash and cash equivalents, end of year	$ 104,095	$ 97,970	$ 124,287	$ 128,625	$ 239,367	$ 147,067	$ 83,623	$ 58,540	$ 115,823	$ 5,045

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Service charges:										
Wastewater service charges:										
Residential	$ 101,405	$ 96,563	$ 89,691	$ 86,409	$ 80,779	$ 78,552	$ 73,228	$ 71,159	$ 64,978	$ 48,338
Commercial	58,343	62,257	58,812	57,192	53,116	46,598	42,741	42,312	38,935	28,892
Industrial	19,878	17,605	19,738	19,536	18,063	21,498	18,948	18,216	21,324	18,431
Other - net	8,186	2,806	2,611	2,267	2,219	1,847	1,756	1,601	2,382	1,993
Free sewer to Metro Government	(4,220)	(5,336)	(5,253)	(5,613)	(4,551)	(2,615)	(2,820)	(2,627)	(1,837)	(1,060)
Total wastewater service charges	183,592	173,895	165,599	159,791	149,626	832,503	133,853	130,661	125,782	96,594
Stormwater service charges:										
Residential	20,439	20,090	18,522	17,372	15,907	14,776	13,613	12,709	12,198	11,617
Commercial	32,971	28,936	27,910	26,123	23,017	20,862	19,433	18,012	17,276	16,741
Industrial	3,219	3,030	3,112	2,956	2,575	2,351	2,189	2,064	1,988	1,930
Free drainage to Metro Government	(1,741)	(489)	(1,087)	(1,020)	(643)	(572)	(478)	(442)	(355)	(392)
Total stormwater service charges	54,888	51,567	48,457	45,431	40,856	37,417	34,757	32,343	31,107	29,896
Total service charges	238,480	225,462	214,056	205,222	190,482	869,920	168,610	163,004	156,889	126,490
Other operating income:										
Capacity charges	2,087	2,667	1,620	1,624	335	446	564	820	2,521	2,538
Connection fees	1,118	379	133	93	64	71	68	47	172	146
Regional facilities fees	16	34	-	-	-	-	-	-	-	(11)
Reserve capacity charges	-	-	-	64	-	-	11	28	37	5
Wastewater miscellaneous	1,589	1,327	823	2,984	1,299	1,804	2,279	3,599	1,606	3,220
Stormwater miscellaneous	-	-	-	58	58	58	58	58	58	58
Total other operating income	4,810	4,407	2,576	4,823	1,756	2,379	2,980	4,552	4,394	5,956
Total operating revenue	$ 243,290	$ 229,869	$ 216,632	$ 210,045	$ 192,238	$ 872,299	$ 171,590	$ 167,556	$ 161,283	$ 132,446

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Service and administrative costs:										
Labor	$ 55,229	$ 54,378	$ 57,249	$ 55,028	$ 55,010	$ 56,358	$ 52,945	$ 49,354	$ 49,431	$ 47,079
Utilities	18,256	13,817	14,563	12,821	14,555	13,853	11,879	10,818	12,989	10,976
Materials and supplies	4,183	9,706	8,151	8,990	8,972	9,043	9,031	8,742	8,707	8,197
Professional services	4,169	2,839	1,932	3,942	2,416	2,624	2,363	2,730	3,126	2,797
Maintenance and repairs	10,007	7,915	9,096	10,866	11,090	10,054	8,847	9,675	8,926	8,035
Billing and collections	4,853	4,327	4,095	4,904	4,309	4,318	4,461	3,623	5,319	2,889
Chemicals and fuel	5,697	5,297	5,143	5,907	5,714	5,702	6,099	5,687	5,148	4,825
Biosolids disposal	2,245	1,967	1,795	1,709	1,759	2,035	2,186	2,063	1,661	1,412
All other	13,960	6,520	7,238	4,369	4,901	3,694	3,638	2,817	2,800	3,947
Service and administrative costs[1]	118,599	106,766	109,262	108,536	108,726	107,681	101,449	95,509	98,107	90,157
Less: Recovery of cost										
Capitalized project cost	(30,516)	(30,056)	(33,568)	(33,110)	(33,200)	(30,472)	(28,129)	(24,401)	(26,510)	(25,715)
Revenue recoveries	(928)	(465)	(448)	(495)	(400)	(374)	(381)	(1,574)	(1,262)	(963)
Recovery of cost	(31,444)	(30,521)	(34,016)	(33,605)	(33,600)	(30,846)	(28,510)	(25,975)	(27,772)	(26,678)
Net service and administrative costs	$ 87,155	$ 76,245	$ 75,246	$ 74,931	$ 75,126	$ 76,835	$ 72,939	$ 69,534	$ 70,335	$ 63,479

[1]Excludes GASB 68 pension expense

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

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Completed projects										
Sewer lines	$ 1,379,153	$ 1,277,745	$ 1,274,180	$ 1,265,437	$ 1,179,685	$ 1,159,437	$ 1,134,637	$ 1,042,742	$ 1,022,859	$ 963,798
Wastewater treatment facilities	629,083	489,292	489,289	479,998	479,226	471,190	470,527	459,238	456,955	422,483
Stormwater drainage facilities	515,898	448,853	448,899	443,577	437,139	434,943	427,431	400,118	390,699	366,745
Pumping and lift stations	139,651	96,812	96,819	89,503	73,023	71,122	70,643	69,301	66,990	60,877
Administrative facilities	49,342	49,342	49,342	49,317	46,068	46,078	45,561	45,561	45,561	45,347
Maintenance facilities	8,504	8,037	8,037	8,037	8,037	8,037	7,827	7,827	7,833	7,313
Machinery, equipment and other	90,702	85,395	85,395	83,882	77,068	71,923	93,240	74,975	75,872	62,526
Capitalized interest	343,363	322,312	301,800	282,697	260,157	235,624	222,564	214,644	214,644	220,690
Total completed projects	3,155,696	2,777,788	2,753,761	2,702,448	2,560,403	2,498,354	2,472,430	2,314,406	2,281,413	2,149,779
Less accumulated depreciation	(1,070,108)	(1,008,503)	(946,426)	(884,199)	(825,205)	(768,423)	(734,552)	(680,380)	(628,296)	(578,643)
Total completed projects - net	2,085,588	1,769,285	1,807,335	1,818,249	1,735,198	1,729,931	1,737,878	1,634,026	1,653,117	1,571,136
Total construction in progress	487,674	623,181	463,167	371,816	370,350	272,850	140,134	182,711	136,695	193,420
Total net plant, lines and other facilities	$ 2,573,262	$ 2,392,466	$ 2,270,502	$ 2,190,065	$ 2,105,548	$ 2,002,781	$ 1,878,012	$ 1,816,737	$ 1,789,812	$ 1,764,556

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
WASTEWATER TREATMENT PLANT CAPACITY
2016

Plant	Design Capacity MGD	Avg Daily Flow MGD	Eventual Capacity MGD	Customer Base Residential	Commercial	Industrial	Total	Year Built	Treatment Process
Morris Forman	120.0	103.4	120.0	131,304	15,594	365	147,263	1958	Secondary added in 1972.
Derek R. Guthrie*	30.0	42.3	65.0	65,530	3,933	24	69,487	1986	Secondary
Jeffersontown**	4.0	3.5	-	-	-	-	-	1956	Secondary
Hite Creek	6.0	4.8	9.0	10,427	630	8	11,065	1970	Tertiary: sand filter
Cedar Creek	7.5	4.5	11.3	17,248	1,119	9	18,376	1995	Tertiary: sand filter
Floyd's Fork	6.5	2.9	9.8	8,337	378	1	8,716	2001	Tertiary: sand filter
Total treatment system	174.0	161.4	215.0	232,846	21,654	407	254,907		

* Formerly known as the West County WTP
** Jeffersontown was eliminated in December 2015
Source: MSD Engineering Department

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
GREATER LOUISVILLE, KENTUCKY / INDIANA
EMPLOYERS OF 1,000 EMPLOYEES OR MORE

Employers	2016 Rank	Employees	2015 Rank	Employees	2014 Rank	Employees	2013 Rank	Employees	2012 Rank	Employees	2011 Rank	Employees	2010 Rank	Employees	2009 Rank	Employees	2008 Rank	Employees	2007 Rank	Employees		Type of business
United Parcel Service, Inc.	1	22,080	1	22,189	1	20,931	1	20,047	1	20,117	1	20,388	1	20,125	1	20,513	1	20,560	1	20,674	P	Air cargo transport and distribution
Jefferson County, KY Public Schools	2	14,739	2	14,719	2	14,676	2	14,269	2	14,366	2	13,840	2	13,964	2	13,326	2	13,917	2	13,593	G	Primary and secondary education
Ford Motor Company	3	12,990	5	9,028	5	8,987	6	8,512	5	8,696	11	3,847	9	5,397	8	5,624	6	5,929	5	7,586	P	Vehicle manufacturing
Humana, Inc.	4	12,500	3	12,900	3	12,371	3	11,235	3	11,000	3	10,017	3	9,400	3	10,096	3	9,854	3	8,775	P	Group health insurance/HMOs
Norton Healthcare (formerly Alliant Health)	5	11,389	4	10,739	4	10,245	4	9,666	4	9,658	4	9,421	4	8,698	4	8,142	4	7,978	4	7,690	N	Hospital and health care facilities
Amazon.com	6	6,500	7	6,000	NR																P	Logistics & Customer Service
University of Louisville	7	6,375	6	6,264	7	6,161	7	6,187	6	6,273	6	5,746	5	6,352	6	6,135	7	5,866	7	5,763	G	Higher education
Louisville-Jefferson County Metro Government	8	6,095	8	5,584	8	5,654	9	5,651	8	5,689	7	5,706	7	5,765	7	5,811	8	5,639	8	5,698	G	City/County Government
General Electric Company	9	6,000	7	6,000	6	6,230	8	6,000	9	5,000	10	3,988	11	4,100	11	4,000	9	5,000	9	5,000	P	Appliance manufacturing
Kentucky One Health Inc (formerly Jewish Hosp)	9	6,000	7	6,000	9	5,602	5	8,893	7	5,898	5	5,819	6	5,782	5	6,500	5	6,203	6	6,229	N	Hospital and health care facilities
Baptist Healthcare System	10	4,995	9	5,116	11	5,339	11	4,854	11	4,219	12	3,752	12	3,889	12	3,305	12	3,089	12	3,536	N	Hospital and health care facilities
The Kroger Company	11	4,626	10	4,892	10	5,417	10	5,152	n/a	n/a											P	Grocery Retailer
Manna Inc	12	3,120	13	2,400	16	2,250	NR														P	Food service provider
Commonwealth of Kentucky	13	2,514	11	3,794	12	4,042	12	4,161	10	4,232	9	4,488	10	4,361	10	4,253	11	4,498	11	4,535	G	General purpose government
ResCare Inc	14	2,435	28	1,312	35	1,054	NR														P	Health care provider
U.S. Federal Government	15	2,406	14	2,397	15	2,252	15	2,191	12	2,676	13	2,855	13	3,575	13	2,985	13	2,853	14	2,822	G	General purpose government
Kindred Healthcare (formerly Vencor Inc.)	16	2,381	16	2,244	17	2,249	17	2,130	15	2,252	18	2,297	16	2,224	18	2,153	19	2,079	13	3,033	P	Long-term health care, facilities
Roman Catholic Archdiocese of Louisville	17	2,263	17	2,237	14	2,260	14	2,345	13	2,352	15	2,416	17	2,142	17	2,343	15	2,351	17	2,348	N	Religious, educational, social services
LG&E and KU Energy (formerly EON)	18	2,211	18	1,993	18	2,178	16	2,131	16	2,066	19	1,976	19	1,976	20	1,902					P	Gas & Electric Utility
Papa John's International	19	2,088	30	1,279	25	1,503	35	1,143	NR	918											P	Quick service restaurant
Floyd Memorial Hospital & Health Services	20	1,950	20	1,756	19	1,769	19	1,711	20	1,612	24	1,546	29	1,473	32	1,338	33	1,316	30	1,409	P	Hospital and health services provider
Robley Rex VA Medical Center	21	1,900	19	1,800	20	1,703	18	1,799	18	1,728	22	1,671	24	1,596							N	Hospital and health care facilities
Bullitt County Public Schools	22	1,739	21	1,671	22	1,633	21	1,629	n/a	n/a											G	Primary and secondary education
U.S. Postal Service	23	1,659	12	2,401	13	2,546	13	2,509	n/a	n/a	14	2,653	18	1,991	14	2,626	14	2,651	15	2,653	G	Mail distribution
Oldham County Public Schools	24	1,604	15	2,300	23	1,576	22	1,602	19	1,690	21	1,689	28	1,500	25	1,568	25	1,519	28	1,448	G	Primary and secondary education
New Albany - Floyd County Schools	25	1,600	22	1,622	21	1,648	20	1,640	n/a	n/a											G	Primary and secondary education
PNC Bank	26	1,500	23	1,569	NR																P	Financial Services
Publishers Printing Company	27	1,400	25	1,413	28	1,432	24	1,516	24	1,450	27	1,367	27	1,500	23	1,600	20	1,860	21	1,689	P	Trade, professional, special printing
Yum! Brands Inc. (formerly Tricon)	28	1,343	32	1,226	30	1,270	23	1,544	22	1,558	23	1,640	21	1,757	19	2,076	18	2,243	18	2,219	P	Food service provider
Anthem, Inc.	29	1,300	26	1,350	32	1,139	37	1,100	34	1,122	35	1,150	36	1,276	29	1,358	31	1,381	29	1,438	P	Health Insurance sales and services
Brown-Forman Corp.	29	1,300	31	1,266	31	1,256	32	1,244	31	1,196	34	1,184	37	1,240	37	1,081	35	1,256	34	1,317	P	Distilled spirits manufacturing
Horseshoe Southern IN (formerly Caesars')	30	1,252	29	1,303	29	1,404	26	1,418	25	1,437	31	1,244	26	1,540	22	1,697	21	1,858	19	1,895	P	Gaming and entertainment resort
Greater Clark County, IN School Corp.	31	1,247	24	1,447	24	1,303	30	1,357	27	1,346	28	1,364	30	1,395	27	1,409	27	1,491	23	1,600	G	Primary and secondary education
Clark Memorial Hospital	32	1,225	33	1,225	30	1,270															P	Health care provider
Charter Communications	33	1,200	35	1,131	34	1,200															P	Call Center
Seven Counties Services	34	1,165	34	1,168	33	1,129	36	1,111	30	1,215	32	1,202	40	1,187	36	1,118	40	1,110	39	1,100	N	Health care provider
Al J Schneider Co	35	1,047	37	1,000	36	1,050	NR														P	Hotel / Restaurants
Securitas Security Services USA Inc.	NR		27	1,328	26	1,476	25	1,476	21	1,598	33	1,191	41	1,150	35	1,150					P	Security Services
American Commercial Lines	NR		36	1,100	NR																P	Marine Transportation Service
Total employees		158,138		155,163		144,205		136,223		121,364		114,457		115,355		114,109		112,501		114,050		

P=for-profit organization   N=not-for-profit organization   G=governmental organization
Source: Business First of Louisville, KY

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
LOUISVILLE/JEFFERSON COUNTY PRINCIPAL EMPLOYERS

Employer	Employees	2016 Rank	Percentage of Total Employment
United Parcel Service, Inc.	22,080	1	3.36%
Jefferson County, KY Public Schools	14,739	2	2.24%
Ford Motor Company	12,990	3	1.98%
Humana, Inc.	12,500	4	1.90%
Norton Healthcare (formerly Alliant Health)	11,389	5	1.73%
Amazon.com	6,500	6	0.99%
University of Louisville	6,375	7	0.97%
Louisville-Jefferson County Metro Government	6,095	8	0.93%
General Electric Company	6,000	9	0.91%
Kentucky One Health Inc (formerly Jewish Hosp)	6,000	9	0.91%
Baptist Healthcare System	4,995	10	0.76%
Total	109,663		16.68%
Total Employment (MSA) Louisville, KY-IN	657,300		

Employer	Employees	2007 Rank	Percentage of Total Employment
United Parcel Service, Inc.	20,674	1	3.36%
Jefferson County, KY Public Schools	13,593	2	2.21%
Humana, Inc.	8,775	3	1.43%
Norton Healthcare (formerly Alliant Health)	7,690	4	1.25%
Ford Motor Company	7,586	5	1.23%
Kentucky One Health Inc (formerly Jewish Hosp)	6,229	6	1.01%
University of Louisville	5,763	7	0.94%
Louisville-Jefferson County Metro Government	5,698	8	0.93%
General Electric Company	5,000	9	0.81%
Commonwealth of Kentucky	4,535	10	0.74%
	85,543		13.90%
Total Employment (MSA) Louisville, KY-IN	615,500		

Source: U.S. Census Bureau (census.gov)
Source: Workforce Kentucky Website (www.workforcekentucky.ky.gov)

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT

ROLE OF OUTSTANDING DEBT AND MISCELLANEOUS DEMOGRAPHIC INFORMATION

Fiscal Year	Revenue Bond	Population	Personal Income	Percentage of Personal Income	Unemployment Rate	# of MSD Employees	# of MSD Service Connections	Miles of Sewer Line
2007	$ 1,345,285	723,040	$ 29,594,360	4.55%	5.1%	614	224,654	3,133
2008	$ 1,443,080	730,194	$ 30,196,557	4.78%	6.4%	625	226,430	3,200
2009	$ 1,408,290	736,705	$ 29,191,601	4.82%	10.4%	633	226,711	3,197
2010	$ 1,325,785	742,324	$ 29,921,911	4.43%	9.8%	651	228,580	3,207
2011	$ 1,616,510	746,372	$ 31,154,544	5.19%	9.9%	655	230,240	3,200
2012	$ 1,562,510	750,828	$ 32,592,092	4.79%	8.4%	666	235,136	3,232
2013	$ 1,505,260	756,832	$ 33,314,513	4.52%	8.2%	649	239,334	3,240
2014	$ 1,578,225	760,026	$ 34,609,792	4.56%	6.4%	606	240,174	3,263
2015	$ 1,612,805	763,623	N/A	N/A	4.9%	591	253,462	3,288
2016	$ 1,754,570	N/A	N/A	N/A	4.6%	617	280,063	3,293

Source: U.S. Census Bureau (census.gov)
Source: Workforce Kentucky Website (www.workforcekentucky.ky.gov)
Source: Bureau of Economic Analysis website (www.bea.gov)

LOUISVILLE AND JEFFERSON COUNTY METROPOLITAN SEWER DISTRICT
TOP 10 WASTEWATER AND STORMWATER CUSTOMERS

Rank	Customer Name		FY '16 Wastewater Billed	Percent Total Wastewater Revenue	Customer Name		FY '15 Wastewater Billed	Percent Total Wastewater Revenue
1	Lubrizol Advanced Material	$	2,619,739	1.43%	Lubrizol Advanced Material**	$	2,403,315	1.38%
2	Heaven Hill Distilleries	$	2,238,317	1.22%	Early Times Distillery	$	1,993,992	1.15%
3	Ford Motor Co	$	1,437,109	0.78%	Swift & Company	$	1,671,739	0.96%
4	Early Times Distillery	$	1,280,739	0.70%	Heaven Hill Distilleries	$	1,479,429	0.85%
5	General Electric	$	1,126,387	0.61%	Ford Motor Co.	$	1,448,638	0.83%
6	Swift Pork Co	$	921,314	0.50%	Louisville Metro Housing Authority	$	1,297,997	0.75%
7	Unites Parcel Service	$	646,401	0.35%	UPS Air District	$	1,108,602	0.64%
8	Rohm & Haas	$	550,815	0.30%	Sunopta Ingredients Group	$	957,081	0.55%
9	Louisville Metro Housing Auth	$	513,223	0.28%	General Electric	$	824,136	0.47%
10	Parallel Products	$	499,133	0.27%	BYK Additives Inc	$	444,961	0.26%
	Total	**$**	**9,213,439**	**5.02%**	**Total**	**$**	**13,629,890**	**7.84%**
	Total Revenue:	$	183,592,113		Total FY '15 Wastewater Revenue:	$	173,895,000	

Rank	Customer Name		FY '16 Stormwater Billed	Percent Total Stormwater Revenue	Customer Name		FY '15 Stormwater Billed	Percent Total Stormwater Revenue
1	Regional Airport Auth	$	1,282,627	2.34%	Regional Airport Authority	$	1,152,439	2.23%
2	United Parcel Service	$	571,955	1.04%	United Parcel Service	$	611,250	1.19%
3	Ford Motor Co	$	412,279	0.75%	Jeff Co Board of Education	$	498,098	0.97%
4	Lit Industrial Limited Partner	$	260,106	0.47%	Ford Motor Company	$	397,235	0.77%
5	Kentucky State Fair	$	221,565	0.40%	KY State Fair Board	$	248,975	0.48%
6	Seaboard System	$	220,606	0.40%	Churchill Downs	$	226,679	0.44%
7	The U of L Campus	$	199,824	0.36%	LIT Industrial Limited Partnership*	$	200,558	0.39%
8	Lou Jeff City Redev Auth	$	172,925	0.32%	U of L Belknap Campus	$	179,562	0.35%
9	UPS Supply Chain	$	163,223	0.30%	Seaboard Syst RR-00822	$	168,402	0.33%
10	Norfolk Southern	$	145,622	0.27%	Lou/Jeff Cty Redev Auth	$	165,284	0.32%
	Total	**$**	**3,650,733**	**6.65%**	**Total**	**$**	**3,848,482**	**7.46%**
	Total Revenue:	$	54,888,331		Total FY '15 Stormwater Revenue:	$	51,567,000	

* LIT Industrial Limited was formerly known as Trammell Crow Co.
**Lubrizol Advanced Material was formerly known as Oxy Vinyls

msd
Safe, clean waterways

700 West Liberty Street
Louisville, KY 40203-1911
LouisvilleMSD.org
24/7 Customer Relations
502.587.0603

A publication of MSD Finance Department.

APPENDIX C

UNAUDITED INTERIM FINANCIAL STATEMENTS FOR THE FISCAL YEAR ENDED JUNE 30, 2017

Statement of Revenues, Expense and Changes in Net Position

	2017	2016
Sewer Charges		
Residential	$ 108,809,225	$ 101,405,158
Commercial	61,859,824	58,343,073
Industrial	21,218,158	19,878,343
Other	6,852,721	8,185,898
Free Sewer Charges	(3,774,881)	(4,220,359)
Total Sewer Charges	194,965,047	183,592,113
Drainage Charges	58,978,108	54,888,331
Total Service Charges	253,943,156	238,480,444
Other Operating Income	5,691,930	4,809,913
Total Operating Revenues	$ 259,635,086	$ 243,290,357
Operating Expenses		
Salaries & Wages	$ 41,386,010	$ 40,806,621
Labor Related Overhead	17,188,985	18,425,506
Utilities	14,290,545	18,256,027
Materials & Supplies	7,961,741	4,182,841
Contractual Services	25,092,547	28,375,609
Chemicals	5,298,296	4,371,507
Fuel	1,077,070	1,325,816
Insurance Premiums & Claims	1,668,547	1,315,922
Bad Debt	3,494,901	2,602,991
Other Operating Expense	1,440,055	2,939,132
Mapping & Insurance Recovery	(1,132,924)	(928,097)
Capitalized Overhead	(30,889,992)	(30,515,588)
Capital Expenses (over)/under applied	-	-
Total Service and Administrative Costs	86,875,781	91,158,287
Depreciation	75,816,396	61,539,313
Amortization	1,294,089	1,280,405
Total Depreciation/Amortization	77,110,484	62,819,717
Total Operating Expenses	$ 163,986,265	$ 153,978,004
Net Operating Income	$ 95,648,821	$ 89,312,353
Non-Operating Revenue (Expenses)		
Gain/Loss Disposal of Assets	-	-
Investment Income	$ 14,273,456	$ 17,891,629
Interest Expense	(77,630,137)	(73,779,827)
Total Non-Operating Revenue (Expenses)	(63,356,681)	(55,888,198)
Contributions	7,868,414	5,036,851
Change in Net Position before change in Swaps	40,160,554	38,461,005
Change in Fair Value of Swaps	26,072,101	(22,951,372)
Change in Net Position after change in Swaps	$ 66,232,655	$ 15,509,633

Source: Louisville/Jefferson County Metropolitan Sewer District

Statement of Net Position

	2017	2016
Current Assets		
Unrestricted Cash & Cash Equivalents	$ 52,502,210	$ 69,581,022
Sewer & Drainage Receivable	17,432,188	17,803,632
Assessment Warrants Receivable	485,307	880,926
Miscellaneous Receivables	4,616,298	7,869,206
Inventories	4,183,938	4,210,049
Prepaid Expenses	1,810,952	1,990,868
Restricted Funds	166,363,840	169,825,008
Accrued Interest Receivable	1,066,274	1,193,228
Total Current Assets	248,461,005	273,353,938
Non-Current Assets		
Utility Plant in Service	3,302,749,396	3,155,695,912
Accumulated Depreciation	(1,145,989,846)	(1,070,108,119)
Construction in Progress	577,575,333	487,674,069
Net Fixed Assets	2,734,334,882	2,573,261,862
Non-Current Receivables	32,767,775	29,456,445
Total Assets	3,015,563,662	2,876,072,245
Total Deferred Outflow of Resources	30,991,553	23,707,870
Total Assets & Deferred Outflow of Resources	$ 3,046,555,215	$ 2,899,780,115
Current Liabilities		
Miscellaneous Accounts Payable	$ 8,503,038	$ 11,114,899
Accounts Payable - Construction	14,490,073	19,021,260
Contract Retainage	14,476,113	14,249,365
Accrued Interest Payable	15,934,686	17,532,814
Current Maturities of Bonds Payable	33,655,000	31,825,000
Bond Anticipation Notes	228,313,119	228,411,815
Deposits Payable	2,045,164	2,557,426
Accrued Salaries & Wages	960,764	2,750,705
Accrued Workers' Comp Insurance	1,700,642	1,270,001
Employee Comp Absences Payable	2,979,851	2,284,836
Total Current Liabilities	323,058,452	331,018,121
Non-Current Liabilities		
Long-Term Debt Payable	1,831,605,000	1,722,745,000
Unamortized Debt Premium	74,328,040	67,462,158
Other Long-Term Liabilities	69,084,376	69,342,867
Total Non-Current Liabilities	1,975,017,416	1,859,550,025
Total Liabilities	2,298,075,866	2,190,568,146
Total Deferred Inflow of Resources	81,667,613	108,632,890
Total Assets & Deferred Outflow of Resources	$ 2,379,743,480	$ 2,299,201,035
Net Position	$ 666,811,735	$ 600,579,080

Source: Louisville/Jefferson County Metropolitan Sewer District

APPENDIX D

FORM OF BOND COUNSEL OPINION

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[Date of Delivery]

Louisville and Jefferson County Metropolitan Sewer District
Louisville, Kentucky

Ladies and Gentlemen:

We have acted as bond counsel in connection with the authorization, sale and issuance by Louisville and Jefferson County Metropolitan Sewer District (the "District"), a public body corporate and politic and a political subdivision of the Commonwealth of Kentucky, acting by and through its Board as its duly authorized governing body, of $226,340,000 principal amount of Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2017 (the "Series 2017 Notes").

The Series 2017 Notes have been authorized and issued pursuant to (i) Chapters 58, 65 and 76 of the Kentucky Revised Statutes (the "Act"), (ii) the Subordinated Debt Resolution adopted by the District on April 26, 2010, as supplemented by a Subordinate Debt Sale Resolution adopted by the District on August 28, 2017 (collectively, the "Note Resolution") and (iii) the Sewer and Drainage System Revenue Bond Resolution adopted by the District on December 7, 1992, as amended March 4, 1993, June 30, 1993, December 14, 1994, January 25, 1996, and February 24, 2003 (collectively, the "Bond Resolution"),. Pursuant to the Note Resolution, the District has authorized the issuance of the Series 2017 Notes for the purpose of (i) paying the costs of issuing the Series 2017 Notes; and (ii) refunding and retiring the District's outstanding Sewer and Drainage System Subordinated Bond Anticipation Notes, Series 2016 (the "Prior Notes"). Capitalized terms utilized herein and not defined have the meanings ascribed to such terms in the Bond Resolution and Note Resolution

We have examined such portions of the Constitution and Statutes of the United States, the Constitution and Statutes of the Commonwealth of Kentucky, and such applicable court decisions, regulations, rulings and opinions as we have deemed necessary or relevant for the purposes of the opinions set forth below.

We have also examined records, and the transcript of proceedings relating to the authorization and issuance of the Series 2017 Notes, including a specimen Series 2017 Note, and other relevant matters. We have also made such investigation as we have deemed necessary for the purposes of such opinions, and relied upon certificates of officials of the District as to certain factual matters. Based upon the foregoing, we advise you that in our opinion under existing law:

1. The District is a public body corporate and politic and a political subdivision of the Commonwealth of Kentucky, validly existing under the provisions of the Constitution and laws of the Commonwealth of Kentucky, including the Act, with right and power under the Act to adopt the Bond Resolution and Supplemental Bond Resolution.

2. The Bond Resolution and Note Resolution have been duly and lawfully adopted by the Board of the District, and constitute valid and binding special limited obligations of the District enforceable in accordance with their respective terms.

3. The Series 2017 Notes have been duly authorized, executed and issued by the District in accordance with the Constitution and Statutes of the Commonwealth, including the Act, and in accordance with the Bond Resolution and Note Bond Resolution, and constitute valid and binding special obligations of the District, payable as to principal, interest, and premium, if any, solely from the property pledged therefore in the Note Resolution (the "Pledged Property"). The pledge of the Pledged Property securing the Series 2017 Notes is inferior and subordinate to the pledge thereof to the Prior Bonds (as defined in the Bond Resolution).

4. The Series 2017 Notes are special and limited revenue obligations of the District and do not constitute a debt, liability or general obligation of the District, the Commonwealth of Kentucky or any political subdivision or taxing authority thereof, including the Louisville/Jefferson County Metro Government and the County of Jefferson, Kentucky, within the meaning of the Constitution and laws of the Commonwealth of Kentucky. The District has no taxing power.

5. The interest on the Series 2017 Notes is not subject to taxation by the Commonwealth of Kentucky, and the Series 2017 Notes are not subject to ad valorem taxation by the Commonwealth of Kentucky or by any political subdivision thereof.

6. Under the laws, regulations, rulings and judicial decisions in effect as of the date hereof, interest on the Series 2017 Notes is excludible from gross income for Federal income tax purposes, pursuant to the Internal Revenue Code of 1986, as amended (the "Code"). Furthermore, interest on the Series 2017 Notes will not be treated as a specific item of tax preference, under Section 57(a)(5) of the Code, in computing the alternative minimum tax for individuals and corporations, nor be includable in adjusted current earnings, under Section 56(c) of the Code, in computing the alternative minimum tax for corporations. In rendering the opinions in this paragraph, we have assumed continuing compliance with certain covenants designed to meet the requirements of Section 103 of the Code. We express no other opinion as to the federal or state tax consequences of purchasing, holding or disposing of the Series 2017 Notes.

7. The District has **not** designated the Series 2017 Notes as "qualified tax-exempt obligations" with respect to investments by certain financial institutions under Section 265 of the Code.

In rendering this opinion, we have relied upon covenants and certifications of facts, estimates and expectations made by officials of the District and others contained in the transcript which we have not independently verified. It is to be understood that the enforceability of the Bond Resolution, the Supplemental Bond Resolution, the Series 2017 Notes and agreements relating thereto may be limited by bankruptcy, insolvency, reorganization, moratorium, insolvency, or other similar laws relating to or affecting the enforcement of creditors' rights or by general equitable principles.

Without having undertaken to determine independently or to verify the accuracy or completeness of the statements contained in the Official Statement issued with respect to the Series 2017 Notes, and expressing no opinion as to the financial statements or any other financial or statistical data contained therein, nothing has come to our attention in the course of our professional engagement as Bond Counsel which would lead us to believe that the Official Statement contains any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements contained therein, in the light of the circumstances under which they were made, not misleading.

Very truly yours,

DINSMORE & SHOHL LLP

APPENDIX E

BOOK-ENTRY ONLY SYSTEM

BOOK-ENTRY ONLY SYSTEM

The Depository Trust Company ("DTC"), New York, NY, will act as securities depository for the Series 2017 Notes. The Series 2017 Notes will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Series 2017 Note certificate will be issued for each maturity date of the Series 2017 Notes, each in the aggregate principal amount of such maturity, and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of Series 2017 Notes under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2017 Notes on DTC's records. The ownership interest of each actual purchaser of each Series 2017 Note ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2017 Notes are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Series 2017 Notes, except in the event that use of the book-entry system for the Series 2017 Notes is discontinued.

To facilitate subsequent transfers, all Series 2017 Notes deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Series 2017 Notes with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2017 Notes; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2017 Notes are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial

Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Series 2017 Notes may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2017 Notes, such as redemptions, tenders, defaults, and proposed amendments to the Series 2017 Note documents. For example, Beneficial Owners of Series 2017 Notes may wish to ascertain that the nominee holding the Series 2017 Notes for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series 2017 Notes within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Series 2017 Notes unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the District as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts Series 2017 Notes are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds, distributions, and dividend payments on the Series 2017 Notes will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the District or Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Agent, or the District, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the District or Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to the Series 2017 Notes at any time by giving reasonable notice to the District or Agent. Under such circumstances, in the event that a successor depository is not obtained, Series 2017 Note certificates are required to be printed and delivered.

The District may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Series 2017 Note certificates will be printed and delivered to DTC.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the District believes to be reliable, but the District takes no responsibility for the accuracy thereof.

APPENDIX F

CONSULTING ENGINEER'S REPORT

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FINAL REPORT

Series 2017 Sewer and Drainage Revenue Bonds Engineer's Report

Prepared for

Louisville & Jefferson County Metropolitan Sewer District

June 21, 2017
(Revised July 21, 2017)

June 21, 2017
(Revised July 21, 2017)

Mr. Chad Collier
Chief Financial Officer
Louisville and Jefferson County MSD
700 West Liberty Street
Louisville, KY 40203-1911

Dear Mr. Collier:

Subject: Louisville & Jefferson County Metropolitan Sewer District Sewer and Drainage Revenue Bonds Series 2017 Engineer's Report

CH2M HILL Engineers, Inc. (CH2M) is pleased to submit this Bonds Engineer's Report to be included in the Official Statement prepared by the Louisville & Jefferson County Metropolitan Sewer District (MSD) in connection with the issuance of approximately $216 million in aggregate principal amount of Sewer and Drainage System Revenue Bonds, Series 2017 (the "Series 2017 Bonds"). The Series 2017 Bonds include Series 2017A ($175 million), which will fund wastewater and drainage infrastructure improvements, and Series 2017B ($40.525 million), which will refund MSD's outstanding 2007A bonds. The purpose of this report is to present the findings of an evaluation of MSD's existing sewer and drainage system and to present financial factors associated with the sale of the Series 2017 Bonds. This report is based on an analysis of MSD's records, reports, and Capital Improvement Program (CIP), as well as discussions with MSD personnel. Unless otherwise noted, or unless the context provides otherwise, capitalized terms used in this report shall have the meaning assigned to such terms in the Official Statement.

The evaluation of MSD's sewer and drainage system includes a discussion of the system's history and organization; service area; wastewater collection, transmission, and treatment system; drainage collection, transmission, and treatment system. This report also includes a review of historical operating results and presents projected outcomes for Fiscal Year (FY) 2017 through FY 2022, with the projected debt service. Projected debt service includes all of the outstanding bonds, including estimated debt service for the Series 2017 Bonds.

MSD's CIP consists of improvements that have been identified in several plans that have been developed for MSD, including most recently the Critical Repair and Reinvestment Plan (formerly called the 20-Year Comprehensive Facility Plan) currently being finalized following an extensive public review and outreach program conducted in 2017. These plans include improvements that are needed to comply with regulatory requirements, such as the Federal Consent Decree, Kentucky Pollution Discharge Elimination System (KPDES), and Municipal Separate Storm Sewer (MS4) Program, as well as other improvements that are needed for system expansion, redundancy, resiliency, and improved efficiency.

CH2M has been engaged by MSD on numerous wastewater and drainage engineering studies and improvements, as well as financial and rate-related studies for more than 35 years. CH2M led the team that developed the Integrated Overflow Abatement Plan in response to MSD's Federal Consent Decree. CH2M is also currently serving as MSD's Consent Decree Program Consultant, and the Project Manager for development of MSD's Critical Repair and Reinvestment Plan. Because of these earlier studies and ongoing program management responsibilities, CH2M has detailed knowledge of and experience with MSD's wastewater collection, transmission, and treatment system (the "Sewer System"); the drainage collection, transmission, and storage system (the "Drainage System"); and collectively the Sewer and Drainage System (the "System"); System operations, finances, and rates, and MSD's operating procedures.

Based on CH2M's evaluation and analysis and the assumptions stated in this Bond Engineer's Report, the following findings are noted:

1. MSD's Sewer System and Drainage System are well-maintained, well-managed, and generally in good operating condition. While the System currently operates well, it is aging and requires periodic renewal, rehabilitation, and expansion to ensure continued reliable service for their intended purpose. MSD's Critical Repair and Reinvestment Plan and current 5-year CIP include improvements to address these needs. MSD is in the process of inspecting the entire sewer system, and defects identified through that process are being addressed. Effective planning policies provide for the inspection, repair, improvement, and replacement of facilities and have enabled MSD to consistently meet state and federal regulations.

2. MSD provides drainage and flood protection for all of Jefferson County, except for four communities that operate their own drainage system, but are co-permittees under the MS4 program that MSD administers. Drainage and flood protection service is provided essentially to all of the developed area in the Louisville metro area.

3. MSD's drainage system consists of two components: an interior drainage system that collects and conveys stormwater across the County to the Ohio River; and the Ohio River Flood Protection System that holds back rising waters in the Ohio River during flood events, and to pump drainage from the interior of the County into the Ohio River.

4. MSD assumed responsibility for the drainage system in Jefferson County in 1987, which included a large backlog of problems and deferred maintenance. MSD has since conducted several studies and undertaken nearly $200 million in stormwater improvements to cost effectively address drainage issues. More recently, the drainage system has been dealing with an increased frequency of extreme storms and a higher percentage of impervious area as the community grows, leading to increased runoff. The Critical Repair and Reinvestment Plan has recommended changes in stormwater design and construction standards to mitigate these issues, and help manage the size and frequency of storms anticipated in the future.

5. The U.S. Army Corps of Engineers (USACE) completed a Levee Safety Evaluation in 2015 and found that the floodwalls, levees, and flood pumping stations in the Ohio River Flood Protection System met all applicable standards and was acceptable under the Federal Emergency Management Agency (FEMA) flood protection and insurance program. MSD has taken a proactive approach to improving its flood pumping stations beyond the minimums required to comply with FEMA requirements. The floodwalls and levees continue to be well-maintained, and are not expected to need expansion or to be raised, as they are already set several feet above the maximum flood elevation of record.

6. The wastewater flow projections presented herein were based on the projections that were prepared as part of the Facility Plans being prepared for both MSD and the Louisville Water Company (LWC). Population projections were prepared by the Urban Studies Institute (USI) of the University of Louisville, and were used in preparing the wastewater flow projections. Current population estimates and projections and anticipated impacts of the projected growth in population on wastewater volumes have been considered regarding the need for and timing of major facility expansions. These revised population and wastewater flow projections have also been considered in the system revenue projections.

7. The sewer system extends throughout much of the developed portions of Jefferson County, and through inter-local agreements, MSD also provides these services to portions of Oldham County and small parts of Bullitt County.

8. The sewer system, including MSD's five water quality treatment centers (WQTCs), either have the capacity to handle projected flows or will have with the planned capital improvement projects throughout the Critical Repair and Reinvestment Facility Plan forecast period (through 2035). Flows from growth areas in southeastern Jefferson County are anticipated to be treated in existing WQTCs, though consideration is being given to constructing a new WQTC in the Floyds Fork sub-basin of the Salt River.

9. MSD is consistently meeting regulatory requirements for its sewer and drainage system and is planning for regulatory requirements that MSD anticipates may be imposed on the system within the next 20 years. MSD's CIP includes improvements to address these anticipated requirements, and the financial plan presented herein incorporates plans for funding of these improvements. Note that a weather-related electrical failure at the Morris Forman WQTC caused several permit violations in 2015, but the damage has been corrected and the plant was returned to compliance quickly. Work is ongoing at the Morris Forman WQTC to completely replace an aging oxygen generation system that is limiting treatment effectiveness under some conditions. Permit violations at the Derek R. Guthrie WQTC in 2016 and 2017 were primarily caused by a delay in obtaining a revised KPDES permit reflecting the capacity of the facility after a recent expansion. MSD has been working with the Kentucky Department for Environmental Quality on the paperwork necessary to support a new permit appropriate for the expanded facilities.

10. Key staff are well-qualified and capable of managing current responsibilities. They are planning for implementation of future improvements.

11. In 2012, the Louisville Utility and Public Works Advisory Group (the "Advisory Group") was formed by the Louisville Metro Mayor, and was tasked with examining the operations of the LWC, MSD, and Louisville Metro Department of Public Works and Assets (DPW), to identify whether synergies exist between the entities that would allow for improved service or reduce costs. The Advisory Group found that there were potential savings in consolidating services of MSD and LWC. After a due diligence review conducted by both MSD and LWC, a Comprehensive Inter-Local Agreement (ILA) was developed to create coordinated teams of employees from both agencies with the capability of delivering superior customer service at lower costs than the existing two agencies combined. The ILA, as amended on August 24, 2015, is effective through June 30, 2035.

12. The financial model presented in this Bond Engineer's Report uses wastewater sales forecasts based in part on MSD's ongoing financial planning, and independent analyses by CH2M. The financial projections use historical wastewater sales results as the basis for its demand and revenue projections, adjusted for assumed rate adjustments, growth, and elasticity of demand impacts resulting from assumed rate increases. <u>Note that the list of outstanding bonds in Table 6-8 was updated on July 21, 2017, based on updated information from MSD's financial advisor. No other changes have been made to the June 21, 2017 version of this report previously issued.</u>

13. The findings herein assume that MSD will continue to adjust its sewer and drainage rates based on its past practice of increasing its wastewater and drainage rates annually to meet operating cost increases and capital needs, and as required to meet other financial needs or commitments. The future rate adjustments (FY 2019 and beyond) presented herein have been discussed with the MSD Board, but must be adopted annually by the MSD Board.

14. Under the assumptions described in this report, revenues under the projected rates presented herein will be sufficient to meet operating and other expenses, including debt service payments, bond debt service reserve requirements, and coverage requirements for FY 2017 through FY 2022 (the "Study Period"). The projected rates will also provide sufficient funds for planned capital improvement expenditures that are expected to be funded from current revenues. MSD's current sewer and drainage system rates are well within the range of those charged by many other municipalities in Kentucky, and similarly-sized cities throughout the nation.

15. The projected expenses of the sewer and drainage system, revenues to be generated by the sewer and drainage system, and the sources of funds projected to be available to fund scheduled or anticipated improvements throughout the Study Period of this Bond Engineer's Report are reasonable.

16. The financial plan presented herein provides sufficient funding for the MSD's adopted CIP in part through the issuance of bond issues in FY 2018 and in each of the subsequent fiscal years during the Study Period. These bond issues have been discussed with the MSD Board, but must be individually approved by both the MSD Board and the Louisville Metro Council.

17. A Critical Repair and Reinvestment Plan, including a comprehensive cost-of-service evaluation, is currently being prepared for MSD's Systems. CIP projections for long-term infrastructure needs have been provided to MSD as part of the Draft Critical Repair and Reinvestment Plan. The Draft Critical Repair and Reinvestment Plan was completed and released for public review and comment in January 2017. MSD conducted an extensive community outreach program between January 2017 and June 2017, to explain the benefits and costs of the long-term CIP and other operating program recommendations. This outreach program has been successful in facilitating a broad stakeholder and community dialog on the implementation approach and schedule of the proposed infrastructure improvements. MSD has presented the results of this outreach program to the MSD Board in support of a proposed 20 percent rate increase for FY 2018. The MSD Board approved this rate increase on May 22, 2017. The MSD Board-approved increase is greater than the 6.9 percent increase that the MSD Board can authorize without approval from the Louisville Metro Council. MSD is planning to present the increase for Metro Council approval. Since approval is not certain at the time of this report preparation, <u>all the revenue and cost information presented herein have been based on an assumed FY 2018 rate increase of 6.9 percent, the amount that the MSD Board can implement without needing Metro Council approval.</u> If a rate increase greater than 6.9 percent is approved by Metro

Council, it will have an immediate and positive impact on all the financial parameters presented in this report.

18. The improvements to be made to the sewer and drainage system have been or are expected to be designed in accordance with usual and customary engineering practices and involve proven technology and proven configurations of that technology.

19. In the opinion of CH2M, MSD's issuance of the Series 2017 Bonds in the aggregate principal amount of approximately $216 million for the purposes described in this Bond Engineer's Report on the MSD System, is both necessary to sustain MSD's record of regulatory compliance and customer service, and financially sound based on anticipated revenues.

Sincerely,

Gary J. Swanson, P.E.
Vice President
CH2M HILL Engineers, Inc.

Contents

Section Page

Tables

Figures

Acronyms and Abbreviations

ADF	average daily flow
Advisory Group	Louisville Utility and Public Works Adivsory Group
Agreement	1986 Inter-local Cooperation Agreement
BAB	Build America Bonds
BOD	Biochemical Oxygen Demand
CH2M	CH2M HILL Engineers, Inc.
CIP	Capital Improvement Program
CMOM	Capacity, Management, Operations and Maintenance
Commonwealth	Commonwealth of Kentucky
CRS	Community Rating System
CSO	combined sewer overflow
DPW	Louisville Metro Department of Public Works and Assets
Drainage System	drainage collection, transmission, and storage system
DRI	Drainage Response Initiative
DSCR	debt service coverage ratio
ESU	equivalent service unit
Facility Plan	20-Year Comprehensive Facility Plan
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GE	General Electric
GIS	geographic information system
I&I	infiltration and inflow
ILA	Inter-Local Agreement
IOAP	Integrated Overflow Abatement Plan
KDEP	Kentucky Department for Environmental Protection
KPDES	Kentucky Discharge Elimination System
KRS	Kentucky Revised Statutes
LOJIC	Louisville & Jefferson County Information Consortium
LWC	Louisville Water Company
MGD	million gallons per day
MS4	Municipal Separate Storm Sewer
MSD	Louisville & Jefferson County Metropolitan Sewer District
NFIP	National Flood Insurance Program
NMC	Nine Minimum Controls
O&M	operations and maintenance
PDF	peak daily flow
Series 2017 Bonds	Sewer and Drainage System Revenue Bonds, Series 2017
Sewer System	MSD’s wastewater colleciton, transmission, and treatment system
Study Period	FY 2017 through FY 2022
SWMP	Stormwater Master Plan
System	collectively the Sewer and Drainage System
TSS	Total Suspended Solids
UPS	United Parcel Service
USI	Urban Studies Institute (University of Louisville)
WQTC	water quality treatment center

SECTION 1

Introduction

1.1 Authorization and Purpose

The Louisville & Jefferson County Metropolitan Sewer District (MSD) authorized CH2M HILL Engineers, Inc. (CH2M) to prepare this Bonds Engineer's Report to analyze the feasibility of MSD issuing approximately $216 million in Sewer and Drainage System Revenue Bonds, Series 2017 (the "Series 2017 Bonds"). MSD is proposing to issue the Series 2017 Bonds to provide funds to pay the cost of issuance of the Series 2017 Bonds, make a deposit to the bond reserve account, provide funds for planned improvements to MSD's sewer and drainage system, and refund MSD's outstanding Series 2007A Sewer and Drainage System Revenue Bonds (the "Refunded 2007A Prior Bonds). The purpose of this report is to provide information pertinent to the issuance of the Series 2017 Bonds for inclusion in the Official Statement for the Series 2017 Bonds.

This Bond Engineer's Report describes the organization and management of MSD and the sewer and drainage system's respective service areas, facilities, operations, capital improvement program (CIP), and historical and projected financial performance. MSD's fiscal year (FY) 2017 is from July 1, 2016, to June 30, 2017. Historical operating results are presented for FY 2014 through FY 2016, with forecasted results for FY 2017, and projected operating results are presented for the Study Period (FY 2018 through FY 2022). Descriptions of the principal assumptions and limitations of the analysis are also included.

CH2M has been engaged by MSD on numerous wastewater and drainage engineering studies and improvements as well as financial and rate-related studies for more than 35 years. CH2M led the team that developed the Integrated Overflow Abatement Plan (IOAP) in response to MSD's Federal Consent Decree. CH2M is also currently serving as MSD's Consent Decree Program Consultant, and the Project Manager for development of MSD's Critical Repair and Reinvestment Plan (formerly referred to as the 20-Year Comprehensive Facility Plan). Because of these earlier studies and ongoing program management responsibilities, CH2M has detailed knowledge of and experience with MSD's wastewater collection, transmission, and treatment system (the "Sewer System"); the drainage collection, transmission, and storage system (the "Drainage System"), and collectively the Sewer and Drainage System (or the "System"); System operations, finances, and rates; and MSD's operating procedures.

1.2 Study Assumptions

In preparing this Bond Engineer's Report, CH2M relied on information provided by MSD and other sources. While offering no assurances with respect to this information, which has not been independently verified, CH2M believes that this information is valid for the purpose of this report. The following sources of information were used to prepare this report:

- Comprehensive annual financial reports for MSD for FY 2014 through FY 2016
- Financial reports and work papers for FY 2014 through FY 2017
- MSD's annual operating budgets for FY 2014 through FY 2018
- Integrated Overflow Abatement Plan
- Draft Critical Repair and Reinvestment Plan
- Stormwater Drainage Master Plan (1988)
- Sewer and Drainage System Revenue Bonds, Series 2016, Engineer's Report
- Financial, billing and operating data
- Discussions with MSD staff, consultants, and advisers

This report is based on the following assumptions and information:

- The population and wastewater flow projections for MSD's Wastewater System service area, and population projections for MSD's Drainage Service Area, which are based on the Urban Studies Institute (USI) of the University of Louisville projections, are reasonable for purposes of projecting the financial results of operations.
- MSD's FY 2017 revenue projections provided by MSD staff are reasonable for purposes of projecting future sewer and drainage revenues.
- Debt service information provided to MSD by its financial advisor for the Series 2017 Bonds is understood to be estimates reasonable for the purposes of this report. Existing debt service, based on data provided by MSD, is also included in projected debt service coverage included in this report.
- Historical financial and operating results are reasonable for the purposes of projecting future financial and operating results.

In preparing this Bond Engineer's Report, CH2M also made assumptions about future conditions; however, actual conditions may differ from those assumed. To the extent that future conditions differ from those assumed, results will vary from those forecasted. The principal assumptions regarding future conditions are as follows:

- The local economy will remain relatively stable, growing moderately in accordance with the projected rate of population growth (approximately 0.5 percent annually) through FY 2022.
- The forecasted annual escalation in the system's cash operating expenses during the 5-year Study Period reflects anticipated system growth, inflation, and the anticipated increase in depreciable capital assets requiring maintenance and repair. The average annual escalation in system cash operating expenses is projected to be 3 percent during the Study Period, which is higher than MSD has experienced over the past 5 years.
- Capital outlays will occur in general accordance with the schedules and cost estimates outlined in the capital improvements section of this report.
- Any future changes in management and/or administration within MSD will provide managerial skills comparable to those of the present MSD staff.
- MSD is making an investment of approximately $420 million during the 5-year Study Period to complete projects required by the IOAP prepared in response to MSD's Federal Consent Decree. In addition, MSD is planning for an additional investment of more than $51 million annually for renewal and replacement projects in wastewater, drainage, and support facilities. It is expected that one outcome of these rehabilitation projects is a reduction in infiltration and inflow (I&I) levels in MSD's sewer system. I&I levels have declined because the ambitious sewer rehabilitation program that MSD has undertaken in past periods, and I&I levels are expected to remain at or below these reduced levels.
- Wastewater discharge characteristics of future customers will be comparable to those of existing customers. Wastewater volume sales will be comparable to those observed in FY 2015 and FY 2016.
- Uncollected service billings as a percent of total sewer and drainage system service revenue billed will remain at or below historical levels.[1]
- The projected sources of funding for MSD's CIP will be available in the approximate amounts and terms assumed herein throughout the Study Period.

[1] Uncollected service billings were reported to have been approximately 1.0 percent of total sewer utility billings in FY 2015, and 1.5 percent of total drainage utility billings in 2015.

- MSD will, at a minimum, adopt the wastewater and drainage rate adjustments presented herein. Note that the rate adjustment shown for FY 2018 is less than what has been approved by the MSD Board, but represents the maximum rate increase the MSD Board can authorize without approval from the Louisville Metro Council. If a rate increase greater than that presented herein is eventually approved by the MSD Board and Louisville Metro Council, an immediate and positive impact will result in improved financial conditions. The financial analysis presented herein assumes future rate increases are projected to be within the MSD Board's authority to authorize without needing approval from Louisville Metro Council or any other elected or regulatory body.
- MSD may, in future years, request higher rate increases than those presented herein, for the purpose of accelerating the rate of implementation of the recommendations of the Critical Repair and Reinvestment Plan. Higher rates than those presented herein will require the approval of the Louisville Metro Council. If those higher rates are not approved by the Louisville Metro Council, the rate of implementation of the Critical Repair and Reinvestment Plan recommendations will not be accelerated, but will remain generally as presented herein.
- MSD will connect new customers to the sewer and drainage systems in general accordance with the projected system growth forecast herein.
- MSD will comply with its debt covenants, as set forth in the Resolutions of MSD authorizing the issuance of MSD's outstanding Sewer and Drainage System Revenue Bonds, and Proposed Series 2017 Bonds.

Note that in August 2005, MSD entered into a joint Consent Decree agreement with the federal government and the Commonwealth of Kentucky. The Consent Decree created the framework for a 19-year program to manage and mitigate combined sewer overflows (CSOs), and eliminates sanitary sewer overflows (up to a certain storm event). In 2009, the Consent Decree was to address recordkeeping and WQTC bypasses and treatment performance. For the purpose of this report the term "Consent Decree" will be used to refer to the 2009 Amended Consent Decree. If the August 2005 Consent Decree is being referred to, it will be referenced using the August 2005 date.

Metropolitan Sewer District

MSD is responsible for the operation of the sewer and drainage system serving most of Louisville Metro, which encompasses the City of Louisville and all of Jefferson County.[2] MSD is authorized by Chapter 76 of the Kentucky Revised Statutes (KRS) 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 MSD Board.

2.1 History

Beginning at or around 1850, the initial sewers in Louisville were constructed, with the initial combined storm and sanitary sewers constructed in 1860. MSD was formed in 1946 as a public body corporate and subdivision of the Commonwealth of Kentucky (the “Commonwealth”). MSD was created to operate and maintain the existing City of Louisville sewer and drainage system, and expand the system throughout Jefferson County.

In 1986, an Inter-local Cooperation Agreement (the “Agreement”) was executed between MSD, the City of Louisville, and Jefferson County to improve and enhance flood control and stormwater drainage services in the City of Louisville and Jefferson County.[3] The Agreement transferred all drainage and flood control facilities and property to the custodianship of MSD and mandated MSD to be the responsible agency for providing flood and stormwater drainage services. The Agreement supplemented, as needed, the powers MSD already possessed, pursuant to the provisions of KRS Chapter 76. MSD also has separate agreements with the third-class and some fourth-class cities in Jefferson County to provide drainage services and be charged the same rates as charged to customers in the rest of MSD’s drainage service area. These separate agreements are necessary, as KRS 76.172 does not allow MSD to uni-laterally annex into its drainage service area, cities of the fourth class or higher. (Section 156 of the Kentucky Constitution describes third class cities as having populations between 8,000 and 19,000, while fourth class cities are defined as having populations between 3,000 and 7,999.)

Under the Agreement, MSD leases the drainage facilities that were owned by the City of Louisville and Jefferson County. MSD has subsequently added many drainage facilities to the drainage system, which MSD owns. The MSD lease of the original facilities is scheduled to expire in 2036. It is expected that the lease of the original facilities will either be extended or ownership of the original facilities will be transferred to MSD, in due course of business.

2.2 MSD Board

The business, activities, and affairs of MSD are directed, managed, and controlled by an eight-member board (the ”Board”) that is appointed by the Louisville Metro Mayor, subject to the approval of the Louisville Metro Council. No more than five of the board members can belong to the same political party. Each board member is appointed for a 3-year term. Table 2-1 presents the current board members and the dates their current terms expire. Cyndi Caudill currently serves as Chairperson of the MSD Board, and Daniel Arbough, currently serves as MSD Board Vice-Chairperson.

[2] The Communities of Anchorage, Jeffersontown, Shively, and St. Matthews own and operate the drainage systems serving their communities. However, MSD continues to provide flood protection services that benefit these communities through the Ohio River Flood Protection System of floodwalls, levees, and flood pump stations. These communities are also co-permittees under the MS4 Program, which the MSD administers.

[3] The City of Louisville and Jefferson County have subsequently merged to form Louisville Metro.

Table 2-1. List of MSD Board Members

MSD Board Members	Term Expires
Cyndi Caudill (Chair)	August 31, 2017
Daniel Arbough (Vice-Chair)	June 30, 2018
Andrew Bailey	July 31, 2018
Jason Williams	February 28, 2018
Joyce Horton Mott	August 31, 2017
John Phelps	Pending
J.T. Sims	July 31, 2017
Marita Willis	June 30, 2019

2.3 Organizational Structure

MSD's staff, who are responsible for the day-to-day operations of the MSD, are organized into seven divisions:

- Executive Offices
- Legal
- Human Resources
- Information Technology
- Finance
- Engineering
- Operations

MSD currently employs approximately 620 personnel, with an additional 62.5 vacant positions that have been budgeted. More than half of these vacant positions are in the Engineering and Operations Divisions. MSD is actively pursuing filling these vacant positions.

MSD reorganized in early 2014 to better meet both MSD's strategic objectives as well as its operational requirements. The main changes under this new organizational structure were that engineering activities were placed in a single Engineering Division under the oversight of a Chief Engineer, and the Operations Division was organized into Treatment, Collections, and Drainage and Flood Protection Departments under the direction of a Chief Operator. MSD believes this new alignment will help it:

- Transition from 18 wastewater plants to 5 regional facilities (completed during 2016)
- Optimize its operations
- Help ensure compliance with its Consent Decree[4]
- Provide partnering opportunities with the Louisville Water Company (LWC) under the Mayor's One Water Initiative

Figure 2-1 provides an overview of the organization of MSD. The divisions and departments composing the divisions are also shown on the chart.

[4] The Commonwealth of Kentucky, Plaintiff, and the United States of American, Plaintiff-Intervener, v. Louisville and Jefferson County Metropolitan Sewer District, Defendant, in the United States District Court, Western District of Kentucky, Louisville Division. Amended Consent Decree, Case 3-08-cv-00608-CRS. Filed April 15, 2009. Available at http://www.msdprojectwin.org/Portals/0/Library/Consent%20Decree/Agreement/Commonwealth%20of%20KY%20vs%20MSD%20%20Amended%20Consent%20Decree.pdf.

Executive Offices Division
Executive Offices

DIVISION BUDGET STATUS	
Actual	34
Vacant	7
Authorized	41
Exempt	17
Non-Exempt	24
Unit	0
Total	41

BUDGET STATUS	
Actual	5
Vacant	1
Authorized	6
Exempt	5
Non-Exempt	1
Unit	0
Total	6

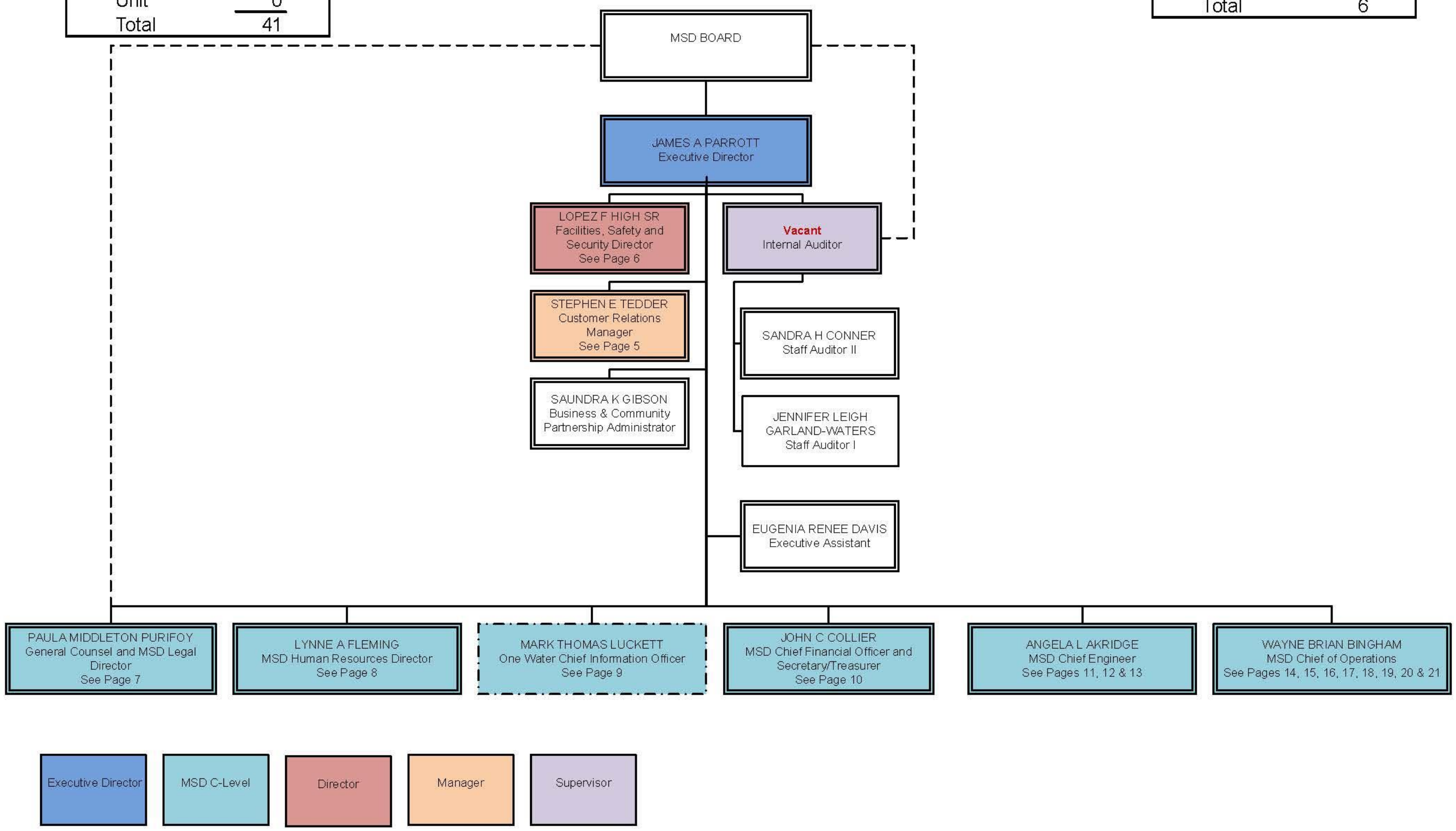


Figure 2-1. MSD Organizational Chart

The current Executive Director of MSD is Mr. James A. “Tony” Parrott. Mr. Parrott has been full time Executive Director of MSD since September 2015. Mr. Parrot has more than 30 years of experience working for public utilities. Before directing MSD, Mr. Parrott was Joint Utility Director of the Cincinnati Water Works and Metropolitan Sewer District of Greater Cincinnati for 10 years, and before that was Executive Director of the Department of Environmental Services for Butler County Ohio.

Mr. Parrott leads an executive leadership team comprised of each of the Division heads. MSD’s seven divisions are described as follows:

- The Executive Offices Division includes the Executive Director and supporting staff, as well as internal auditors; facilities management; health, safety, and security; and customer relations staff. There are currently 34 staff in this Division, with seven vacancies.
- The Legal Division includes seven staff members including the General Counsel and other legal professionals, with three vacancies.
- The Human Resources Division consists of 15 staff members involved in training, human relations (including payroll and benefits), with one vacancy.
- The Information Technology Division provides technical support for data bases and personal computers, as well as for networks and applications, and for the Louisville & Jefferson County Information Consortium (LOJIC) System that MSD manages and maintains. LOJIC is a geographic information system (GIS) mapping cooperative that is made up of MSD, the LWC, and Metro to provide accurate data collection and storage of physical assets and attributes within Jefferson County. There are currently 30 staff members in this Division, with three vacancies.
- The Finance Division includes departments responsible for coordinating the budget, purchasing, supplier diversity, revenue, the office of the controller, and policy administrator. There are currently 31 staff in the Finance Division, with three vacancies.
- The Engineering Division is responsible for planning, design, and construction management/inspection of the sewer and drainage system’s CIP. The Engineering Division is organized into departments responsible for Technical Services (primarily design and construction); Development and Stormwater; and Administrative, Regulatory Services, and GIS. There are currently 85 staff members in this Division, with 15 vacancies.
- The Operations Division is responsible for the operations and maintenance (O&M) of the sewer and drainage facilities. This Division is grouped into departments that are responsible for operations administration, operation of the wastewater treatment facilities, maintenance of the treatment facilities, sanitary sewer collection systems, drainage and flood protection, support services, and performance metrics. This Division currently employs 418 personnel, with 30 vacancies.

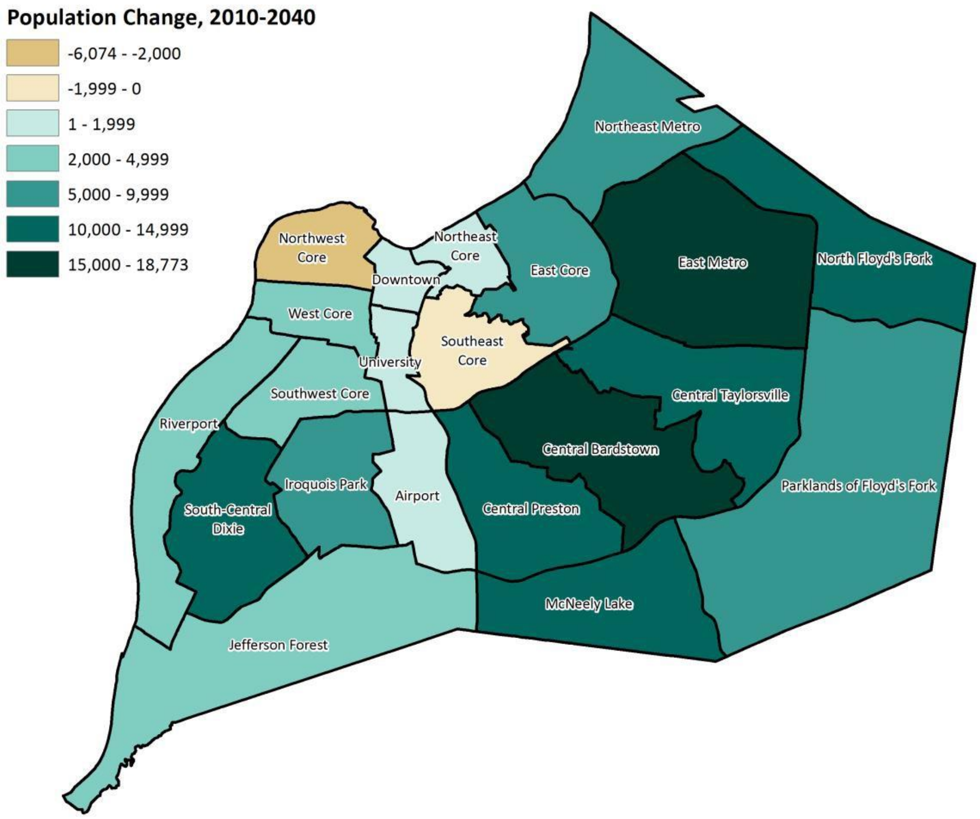
Mr. Parrott, as well as the Chief Financial Officer and Secretary Treasurer (John “Chad” Collier), and the Chief Engineer (Angela Akridge) are appointed by the Louisville Metro Mayor, and have employment contracts with MSD. Mr. Parrott’s contract expires in September 2018. Mr. Collier’s and Ms. Akridge’s appointments are subject to annual renewal for a period of 4 years from initial appointment to their respective positions.

2.4 Service Area Population and Wastewater Flow Projections

In support of the Water and Wastewater Facility Plans being prepared for LWC and Louisville MSD, respectively, the USI of the University of Louisville prepared population projections for LWC’s and Louisville MSD’s service areas (see Table 2-2). Figure 2-2 graphically depicts population change both in terms of number and in percent.

Table 2-2. Population Projections 2010–2040 Louisville Metro and Market Areas
Source: University of Louisville Urban Studies Institute

								Change 2010–2040	
	2010	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**Numeric**	**Percent**
Airport	2,536	2,521	2,503	2,533	2,553	2,608	2,658	122	4.8%
Central Bardstown	78,975	82,536	85,980	89,187	92,069	93,777	95,316	16,341	20.7%
Central Preston	54,027	56,243	58,379	60,202	61,805	63,399	64,880	10,853	20.1%
Central Taylorsville	52,977	55,536	58,016	60,456	62,675	63,839	64,888	11,911	22.5%
Downtown	13,291	13,405	13,501	13,716	13,880	14,120	14,335	1,044	7.9%
East Core	36,092	36,523	36,902	37,925	38,810	40,011	41,142	5,050	14.0%
East Metro	76,833	80,293	83,640	87,250	90,543	93,158	95,606	18,773	24.4%
Iroquois Park	51,891	52,113	52,261	53,412	54,367	55,836	57,204	5,313	10.2%
Jefferson Forest	22,522	23,058	23,560	24,438	25,226	26,162	27,051	4,529	20.1%
McNeely Lake	30,057	33,249	36,394	38,418	40,302	41,545	42,715	12,658	42.1%
North Floyds Fork	33,806	37,895	41,930	44,078	46,064	47,265	48,382	14,576	43.1%
Northeast Core	15,054	14,955	14,834	14,914	14,938	15,068	15,172	118	0.8%
Northeast Metro	16,305	17,714	19,098	20,119	21,066	21,720	22,335	6,030	37.0%
Northwest Core	32,005	30,725	29,402	28,551	27,596	26,787	25,931	-6,074	-19.0%
Parklands of Floyds Fork	13,040	15,524	17,985	19,149	20,244	20,940	21,598	8,558	65.6%
Riverport	14,902	15,412	15,899	16,602	17,243	17,855	18,434	3,532	23.7%
South-Central Dixie	54,600	56,643	58,607	60,855	62,882	64,751	66,504	11,904	21.8%
Southeast Core	49,229	48,637	47,976	47,807	47,464	47,457	47,366	-1,863	-3.8%
Southwest Core	44,210	44,333	44,394	45,298	46,036	47,335	48,549	4,339	9.8%
University	20,000	21,218	22,407	22,148	21,809	21,524	21,201	1,201	6.0%
West Core	28,744	29,466	30,147	30,370	30,482	30,751	30,966	2,222	7.7%
Louisville Metro	**741,096**	**768,000**	**793,817**	**817,427**	**838,053**	**855,909**	**872,231**	**131,135**	**17.7%**



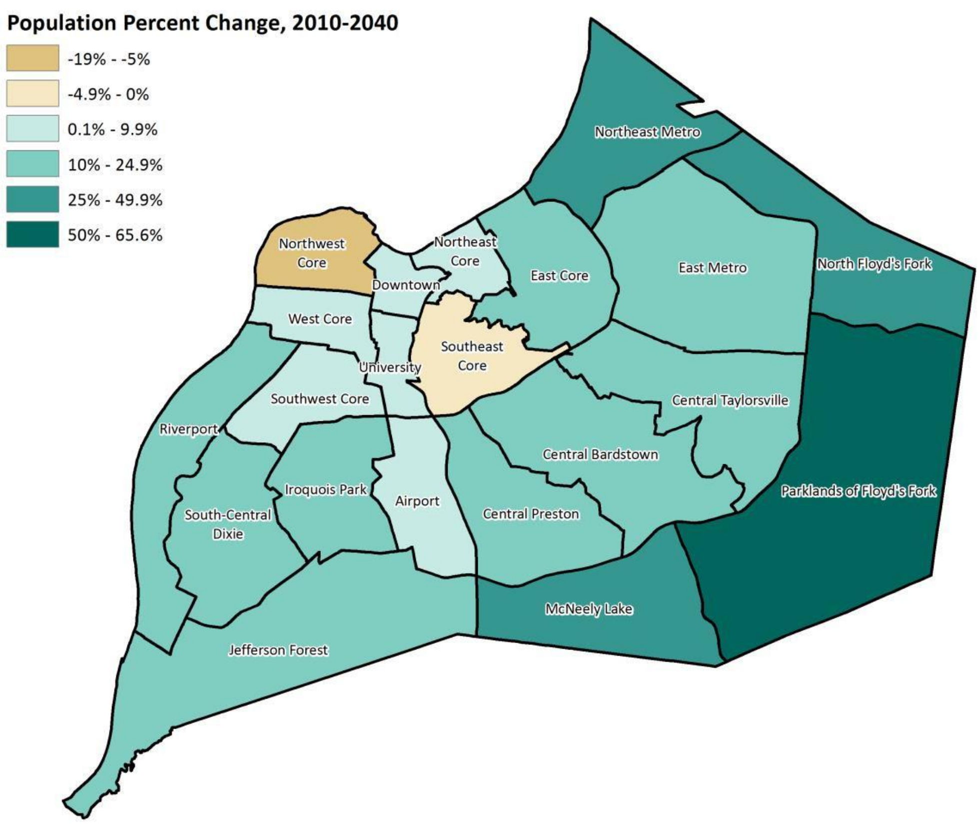


Figure 2-2. Projected Population Change (2010–2040) Louisville Metro
Source: University of Louisville Urban Studies Institute

Jefferson County is projected to grow by 131,135 people—an 18-percent increase—between 2010 and 2040. During the next 20 years, USI predicted an increase in population within MSD's service area of nearly 12 percent. This translates to an approximate increase in wastewater flows of 7 percent during the next 20 years. Growth is not projected to be uniform across MSD's service area. Population growth outside of the Core market areas (generally defined as the areas surrounding Downtown and the University that made up the main residential and commercial area of the original City of Louisville) is projected to continue at a faster pace than growth inside the Core. The largest numeric growth is expected to be in areas outside the Watterson Expressway and inside the Gene Snyder Freeway, in the East Metro and Central Bardstown market areas. Other large numeric gains (more than 10,000) are forecast in the North Floyds Fork, McNeely Lake, Central Taylorsville, South-Central Dixie, and Central Preston market areas. The largest population decline is projected in the Northwest Core market area. The Southeast Core market area is also forecast to experience a small population decline.

Market areas in eastern Jefferson County outside of the Gene Snyder are projected to see sizeable percentage gains in population. North Floyds Fork, McNeely Lake, and Northeast Metro are each projected to gain more than 25 percent of their current populations by 2040. Except for the East Core, market areas in the Core are forecast to see smaller percentage gains (less than 10 percent) or minor declines in population.

Jefferson County is projected to gain 65,425 households, a 21-percent increase, between 2010 and 2040. Because market areas within the Core are generally projected to have decreasing household sizes, several market areas within the Core are projected to experience a larger percentage change in households than in total population. Regardless, the largest numeric gain of households will be outside of the Core, in the East Metro market area. Other large numeric gains of households (more than 5,000) are projected in the Central Bardstown, North Floyds Fork, Central Taylorsville, McNeely Lake, South-Central Dixie, and Central Preston market areas, all of which are outside of the Core.

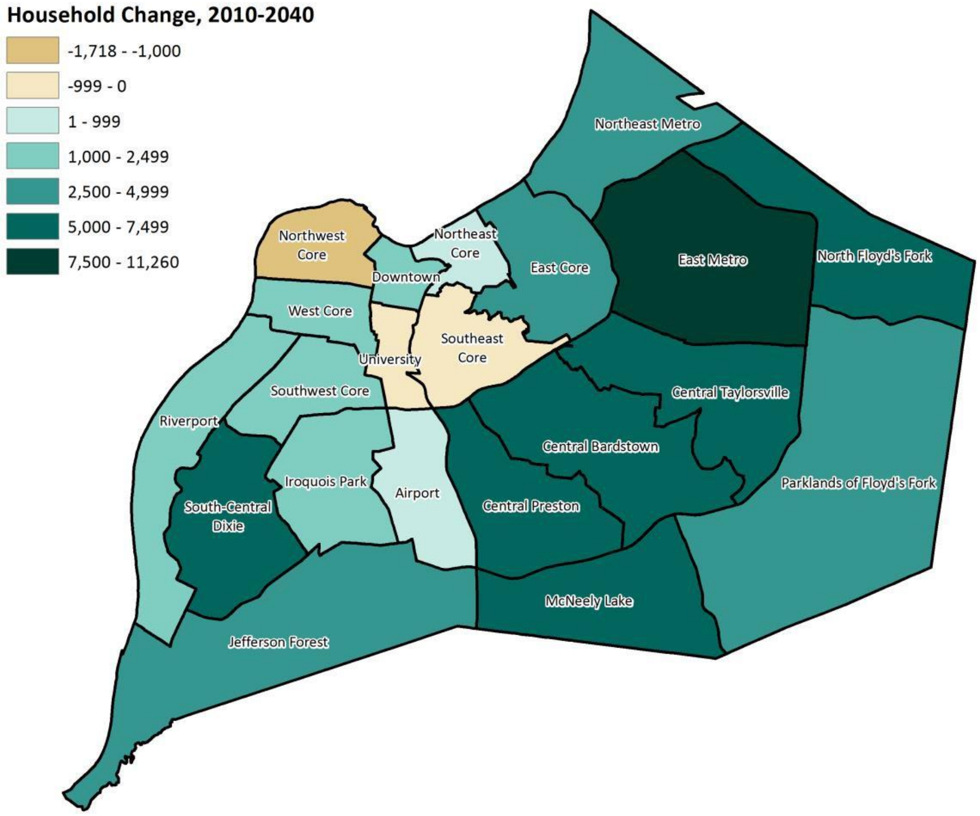
The largest percentage growth in households is expected in the Parklands of Floyds Fork and North Floyds Fork, both of which are projected to experience a larger than 50-percent increase in households between 2010 and 2040. The Southeast Core, University, and Northwest Core market areas are projected to experience minor declines in the number of households between 2010 and 2040. Though the University market area is projected to gain population during the coming decades, students living in University housing are classified as residing in group quarters rather than households, and are therefore not reflected in household change.

According the latest published U.S. Census Bureau statistics, the median household income in Jefferson County is $48,695 (2015 dollars).

Table 2-3 lists total household projections prepared by the University of Louisville USI for LWC's and Louisville MSD's service areas. Figure 2-3 graphically depicts the change both in terms of number and in percent.

Table 2-3. Projections of Total Households 2010–2040 (Louisville Metro and Market Areas)
Source: University of Louisville Urban Studies Institute

								Change 2010–2040	
	2010	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**Numeric**	**Percent**
Airport	960	967	973	990	1,001	1,031	1,058	98	10.2%
Central Bardstown	32,655	34,421	36,139	37,579	38,791	39,534	40,140	7,485	22.9%
Central Preston	22,124	23,218	24,280	25,169	25,905	26,623	27,249	5,125	23.2%
Central Taylorsville	22,069	23,440	24,778	26,062	27,187	27,749	28,215	6,146	27.8%
Downtown	5,785	6,023	6,252	6,515	6,739	6,994	7,224	1,439	24.9%
East Core	16,666	17,060	17,430	18,065	18,590	19,212	19,767	3,101	18.6%
East Metro	33,790	35,993	38,145	40,272	42,154	43,677	45,050	11,260	33.3%
Iroquois Park	21,031	21,241	21,422	21,940	22,326	22,948	23,490	2,459	11.7%
Jefferson Forest	8,530	8,948	9,353	9,861	10,308	10,774	11,204	2,674	31.3%
McNeely Lake	11,321	12,713	14,088	14,970	15,760	16,321	16,825	5,504	48.6%
North Floyds Fork	12,996	14,896	16,775	17,815	18,746	19,208	19,604	6,608	50.8%
Northeast Core	7,904	7,929	7,943	8,011	8,029	8,121	8,185	281	3.6%
Northeast Metro	6,364	7,123	7,871	8,385	8,848	9,104	9,328	2,964	46.6%
Northwest Core	12,358	12,153	11,930	11,667	11,332	11,005	10,640	-1,718	-13.9%
Parklands of Floyds Fork	4,951	6,016	7,072	7,566	8,013	8,224	8,407	3,456	69.8%
Riverport	5,797	6,061	6,316	6,662	6,968	7,209	7,426	1,629	28.1%
South-Central Dixie	21,684	22,705	23,694	24,714	25,583	26,288	26,903	5,219	24.1%
Southeast Core	23,215	23,167	23,086	23,106	22,986	22,988	22,910	-305	-1.3%
Southwest Core	18,132	18,262	18,366	18,758	19,036	19,485	19,867	1,735	9.6%
University	9,884	9,733	9,568	9,474	9,322	9,194	9,035	-849	-8.6%
West Core	10,959	11,119	11,264	11,510	11,686	11,900	12,072	1,113	10.2%
Louisville Metro	**309,175**	**323,189**	**336,744**	**349,090**	**359,312**	**367,590**	**374,600**	**65,425**	**21.2%**



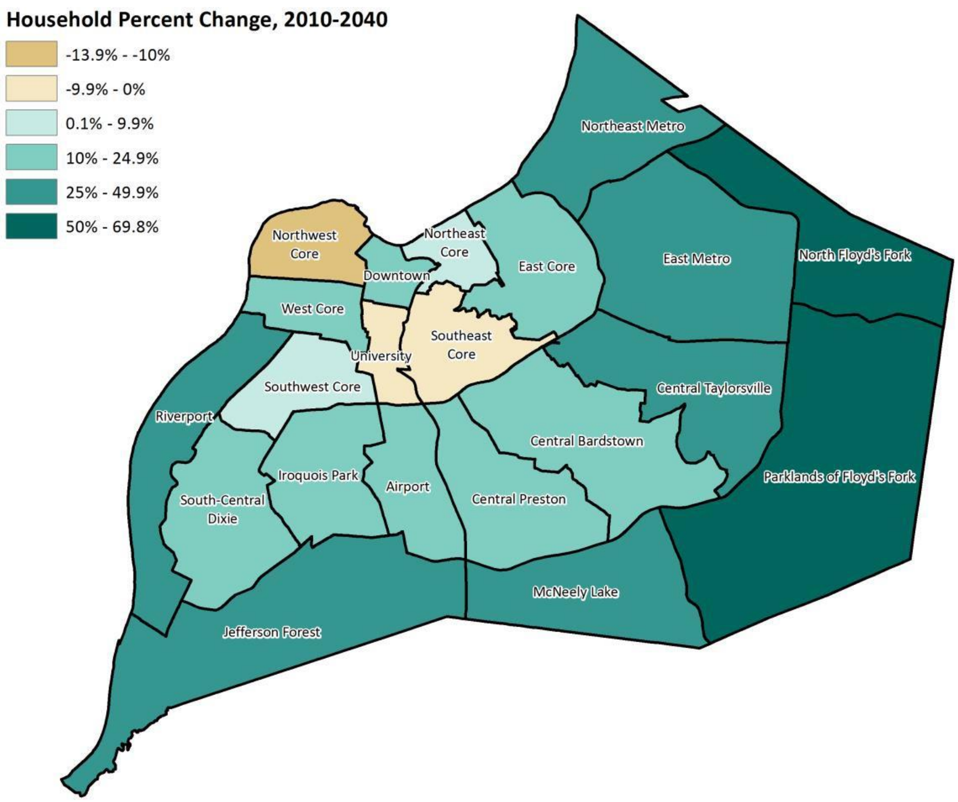


Figure 2-3. Projected Household Change 2010–2040
Source: University of Louisville Urban Studies Institute

2.5 Local Economy

The Louisville area experienced significant economic prosperity during the 1990s. Louisville's growth was driven primarily by the manufacturing and service sectors. In the 1990s, Louisville saw major investments at the two Ford Motor plants and at General Electric's (GE's) Appliance Park. Other notable developments in the 1990s included an expanded airport, several new industrial parks, an expanded convention center, a new football stadium, a large riverboat casino in nearby Harrison County, Indiana, a new minor league baseball stadium, a revived downtown, a redeveloped riverfront, and a thriving real estate market.

While the national trend of economic expansion stalled, local economic investment continued, but at a slower pace than in previous years. Investment in the service sector is still ongoing. The service sector includes healthcare, insurance, restaurants, and the like, and the distribution industry, which may be the single most important economic growth industry in Louisville Metro today and for the foreseeable future. The most notable local example is United Parcel Service (UPS). UPS completed a $1.1-billion, automated sorting facility, UPS Worldport, at Louisville International Airport in September 2002. Worldport is UPS's all-points, worldwide sorting facility for express mail packages. Continued UPS expansion of Worldport for an additional $1+ billion was completed in May 2010. This expansion included the addition of two aircraft load/unload "wings" to the hub, followed by the installation of a high-speed conveyor and computer control system, and increased Worldport by 1.2 million square feet to 5.2 million square feet.

The local transportation infrastructure and distribution network continues to attract other businesses to the area. Louisville International Airport ranked third in 2015 among U.S. airports for air cargo volume and seventh worldwide. The airport handled more than 2.35 million metric tons of cargo, freight, and mail in 2015, an increase of 60,000 metric tons from 2014 levels.[5]

The following are examples of recent and continuing local development activities and accomplishments:

- In September 2016, the International Trade Administration released its 2015 rankings for U.S. metropolitan area exports. Exports amounted to $8 million in 2015. Louisville ranked 40th overall for total exports.[6]
- Greater Louisville, Inc. the Metro Chamber of Commerce, tracks how Louisville Metro is viewed from the outside. Several notable observations are as follows:[7]
  - Louisville ranks 7th in the top 10 Cities for Job Creation, as compiled by Gallup.
  - Smart Asset Ranks Louisville No. 8 on their "Top 10 Cities for First-Time Homebuyers".
  - Louisville Ranks No. 9 in Site Selection's "2014 Top Metros by Number of Projects".
  - Louisville was listed among the top places to travel in Fodor's Travel, "Where to Go in 2015".
  - Louisville Ranks 8th in Forbes', "2015 America's Most Affordable Cities", and 4th in its "Big Cities Leading a U.S. Manufacturing Revival".
  - Association of American Retired Persons named Louisville One of the "10 Best Cities to Retire".
  - Louisville ranked 22nd out of 373 metropolitan statistical areas on "Area Development Magazine's" Leading Locations for 2015 list after coming in at 120 the previous year.

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[5] Preliminary World Airport Traffic and Rankings 20152015. Airports Council International – North America. April 4, 2016.

[6] Exports from U.S. Metropolitan Areas. International Trade Association, U.S. Department of Commerce. Accessed May 18, 2017, from http://tse.export.gov/metro/SelectReports.aspx?DATA=Metro

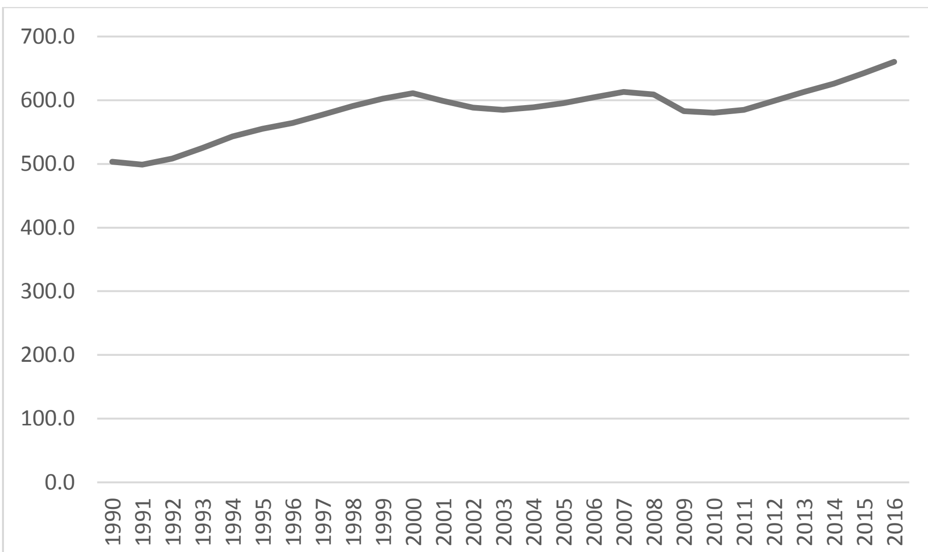
[7] http://www.greaterlouisville.com/Templates/ED/ed_2rows.aspx?pageid=1286

  - *National Geographic Traveler* named Louisville one of its "Best of the World destinations"; *Zagat Restaurant Digest* named Louisville's NuLu as one of the "Top 20 Hot Food Neighborhoods."
  - The State Entrepreneurship Index ranked Kentucky No. 4 in 2014 for its ability to create new businesses, and *Site Selection Magazine* placed Kentucky 14th in the country in its 2016 Top State Business Climate ranking.
  - In 2013, *Rolling Stone Magazine* ranked Louisville's KFC Yum! Center as the seventh-best arena or stadium for concerts in America, and Louisville Slugger Field ranked #2 in *USA Today Travel's* "10 Best Minor League Ballparks in U.S.".

- In June 2016, GE announced it would sell its appliance division located in Louisville's Appliance Park to Chinese appliance manufacturer Haier.[8] As part of the purchase, Haier pledged to keep the GE Appliances headquarters in Louisville and retain the executive leadership team. Haier also committed to a 3-year strategic plan to build market share for GE Appliances.

2.5.1 Employment Overview

While employment is cyclical, declining during economic downturns and increasing during economic booms, the Louisville/Jefferson County MSA has exhibited relatively steadily over the last 26 years (Figure 2-4).



Jefferson County Full and Part-Time Employment1969–2016
Source: U.S. Department of Labor. Bureau of Labor Statistics

[8] "GE Announces Sale to Haier." *Louisville Courier-Journal*. June 6, 2016.

2.5.1.1 Employment by Industry

Trade, Transportation, and Utilities in the Louisville/Jefferson County, KY-IN MSA is the largest industry sector by employment comprising approximately 22.1 percent of the total non-farm economy.

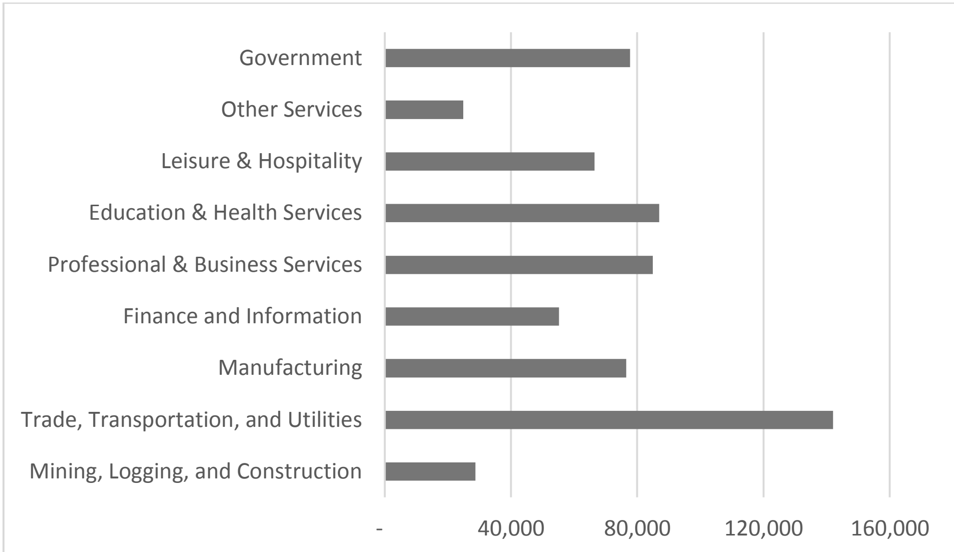


Figure 2-5. Jefferson County Full and Part Time Employment (2014)
Source: U.S. Department of Labor. Bureau of Labor Statistics

In 2015, the Louisville/Jefferson County MSA had approximately 227,000 workers in a grouping of industries denoted as “professional” in this report. The sector includes finance and information, professional and business services, and education and health services. It is also a sector subject to undercount based on the number of self-employed or contract workers in the included industries. Presumably, many of the workers in this sector have attained some level of post-secondary education.

Approximately 76,500 workers, or nearly 12% of the total employee in the MSA are employed in the manufacturing sector. A similar number of employees are employed in the Government sector.

2.5.1.2 Nonemployers

Nonemployer businesses are firms or establishments that do not have paid employees, but have annual receipts more than $1,000 and pay federal taxes. The U.S. Census Bureau uses the terms “firm” and “establishment” interchangeably. For example, a husband-and-wife team would be considered one establishment or firm. They may have family members that participate in the business, but who not do not appear as paid employees for tax purposes (that is, no one working in the firm is issued a W-2).

2.5.2 Employment Forecast

The University of Louisville Population Study forecasts that Jefferson County will continue to experience growth in the professional grouping, health care and social assistance, transportation and warehousing, and hospitality sectors (see Table 2-4).[9]

[9]Urban Studies Institute (USI). 2015. Louisville Metro Demographic and Economic Forecasts 2010 – 2040, Final Report December, 2015. Prepared by The University of Louisville. February 2015.

Table 2-4. Jefferson County Employment Forecasts, 2020–2040
Source: University of Louisville Urban Studies Institute (2015)

	2020	2025	2030	2035	2040
Manufacturing	31,767	26,139	20,510	20,000	20,000
Construction	22,178	19,521	16,863	14,206	11,548
Trade	67,621	64,464	61,307	58,150	54,992
Transportation and Warehousing	35,303	35,912	36,521	37,129	37,738
Professional	163,087	172,308	181,530	190,751	199,973
Education	13,909	14,997	16,086	17,174	18,262
Health Care and Social Assistance	75,688	81,813	87,938	94,063	100,188
Hospitality and Tourism	54,835	57,488	60,140	62,793	65,445
Other Private Sector	27,423	26,844	26,266	25,687	25,109
Public Administration	52,078	52,551	53,024	53,497	53,969
Subtotal	***543,889***	***552,037***	***560,185***	***573,450***	***587,224***
Nonemployers	57,654	62,129	66,604	71,079	75,553
Total	**601,543**	**614,166**	**626,789**	**644,529**	**662,777**

2.6 Utilities Operations Review

In 2012, the Louisville Utility and Public Works Advisory Group (the "Advisory Group") was formed by the Louisville Metro Mayor, and was tasked with examining the operations of the LWC, MSD, and Louisville Metro Department of Public Works and Assets (DPW) to identify whether synergies exist between the entities that would allow for improved service or reduce costs. The Advisory Group found that there were potential savings in consolidating services of MSD and LWC. After a due diligence review conducted by both MSD and LWC, a Comprehensive Inter-Local Agreement (ILA) was developed to create coordinated teams of employees from both agencies with the capability of delivering superior customer service at lower costs than the existing two agencies combined. The first phase of ILA implementation focused on procurement, fleet services, human resources, information technology, and customer service. It is estimated that the One Water Initiative produced more than $1 million in savings in 2015. These savings came through sharing resources and consolidating jobs. For example, LWC and MSD now have a joint Fleet Manager, and a common Chief Information Officer. MSD and LWC now have common contracts for fuel, vehicle parts and supplies, and other consumables common to both agencies. The ILA, as amended on August 24, 2015, is effective through June 30, 2035.

Drainage System

3.1 General Description

Louisville MSD through ILAs with the City of Louisville and Jefferson County assumed responsibility for drainage and flood protection (from the Ohio River) in 1987 for all of Jefferson County, except for the Cities of Anchorage, Jeffersontown, Shively, and St. Matthews. Those cities do not participate in MSD's drainage program except as co-permittees under the MS4 program that MSD administers. MSD is responsible for maintenance and operation of approximately 4,700 miles of drainage system components (for example, ditches, culverts, and storm sewers), 870 miles of inland streams, 16 flood pumping stations, and 29.5 miles of floodwalls/levees.

MSD's combined sewer system provides storage, conveyance, and treatment of both sanitary sewage and storm water. During dry weather, the system carries only sanitary sewage to the Morris Forman Water Quality Treatment Center (WQTC) for treatment and discharge. During wet weather events, the combined sewers also convey urban runoff in the same pipe system. Figure 3-1 shows the boundaries of the combined sewer system.

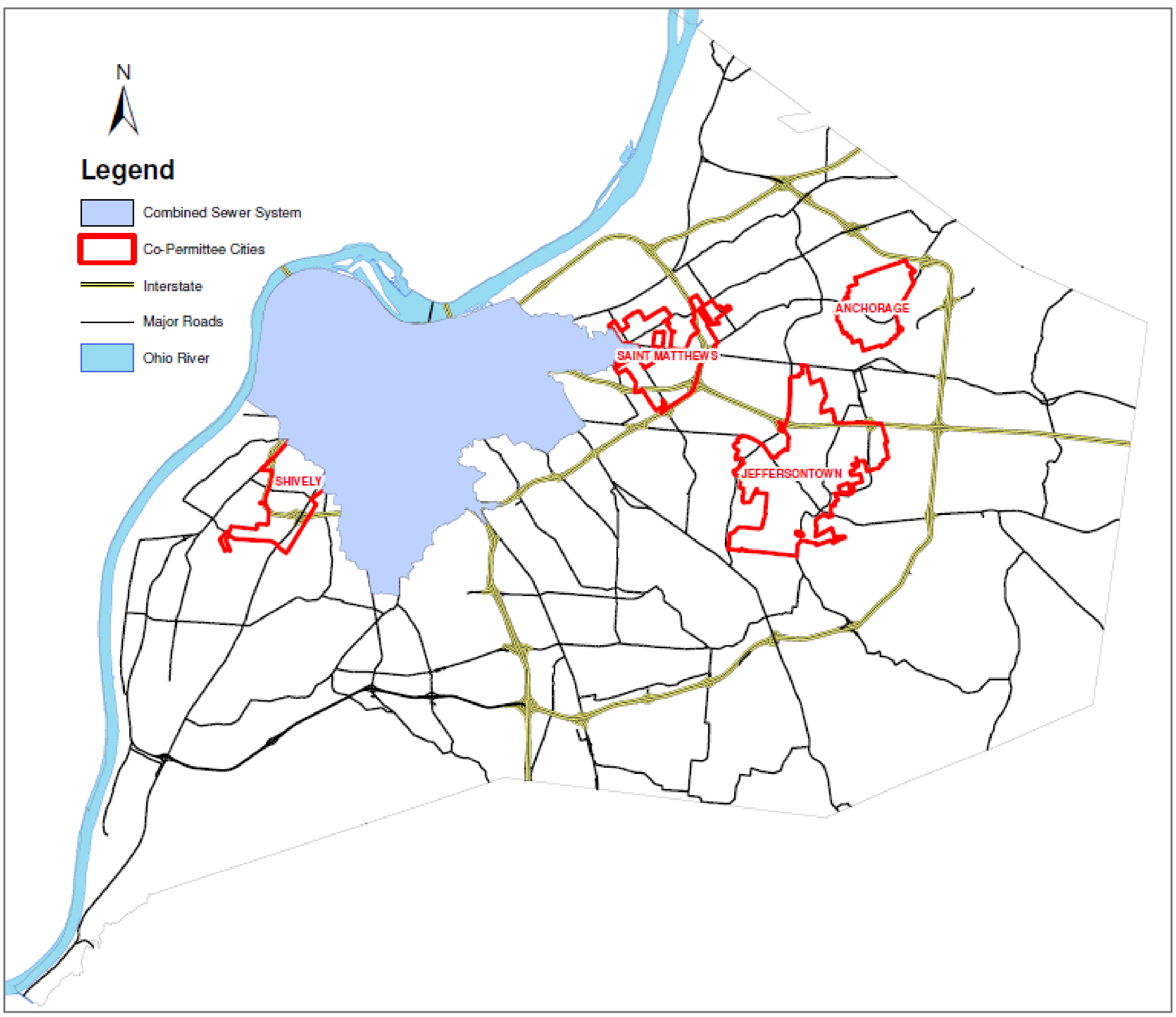


Figure 3-1. Stormwater and MS4 Service Areas

3.1.1 Service Area and Customer Base

Drainage service is provided essentially to all of the developed area in the Louisville metro area (note that the City of Louisville and Jefferson County merged in 2003 and now have the same boundaries). This includes several smaller cities within the service area, as shown in Figure 3-1. Opportunities for growing the service area are limited to adding the Cities of Anchorage, Jeffersontown, Shively, and/or St. Matthews fully into MSD's drainage system.

Currently MSD serves a population of approximately 650,000 and bills for stormwater services using equivalent service units (ESUs). MSD currently has approximately 581,000 ESUs, in total, from the four classifications it uses: residential, commercial, industrial, and city-owned.

3.2 Stormwater Drainage Permitting Requirements

The permit to operate a drainage system and discharge stormwater to waterways of the Commonwealth is administered by the Division of Water of the Kentucky Department of Environmental Protection (KDEP). Specifically, the drainage system is regulated through an MS4 permit, which sets out minimum requirements that must be met to protect water quality in the Commonwealth. These conditions apply to the small cities within the County that MSD provides stormwater service to, and to the four cities that provide their own stormwater system. These communities are co-permittees with MSD, and they pay an annual fee to compensate MSD for a portion of the costs to administer the countywide program.

Plans for drainage improvements must be coordinated with the U.S. Army Corps of Engineers (USACE), if they impact waters of the United States, and the Federal Emergency Management Agency (FEMA), or if they may affect floodplains. USACE also has inspection authority for the Ohio River Flood Protection System.

Operation of the combined sewer system and its associated storage and treatment facilities is authorized through the Kentucky Discharge Elimination System (KPDES) permit for the Morris Forman WQTC.

3.3 Facility Description and Evaluation

MSD's stormwater system can generally be separated into two components:

- **Interior Drainage System –** This includes the infrastructure to collect and convey drainage across the County via pipes, ditches, streams, and channels to the Ohio River.
- **Ohio River Flood Protection System –** This includes the flood pumping stations, floodwalls, and levees that hold back rising waters from the Ohio River and pump drainage from the interior of the County into the Ohio River when the floodwalls and levees are closed.

The combined sewer system is described as part of the sewer system in Section 4.

3.3.1 Interior Drainage System

The Interior Drainage System is composed a variety of facilities including 1,080 miles of storm sewer pipe (including culverts under roads), 3,616 miles of channels and ditches, and 870 miles of creeks (both natural and improved). Runoff during rain events is collected and either stored, retained, and/or conveyed to sewers, rivers, streams, creeks, channels, and ditches for eventual discharge to the Ohio River, either directly or through one of its tributaries. The system is operated by MSD and maintained through a combination of MSD staff and contractors.

MSD assumed responsibility for the drainage systems in Jefferson County in 1987. When it did, it inherited a large backlog of challenges and deferred maintenance that had been accumulating for decades. The preparation and execution of the Stormwater Drainage Master Plan and Watershed Master Plan, in 1988, began the process of addressing these issues and raising the level of service throughout the County. Subsequent studies and plans identified additional improvements; and in 2003, MSD initiated the Drainage Response Initiative (DRI) program to review customer service requests, develop solutions, and allocate resources to execute remedies in an efficient manner. Since taking over responsibility for the system, in 1987, MSD has invested nearly $200 million in stormwater improvements through the DRI program.

More recently, the drainage system has faced increasing challenges because of both an elevated frequency of extreme storms, which brings heavier rains more often, and by a greater percentage of impervious area, providing additional stormwater runoff as the community develops and expands. The additional impervious area causes a higher portion of stormwater to collect in the stormwater system rather than being absorbed in the ground. The net results of these factors are flooding and other stormwater issues, such as excessive ponding, erosion of streambanks, and water in homes occurring more often and in areas that had historically not been problematic. To address these issue, in part, MSD began the process of creating the Critical Repair and Reinvestment. While still in development, the Critical Repair and Reinvestment Plan has recommended changes in stormwater design and construction standards that will mitigate these issues and prepare Louisville to manage the size and frequency of storms projected in the future. These recommendations are in the process of being considered for adoption and implementation. Additionally, the Critical Repair and Reinvestment Plan recommends that MSD develop an updated stormwater-drainage master plan based on Critical Repair and Reinvestment Plan recommendations. This plan will develop projects throughout the County to meet the changing needs of the next 20 years, and will include an early-action component made up of projects that can be implemented while the remainder of the Critical Repair and Reinvestment Plan is written.

3.3.1.1 Community Rating System

The National Flood Insurance Program (NFIP) Community Rating System (CRS) is a voluntary incentive program encouraging community floodplain management activities that exceed the minimum NFIP requirements. Communities taking part in this program are awarded points for participating in public information, mapping and regulation, flood damage reduction, and flood preparedness.

Through MSD’s participation in the program, Louisville Metro was moved from a CRS Class 4 to a Class 3 community. This earns an additional 5 percent in flood insurance savings, granting the community a 35-percent discount on flood insurance premiums. This new level of discount became effective October 2015. The community saves approximately $2 million each year in flood insurance premiums because it is ranked as a Class 3 community. Besides Louisville, only six communities in the U.S. have a Class 3 CRS rating or better.

3.3.2 Ohio River Flood Protection System

When the elevation level of the Ohio River rises, MSD’s service area is protected from flooding through a network of 29.5 miles of floodwalls and levees. The 185 street crossings, pipe openings, and gates that allow creeks to pass through are sealed and the river is held back. With the creeks and storm sewer system prevented from discharging into the Ohio River, MSD relies on 16 flood pumping stations to pump drainage over the floodwall and levee to prevent stormwater from backing up and causing flooding within the area. It is important to understand that the operation of the flood pumping stations is intermittent and infrequent, only occurring when both the Ohio River is in flood stage and there is a rain event within the drainage system. Many of the pumping stations operate only once every few years.

The USACE completed the *Levee Safety Evaluation* in the summer of 2015. This report evaluated the operations, maintenance, and condition of the entire flood-protection system. It found that the system of floodwalls, levees, and flood pumping stations met all of the applicable standards and was acceptable under the FEMA flood protection and insurance program to reasonably reduce the risk of flooding to the point where there is a 1-percent chance or less that the flood protection system would be overwhelmed in any given year.

The Ohio River flood-protection portion of the drainage system faces the same challenges of increasing impervious area and more frequent extreme storms. That, plus the age of most of the flood pumping stations (most were built in the 1950s), has led MSD to take a proactive approach to improving the flood pumping stations. The Western Flood Pump Station was rehabilitated in 2010 to 2013, and several stations are undergoing upgrades to their electrical and control systems. The Critical Repair and Reinvestment Plan has outlined a prioritized approach to update technology and increase pumping capacities to continue to protect the community in the future. The floodwalls and levees will continue to be maintained but are not expected to need expansion or raising. They are already set several feet above the flood elevation of record (the Great Flood of 1937).

3.4 Ohio River Flood Protection Permitting Requirements

As previously noted, the interior drainage system is regulated by MSD's MS4 permit. The Ohio River flood-protection system is not regulated by a single agency or permit, but rather through a series of requirements and standards established by multiple state and federal agencies such as FEMA, USACE, the Code of Federal Regulations, and the Flood Control Act. Currently, there are no anticipated or expected regulatory changes that would affect the Ohio River flood-protection system. However, the MS4 permit requirements are anticipated to become more stringent in the coming years. This potential change has been expected, and MSD has already taken steps to prepare for this higher level of compliance. In addition, the Critical Repair and Reinvestment Plan has forecast budgetary requirement to maintain compliance both for the next 5 years and for the rest of the planning period.

Sewer System

4.1 General Description

MSD's sewer system extends throughout much of the developed portions of Jefferson County. It includes approximately 600 miles of combined sewers (which carry sanitary wastewater during dry weather and a combination of stormwater and sanitary wastewater during wet periods), 2,700 miles of sanitary sewers, more than 260 pumping stations, five regional WQTCs, and an estimated 1,400 miles of lateral connections to buildings. Responsibility for laterals is shared with the property owner; MSD is solely responsible for the laterals within the right-of-way.

4.1.1 Service Area and Customer Base

By Kentucky state statute, MSD is authorized to provide wastewater collection, treatment, and disposal services in Jefferson County. Through inter-local agreements, MSD also provides these services to portions of Oldham County and small parts of Bullitt County, as shown on Figure 4-1. The area includes approximately 270 square miles and serves approximately 254,000 customers.

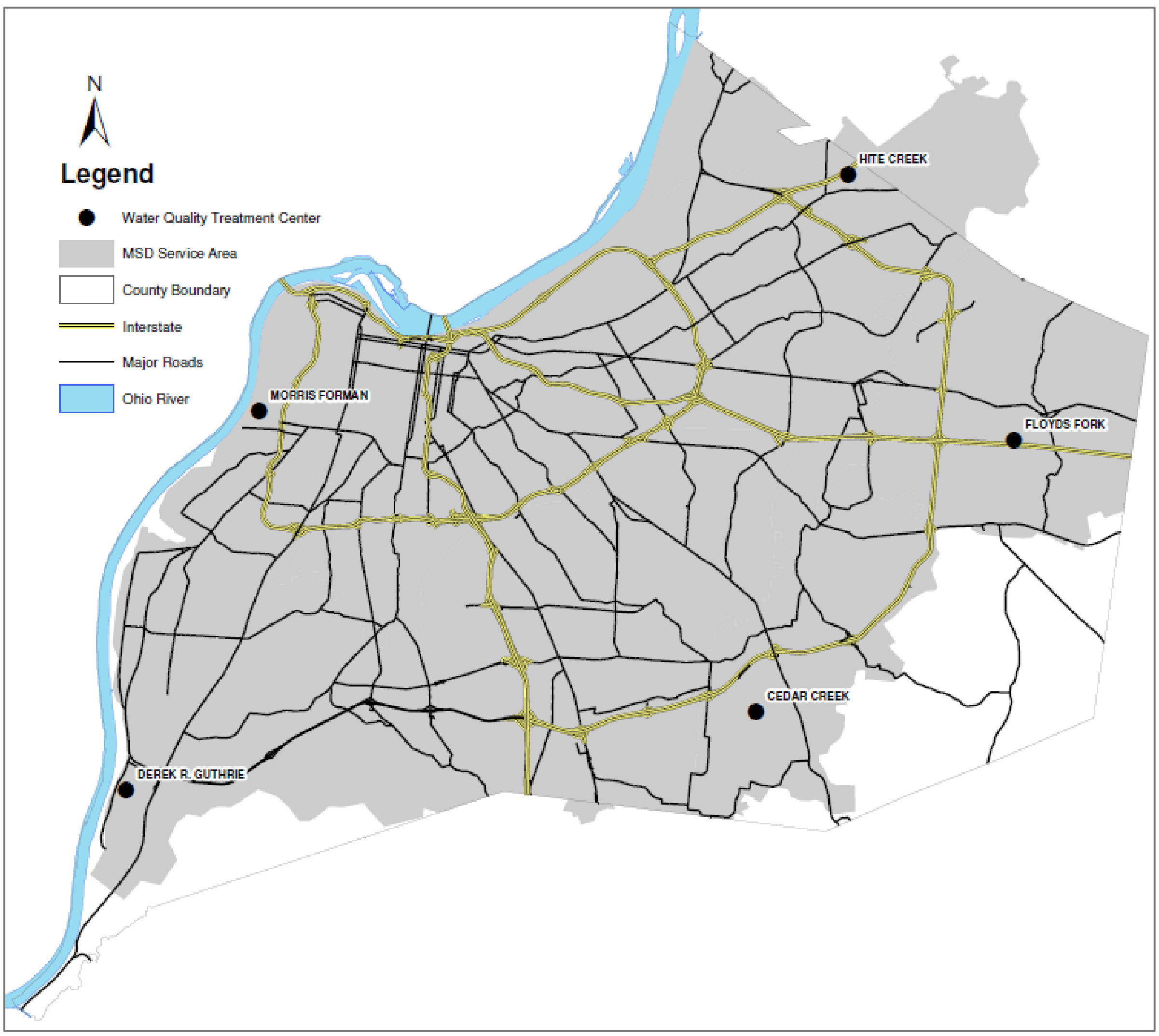


Figure 4-1. Wastewater Service Area

4.2 Wastewater Flows

In support of the Facility Plans being prepared for both MSD and LWC, the USI of the University of Louisville developed population projections for LWC and MSD's service areas. As wastewater flows are closely tied to water consumption, a joint approach that incorporated both organizations' data and inputs was determined to be more effective than developing flow projections independently.

Population projections were prepared for MSD's service area (including portions that are not being served now) and organized into sewersheds for each WQTC. Table 4-1 summarizes flow projections (including residential, commercial, and industrial flows). For planning purposes, flows from Southeastern Jefferson County, which is currently not sewered, but could be in the future, were included in the projections. Overall, an increase in flows of almost 13 percent is expected between 2015 and 2035.

Table 4-1. Annual Average Flow Projections (MGD)
Source: University of Louisville Urban Studies Institute

Year	Morris Forman	Derek R. Guthrie	Hite Creek	Floyds Fork	Cedar Creek	SE Jefferson County	Total
2015	109.90	42.36	5.22	4.65	5.62	0.84	168.59
2020	109.76	46.87	5.90	5.47	6.61	0.99	175.6
2025	109.72	53.34	6.37	6.46	7.75	1.21	184.85
2030	108.93	54.14	6.87	7.43	8.88	1.42	187.67
2035	108.53	54.77	7.22	8.59	9.49	1.73	190.33

Note: MGD=million gallons per day

As seen in Table 4-2, MSD's WQTCs either have the capacity to handle the projected 2035 flows or will achieve the required capacity through planned projects. Flows from Southeastern Jefferson County may be treated at a new WQTC that is being discussed as part of long-term development discussion, when or if it is constructed. Currently, flows from that area are being handled by onsite systems, such as septic tanks.

Table 4-2. Comparison of Projected Flows to Existing and Planned Capacity in 2035 (MGD)
Source: University of Louisville Urban Studies Institute

WQTC	2035 Projected Flows	Existing Capacity	Planned Capacity in 2035	Percentage of Excess Capacity in 2035
Morris Forman	108.53	120	120	111%
Derek R. Guthrie	54.77	45	60	110%
Hite Creek	7.22	6	9	125%
Floyds Fork	8.59	6.5	9.75	114%
Cedar Creek	9.49	7.5	11.25	119%

Modeling of MSD's collection and conveyance system has confirmed that the capacity necessary to transport the projected flows exists in the system now or will with the completion of planned projects.

4.3 Wastewater Collection and Transmission

MSD wastewater collection and transmission system is comprised of a network of nearly 3,300 miles of mainline pipe, 1,400 miles of laterals, and 264 pump stations. The service area is divided into five sewersheds that collect and convey wastewater to one of five WQTCs for treatment. Table 4-3 provides a breakdown of the system components by sewershed.

Table 4-3. Summary of Wastewater Collection and Transmission Infrastructure by WQTC Sewershed

WQTC Sewershed	Miles of Gravity Sewer	Number of Pump Stations
Morris Forman	1,751	95
Derek R. Guthrie	948	40
Hite Creek	211	57
Floyds Fork	178	34
Cedar Creek	190	38

Portions of MSD's collection system date back to the Civil War era and are still in service today. The O&M of such a large and dated system can present challenges because of the condition of assets and the materials with which they were constructed. MSD is currently in the process of inspecting their entire sewer system. Significant defects are being addressed in the system following inspection. The inspection process is nearly complete and will result in a long-term plan to manage the future inspection and renewal of the collections system. MSD has found that many areas, especially where polyvinyl chloride pipe has been used in constructing the sewers, will not need significant attention for decades. Providing a level of service consistent with established MSD targets is still necessary in all areas of the system. Substantial improvements in I&I have already been documented in areas post-rehabilitation to substantiate the efficacy of MSD's efforts. Critical pieces of infrastructure, such as large-diameter interceptor sewers, will continue to be evaluated and renewed as necessary through annual budgets recommended in the Critical Repair and Reinvestment Plan CIP.

4.4 Wastewater Treatment Facilities

MSD has consolidated its treatment facilities into five regional WQTCs. A summary of the five WQTC follows.

4.4.1 Morris Forman Water Quality Treatment Center

The Morris Forman WQTC was originally constructed in 1956 for preliminary and primary treatment. It was designed to receive a maximum daily flow of 105 MGD and a maximum hourly flow of 338 MGD. Secondary treatment facilities installed during plant upgrades in 1970s and plant upgrades in the late 1990s and early 2000s improved performance and increased treatment capacity to its current level of 120 MGD with a peak flow capacity of 350 MGD. It is the largest WQTC in MSD's system and its most valuable single asset.

In 2015, Morris Forman's power supply was impacted by a voltage surge assumed to be caused by a lightning strike on the incoming power lines. The damage to the electrical equipment was so severe that it impacted the back-up power supply equipment and prevented the plant from running on utility power. At the time of this incident, the Ohio River was at an elevated stage that required pumping the WQTC's effluent to the river. Without power to run the effluent pumps, the WQTC quickly flooded and was submerged until crews could drain the facility. The damage to the facility was extensive and prompted MSD to initiate a comprehensive evaluation of the Morris Forman WQTC and its future for a 50-year period. This study is ongoing and will define long-term plans for the facility.

Before the electrical equipment failure, the Morris Forman plant consistently met all regulatory and permit requirements. Damage to the plant has mostly been repaired, and plant performance is returning to compliance with the discharge permit. Ongoing electrical distribution and standby generator projects will protect the facility from similar incidents. As a large facility, ongoing capital needs are required to keep the WQTC operating at the level of performance required. A current project is replacing the aging and inefficient high-purity oxygen generation equipment with a system that provides additional capacity and improved reliability. Equipment renewal and repair budgets have been recommended in the Critical Repair and Reinvestment Plan for the next 20 years to plan for preventative and predictive repair and replacement. Additionally, MSD is in the process of evaluating its solids-handling process and strategy. Future investment needs for solids will be defined as part of that study. The study, pilot testing, and other evaluations necessary to make an informed decision will take approximately 5 years.

4.4.2 Derek R. Guthrie Water Quality Treatment Center

The original facilities at the Derek R. Guthrie WQTC site consisted of a screening chamber and a raw sewage pump station brought online in 1979. The first secondary treatment facilities, collectively termed Phase 11, at what was then known as the West County Wastewater Treatment Plant, were brought online in 1986 with a rated hydraulic capacity of 15 MGD average daily flow (ADF) and 30-MGD peak daily flow (PDF). In 2001, the Phase 2 Expansion increased the capacity to 19.5-MGD ADF. In 2004, the Phase 3 Expansion increased the capacity to 30 MGD ADF.

In 2012, additional facilities enabled the Derek R. Guthrie WQTC to treat up to 200 MGD of wet weather flow using a modified contact stabilization process. Normal flows continue to be handled by the existing contact stabilization treatment process for flows up to 200 MGD. Further improvements in pumping and flow equalization have been constructed that allow the Derek R. Guthrie WQTC to receive peak elevated flows more than 300 MGD for short durations. Because of these new facilities, MSD is in the process of obtaining a new KPDES permit increasing the annual average flow capacity to 60 MGD with associated changes in discharge parameters appropriate for the increased flows.

Much of the mechanical equipment has an average 15 years of useful life remaining, while most of the structures have more than 20 years of useful life remaining. Older treatment process equipment that was not addressed during the expansion has approximately 5 years of useful life remaining. Equipment renewal and repair budgets have been recommended in the Critical Repair and Reinvestment Plan for the next 20 years to plan for preventative and predictive repair/replacement.

4.4.3 Hite Creek Water Quality Treatment Center

The Hite Creek WQTC is currently rated at 6.0-MGD ADF and 16.0-MGD peak hourly flow capacity. Because of the conveyance of wastewater flows from Oldham County to the Hite Creek WQTC, the peak hourly flow capacity is in the process of being increased to 24 MGD to better manage short periods of high flows. The projected wastewater flows will exceed the average treatment capacity by the year 2019, and an expansion to 9-MGD ADF capacity is under design currently, with construction scheduled to begin in 2018. Most the equipment has an average 5 to 10 years of useful life remaining, while most of the structures have more than 20 years of useful life remaining. Equipment renewal and repair budgets have been recommended in the Critical Repair and Reinvestment Plan for the next 20 years to plan for preventative and predictive repair and replacement.

4.4.4 Floyds Fork Water Quality Treatment Center

The Floyds Fork WQTC went through a major expansion in 2012 in which the treatment capacity was increased and sludge holding tanks were added. Through this expansion, many of the plant’s mechanical needs were addressed, leaving much of the equipment with an average of 15 to 20 years of useful life remaining and most of the structures more than 20 years of useful life remaining. Equipment renewal and repair budgets have been recommended in the Critical Repair and Reinvestment Plan for the next 20 years to plan for preventative and predictive repair and replacement.

4.4.5 Cedar Creek Water Quality Treatment Center

There are several small projects underway at the Cedar Creek WQTC. However, much of the plant has remained untouched since the last expansion in 2005. This has left the plant with many of the mechanical processes with 5 to 10 years of useful life remaining. While many of the structures are 20 years in age, they are still sufficient in providing a level of service consistent with MSD targets, meeting the facility’s needs, and are likely to have an additional 20 years of useful life remaining if maintained in the same manner. Equipment renewal and repair budgets have been recommended in the Critical Repair and Reinvestment Plan for the next 20 years to plan for preventative and predictive repair/replacement; these identified needs are included in the capital plan detailed in Section 5.

4.5 Wastewater Regulatory Impacts

The collection, treatment, and disposal of wastewater is one of the most heavily regulated industries in the U.S. MSD is regulated and monitored by the following agencies: the Commonwealth of Kentucky Energy and Environment Cabinet; the U.S. Environmental Protection Agency; the Ohio River Valley Water Sanitation Commission; and the Louisville Metro Health Department.

Currently, two primary regulatory drivers for investment in the system are the various KPDES permits issued to MSD and the Consent Decree addressing sewer overflows and treatment plant bypassing and recordkeeping.

In the future, several regulatory changes are being considered that could affect MSD. In particular, potential increased nutrient removal standards and modification of the water quality criteria for recreation could impact MSD’s operations within the next 20 years (changes to nutrient removal standards are not expected for at least 10 years). MSD has developed plans to meet these and other anticipated changes to continue operating in compliance with minimal disruption. Additionally, MSD has made plans for other potential regulatory changes that are not expected in the next 20 years but that could be costly to comply with if adopted, and would warrant advanced planning further into the future at a point where their adoption is deemed likely. Potential requirements to remove micro-constituents, such as pharmaceuticals and personal care by-products, would necessitate substantial expansions of MSD’s treatment processes. The removal of micro-constituents from wastewater effluent is not anticipated for at least 20 or more years, giving MSD more than ample time to prepare if such regulations are adopted.

Capital Improvements

This section discusses the planned and proposed capital improvements included in MSD's CIP for 2017 to 2035, with a focus on improvements planned to be implemented within the next 5 years. MSD's Critical Repair and Reinvestment Plan scope was developed to identify long-term capital project needs and associated operating programs to improve and sustain the wastewater, stormwater, and Ohio River flood protection system. The projects and programs required by the Consent Decree are to be completed, as are any other projects needed for compliance, with applicable regulations.

However, most of the recommendations of the Critical Repair and Reinvestment Plan are based on the community's desire for sustained reliability of service and improvements in the level of protection provided for stormwater drainage, floodplain management, and Ohio River flood protection. Implementation of these locally-driven projects and programs depend on the community's willingness to fund the improvements. The Critical Repair and Reinvestment Plan recommendations represent a road map to achieve a reliable and consistent level of service across the County for all MSD's service offerings. <u>The actual timing of recommended actions will be determined by the availability of funds to complete them.</u>

A summary of key projects planned or already underway is presented in the following subsections.

5.1 Drainage and Sewer System Master Plan Update Improvements

5.1.1 Proposed Capital Improvements

Proposed capital improvements are organized into drainage and sewer system sections. Drainage projects include stormwater improvements to reduce nuisance ponding, mitigate flooding, protect against Ohio River and interior flooding, and enhance water quality in Jefferson County. Sewer system projects include projects related to the collection, conveyance, and treatment of sanitary and combined wastewater. Projects related to MSD's Consent Decree are addressed separately in Section 5.2.

5.1.1.1 Proposed Drainage Capital Improvements

As part of the development of the Critical Repair and Reinvestment Plan, an extensive review of previous drainage studies and planning was conducted. The conclusion of the planning team was that MSD had successfully executed the vast majority of the projects identified previously and had shifted its focus to resolving smaller, neighborhood- to site-level drainage issues. To respond to changes in land use, development, and extreme storm frequency in a holistic manner, the Critical Repair and Reinvestment Plan team recommended a watershed-scale stormwater master plan to address stormwater and drainage needs across Jefferson County. This plan will identify larger-scale improvements to MSD's drainage system, and is recommended for completion in the first 5 years of the Critical Repair and Reinvestment Plan. Projects have been prioritized for the next 5 years to conform to MSD's cash flow based on an assumed rate increase of 6.9 percent per year for FY 2018 through FY 2022. Under these revenue projections, drainage capital improvements for the next 5 years total $41.5 million.

These drainage system improvements are included in the approved CIP based on the assumed 6.9 percent rate increase.

- **MS4 Program.** Discharges from storm sewer systems in metropolitan areas are permitted under the MS4 permit. This permit sets requirements that MSD must meet to mitigate pollution of waters from stormwater discharges. The requirements of this permit are expected to grow in scope and scale in the next 20 years. To meet these anticipated new standards, capital projects in the form of retrofits to the existing system, systems to remove pollutants from stormwater, green infrastructure installations, greater public outreach/education, and additional support will be needed. The 5-year CIP includes $9.7 million to support this program.

- **Drainage Response Initiative.** The DRI program was developed to address Louisville's problematic drainage areas. This highly successful program has eliminated a significant backlog of issues and continues to be a critical component of the overall drainage program. As a mature program, projects tend to be smaller and are focused on resolving repeat problem areas. A total of $16 million has been budgeted in the 5-year CIP to continue this program.
- **Viaduct Flooding Solutions.** Numerous viaducts in MSD's service area can become inundated during heavy rains leading to transportation disruptions and potential dangers to residents. Conceptual solutions have been identified to address all the problematic viaducts through improvements to the existing drainage system. A total of $15 million has been budgeted in the 5-year CIP to start work on four critical viaduct locations.

Recommendations from the Critical Repair and Reinvestment Plan that may not be funded if the assumed 6.9 percent rate increase is implemented are as follows:

- **Stormwater Master Plan (SWMP**). The Critical Repair and Reinvestment Plan recommendations include $4 million to develop a detailed master plan to direct long-term improvements to Louisville's drainage system. The SWMP will develop holistic, watershed-based solutions to address lingering issues and prepare the system for increased frequency of extreme storm events. Under the constraints imposed by the assumed 6.9 percent rate increase, this project and any short-term follow-up projects are not scheduled to be initiated in the current 5-year CIP but will be addressed in the future or as funds become available.
- **Floodplain Buyout.** MSD has been successful at leveraging funding from the federal government, particularly FEMA, to remove homes and businesses from the floodplain. This is often substantially more cost-effective than infrastructure solutions and provides a higher level of protection. Given the budget limitations imposed by a 6.9 percent rate increase, no funding is proposed in the current 5-year CIP has been allocated to support grant coordination/administration, local share contributions, and flood proofing. MSD may resume these activities in the future as funds become available.
- **Basin Retrofit Projects.** These projects will modify existing stormwater basins to infiltrate water into the ground and remove pollutants before discharging to community streams. These retrofits will improve the functionality of the basins both in runoff flow reduction and runoff water quality. Under the constraints imposed by the assumed 6.9 percent rate increase, these projects are not scheduled to be initiated in the current 5-year CIP but will be addressed in the future or as funds become available.

5.1.1.2 Ohio River Flood Protection System

A key focus of the Critical Repair and Reinvestment Plan was to enhance MSD's asset management program by formalizing a proactive renewal and replacement component. Within MSD's drainage system, this is most applicable to the Ohio River flood protection system that generally consists of the floodwall, levees, and flood pumping stations. Total capital expenditures in the next five years for the Ohio River flood protection system are estimated to be $68.3 million and are as follows:

- **Floodwall and Levee Projects.** MSD is responsible for the O&M of the 29.5 miles of floodwall and levees that protect Louisville from flooding from the Ohio River. Maintaining the integrity of this system is critical to preventing a catastrophic loss of life and/or property. The USACE recently evaluated MSD's flood protection system, and found that the floodwall and levees meet all applicable FEMA requirements. As the floodwall and levees have been constructed and are not anticipated to need to be expanded, the focus is on continued renewal and replacement. Annual budget allocations have been developed to keep the system operable and reliable by repairing and/or replacing gates, closures, and panels; keeping the levees free of encroachments and settlement; improving the efficiency of the system; and additional risk assessments to identify critical areas. During the next 5 years, these projects and allocations total $12.9 million.

- **Flood Pumping Stations.** MSD's 16 flood-pumping stations pump stormwater drainage from the interior of the service area into the Ohio River when the river's elevation requires the floodwall and levees to be sealed. A total of 10 of the 16 stations were constructed in the 1950s and still contain equipment from the original construction. At the same time, changes in land use, development, and the increased frequency of extreme storms are creating the need for the stations to pump at higher capacities in the future. To prepare for this, projects have been developed to renovate, expand, and/or improve all flood-pumping stations to meet the anticipated needs in 2035. A total of $55.4 million has been budgeted for the next 5 years to begin the implementation of these projects.

5.1.1.3 Proposed Sewer System Capital Improvements

In response to the 2005 Consent Decree, MSD prepared the IOAP. Since the IOAP was approved in 2009, MSD's focus has been on implementing the projects outlined in the IOAP. To continue to meet the level of performance required by the Consent Decree, additional capital improvements will be necessary after the IOAP is completed. At the same time, changes in regulations, opportunities for enhanced efficiencies, and the evolving needs of the community require capital investments that have been documented by the Critical Repair and Reinvestment Plan. A summary of key projects planned or already underway including the following:

- **System Expansion.** To meet the needs of a growing community, projects have been defined to expand sanitary sewers to developed areas without sewers and undeveloped areas that are expected to grow. The costs of development-related projects would be offset through capacity development charges and/or other mechanisms that will recoup expenses over time. This also includes land acquisitions to provide space to expand WQTCs as necessary to increase capacity.
- **System Redundancy**. As the wastewater flows and loads increase over time, the importance of fully functional infrastructure increases. To this end, critical pump stations and treatment processes have been identified that must maintain a minimum level of performance at all times. To achieve this, improvements have been developed to provide secondary power, redundant systems, or backup equipment for these key pieces of equipment throughout the service area.
- **System Resiliency.** The increased frequency of extreme storm events puts the functionality of sewer systems at a higher risk of being inundated and thus inoperable or possibly permanently damaged. Assets potentially vulnerable to being impacted by rising floodplains have been determined and budgets established to mitigate the risks to them.
- **System Efficiency.** As part of the extensive review of MSD's sewer system by the Critical Repair and Reinvestment Plan team, opportunities to enhance efficiencies were discovered. The elimination of pump stations, replacement of inefficient processes, and installation of automated systems will eventually repay the initial costs in O&M savings.

A total of $254 million has been included in the current 5-year CIP to implement these projects.

Additionally, needs have been identified that are beyond the 20-year planning horizon of the CIP but have been documented for long-term planning needs. These are primarily related to expected changes in regulations and permits that will require higher levels of nutrient treatment, the removal of micro-constituents (such as, personal care chemicals and pharmaceutical traces), and the eventual replacement or reconfiguration of the Morris Forman WQTC, MSD's largest and most valuable asset. The complete replacement or reconfiguration of the Morris Forman WQTC is not anticipated to be required during the 20-year planning horizon of the Critical Repair and Reinvestment Plan, but the road map to stepwise implementation will allow MSD to make short-term improvements that are consistent with the long-term vision for this facility.

5.1.1.4 Renewal and Replacements

A substantial portion of the Critical Repair and Reinvestment Plan's sewer system recommendations are focused on the timely, proactive renewal and replacement of assets to allow for the continued operation of the system at a high level of performance. Within the overall $254 million provided for in the sewer system capital program, specific recommendations and budgets have been established to create the following renewal and replacement projects:

- **WQTC Equipment Renewal and Replacement.** To plan and implement an orderly renewal and/or replacement of equipment at MSD's five regional WQTCs that does not disrupt operations, projects have been created to address equipment needs in 5-year intervals. This will allow for a phased approach to minimize stress on the treatment process while making certain that critical assets are replaced/renewed before their useful life is exhausted. A total of $38.7 million has been included in the current 5-year CIP for these projects at the Morris Forman WQTC, and $30.5 million included in the 5-year CIP for the other four regional WQTCs.
- **Pump Replacement Program**. Most MSD's pump stations are smaller stations intended to serve a limited area. Rather than allow these pumps to run to failure, guidelines for the proactive replacement of pumps before they exhibit deteriorated performance have been established and a budget determined for implementation. This will remove a substantial maintenance burden on staff to keep aged pumps operating. Funding for this program is included in the current 5-year CIP for a total of $1.5 million.
- **Major Interceptor Rehabilitation.** The backbone supports of MSD's wastewater collection system are the larger-diameter sewers that transport wastewater to the five regional WQTCs. Some interceptors that date back to the Civil War period are made of outdated materials, such as dry-laid brick, and are in highly developed, urban areas, which make maintenance activities challenging. MSD has recently completed the internal condition assessment of the major interceptors. A program has been developed to begin systematically rehabilitating this infrastructure over time, using risk-based criteria to prioritize improvements helping to ensure continued operation for the next 100-plus years. A total of $16 million has been included in the current 5-year CIP to begin implementing this program.

5.2 Consent Decree

In August 2005, MSD entered into a joint Consent Decree agreement with the federal government and the Commonwealth of Kentucky. The Consent Decree created the framework for a 19-year program to manage and mitigate combined sewer overflows (CSOs), and eliminates sanitary sewer overflows (up to a certain storm event). In 2009, the Consent Decree was amended to address recordkeeping and WQTC bypasses and treatment performance. For the purpose of this report the term "Consent Decree" will be used to refer to the Amended Consent Decree. If the August 2005 Consent Decree is being referred to, it will be referenced using the August 2005 date.

To meet the requirements of the Consent Decree, MSD developed the IAOP, which has been incorporated into the Critical Repair and Reinvestment Plan. Total capital costs for the Consent Decree in the next 5 years are anticipated to be $419.9 million. Key capital projects from the IOAP include:

- **CSO Storage Basins.** Large storage basins are under design or construction at strategic locations in MSD's combined sewer system to temporarily store flows during rain events. When capacity is available, these stored flows will be released back into the collection system for treatment. These basins are a foundation of MSD's CSO control strategy and must be operational by state and federally-enforced deadlines.
- **Green Infrastructure Projects.** Green infrastructure works by capturing stormwater flows in natural systems before they can enter the underground pipe network and thus creates additional capacity within the sewer system. Additionally, these systems remove pollutants through natural filtration systems so that any flows that must pass through them carry a reduced pollutant load. MSD is committed to integrating green infrastructure as part of its overflow control strategy, and has implemented an innovative system of cost-sharing with other public agencies and private developers to leverage MSD's investment in green infrastructure to the extent it furthers MSD's service offerings.
- **Capacity, Management, Operations and Maintenance (CMOM) Projects.** An essential component to the long-term success of the IOAP is an effective CMOM program that makes sure the wastewater collection system operates effectively. Elements of this program include capital investment, sewer inspection and cleaning, repair of defects found in sewers, and removal of illicit and illegal connections to the system.
- **Nine Minimum Controls (NMC) Projects**. Reporting requirements for the NMC program will be phased out after the completion of MSD's obligations under the Consent Decree. The NMC principles related to optimizing operation of the combined sewer system will remain in full force and effect, with the enforcement mechanism shifted from the Consent Decree to the Morris Forman WQTC discharge permit. One critical item that will continue after the IOAP is completed is the continued implementation and optimization of MSD's Real Time Control system that maximizes storage in the collection system through a series of automated dams and gates.

5.3 Total Proposed Capital Improvements

The Critical Repair and Reinvestment Plan scope was developed to identify long-term capital project needs and associated operating costs to improve and sustain the sewer, drainage, and Ohio River flood protection systems. The projects and programs required by the Consent Decree are required to be complete, as are any other projects needed for compliance with applicable regulations. Most of the recommendations of the Critical Repair and Reinvestment Plan are based on the community's desire for sustained reliability of service and improvements in the level of protection provided for stormwater drainage, floodplain management, and Ohio River flood protection. Implementation of these projects and programs depend on the community's willingness to fund the improvements. The Critical Repair and Reinvestment Plan recommendations represent a road map to achieve a reliable and consistent level of service across the County for all MSD's service offerings. The actual timing of recommended actions will be determined by the availability of funds to complete them.

Figure 5-1 provides an overview of the proposed road map of capital expenditures for the next 5 years. Table 5-1 summarizes the planned capital expenditure across each budget category and year for the first 5 years.

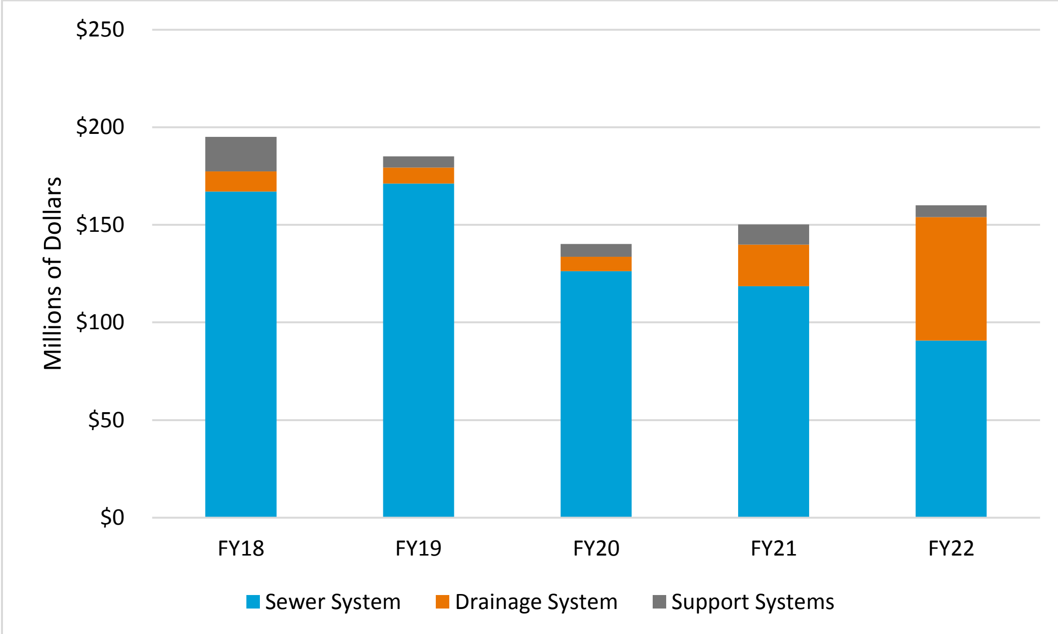


Figure 5-1. Planned Capital Expenditures Through FY 2022

Table 5-1. MSD FY2017–FY2021 Capital Improvement Plan

	FY18	FY19	FY20	FY21	FY22	Total
Sewer System						
CMOM	$22.0	$11.1	$26.5	$78.3	$62.8	**$200.8**
Consent Decree (IOAP)	$128.9	$153.6	$95.6	$32.9	$8.0	**$419.9**
Development	$1.1	$1.1	$1.1	$1.1	$6.2	**$10.6**
NMC	$15.1	$5.4	$2.2	$6.3	$13.7	**$42.6**
Total Sewer System Improvements	**$167.2**	**$171.2**	**$126.2**	**$118.6**	**$90.6**	**$673.9**
Drainage System						
Drainage	$2.8	$2.8	$2.8	$3.2	$20.2	**$31.8**
Floodplain Management	$0.4	$0.0	$0.0	$0.0	$0.0	**$0.4**
Ohio River Flood Protection	$4.8	$4.1	$2.7	$16.4	$40.3	**$68.3**
Stormwater Quality (MS4)	$2.3	$1.3	$1.8	$1.7	$2.7	**$9.7**
Total Drainage System Improvements	**$10.2**	**$8.2**	**$7.3**	**$21.3**	**$63.3**	**$110.3**
Support Systems						
Capital Equipment	$2.3	$1.8	$2.8	$2.8	$2.8	**$12.3**
Facilities	$14.3	$3.4	$3.0	$6.9	$2.3	**$29.9**
IT	$0.7	$0.3	$0.3	$0.3	$0.6	**$2.1**
LOJIC	$0.4	$0.1	$0.5	$0.3	$0.4	**$1.6**
Total Support System Improvements	**$17.6**	**$5.6**	**$6.5**	**$10.1**	**$6.1**	**$45.88**

SECTION 6

Financial Analysis

6.1 Financial Evaluation of the System

To evaluate the adequacy of planned rate increases in accordance with the requirements identified in the official statement, the bond covenants for the 2017 bonds stipulate that revenues for each fiscal year be at least sufficient:

- To equal 110 percent of the sum of principal and interest due on all issued and outstanding revenue bonds and indebtedness of the district for such fiscal year.
- To pay all operating expenses for such fiscal year.
- To pay and discharge all charges or liens payable out of revenues of MSD.

Based on the MSD rates effective August 1, 2016, projected rate increases for FY 2018–FY 2022, 2018 approved operating budget, projected operating expenses assuming 3 percent growth, debt service on the 2017A and 2017B bonds, and anticipated future bond issues to fund the adopted CIP, the debt service coverage ratio (DSCR) for FY 2017 to FY 2022 is greater than the required DSCR of 110 percent. Based on potential rate increases, revenues are expected to meet the projected revenue requirements for debt service coverage. The typical residential combined sewer and drainage bill for FY 2017 is approximately $52.50 per month. The typical residential sewer bill (excluding drainage) for MSD for FY 2017 is approximately $43.84 per month. With the assumed 6.9 percent rate increase (effective August 1, 2017), the typical residential combined sewer and drainage bill for FY 2018 is estimated to be $56.13. The typical residential sewer bill (excluding drainage) for MSD for FY 2018 is approximately $46.87 per month.

6.2 Customer and Usage Growth

There are 254,758 customers and 302,000 service connections (meters) within MSD's service area. Some customers have more than one meter. Figure 6-1 provides a historical summary for the total number of customer connections. The customer base within MSD's service area is predominately residential. Figure 6-2 shows the breakdown of the number of meters by customer class for FY 2016. Approximately 90 percent of the meters are residential and 10 percent commercial. Less than 1 percent of the meters are industrial. The meters within MSD's service area are predominately less than 1-inch connections. (that is, 5/8-inch, 3/4-inch, or 5/8-inch by 3/4-inch). Figure 6-3 shows the breakdown of the number of meters by connection size for FY 2016. While the number of meters is predominantly residential, water consumption and sewer flows are predominantly from commercial and industrial customers. Figure 6-4 shows the historical trend and breakdown in water consumption from 1985 to 2016. The 10-year (2007 to 2016) trend in water consumption has been a 2.4 percent annual rate of decline. Water consumption patterns for the past 3 years shows a leveling off in the historical rate of decline.

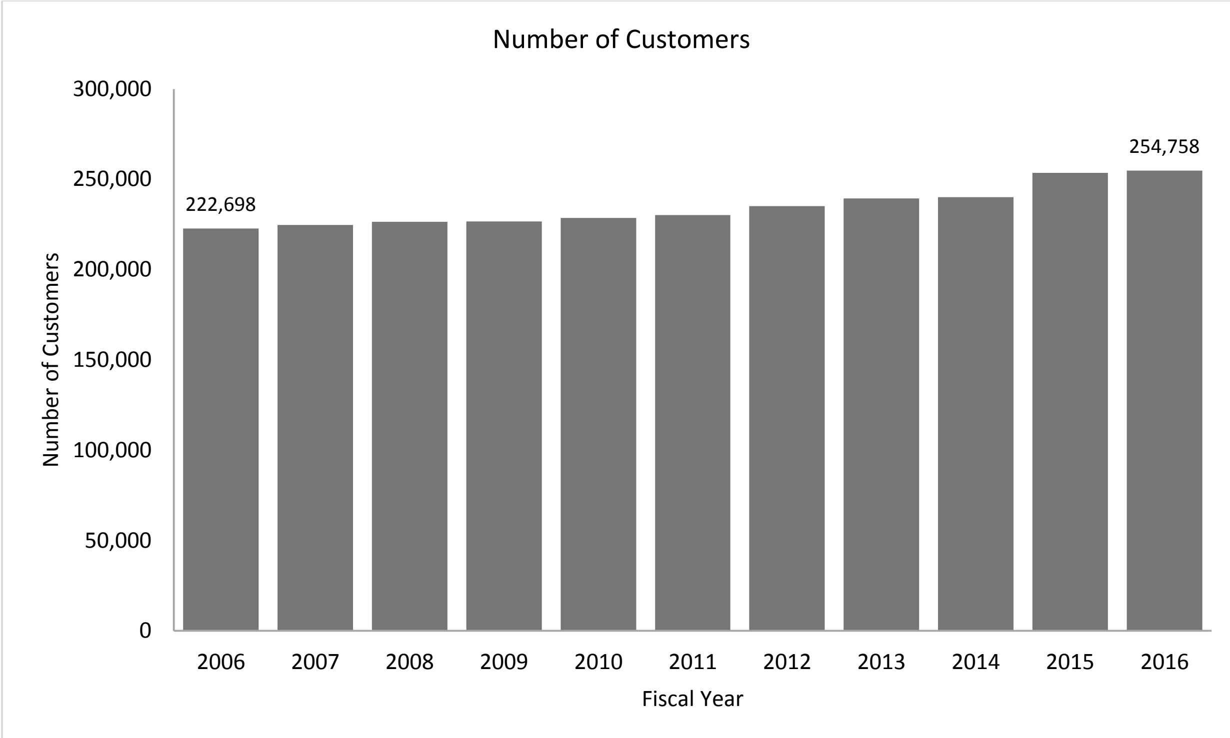


Figure 6-1. Estimated Number of Customers (FY 2006–FY 2016)

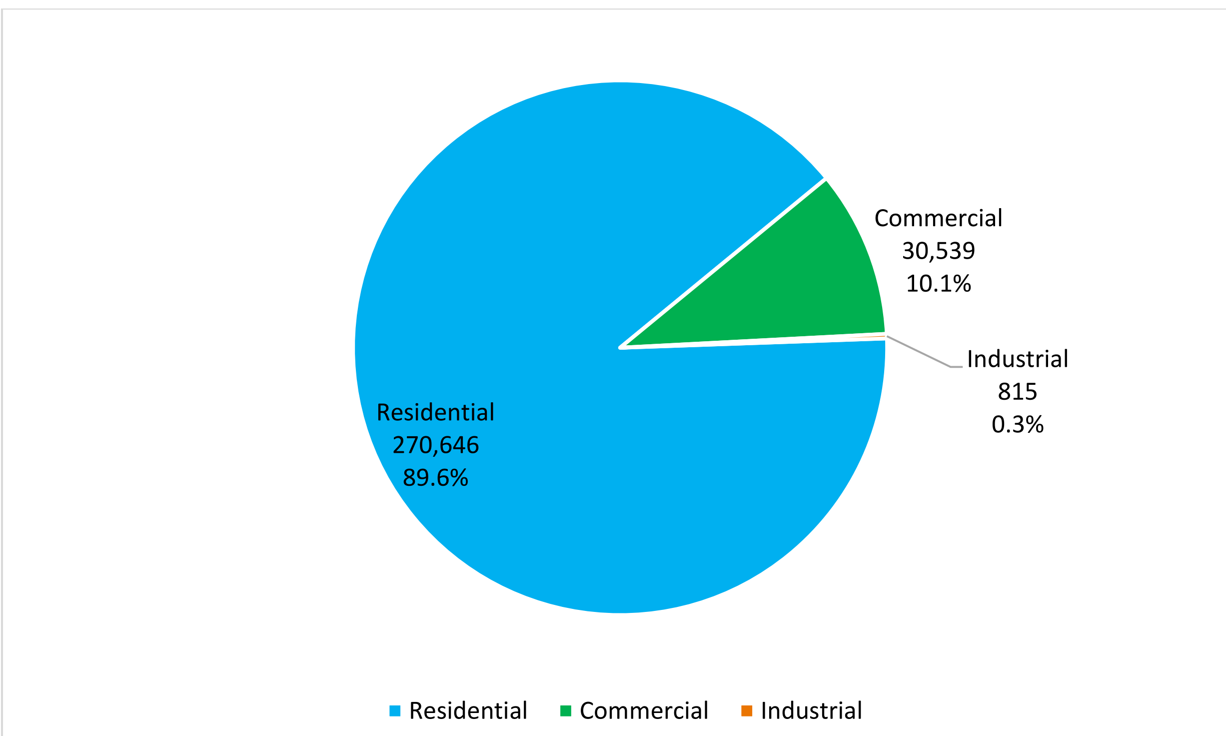


Figure 6-2. Estimated Number of Meters (FY 2016) by Customer Class

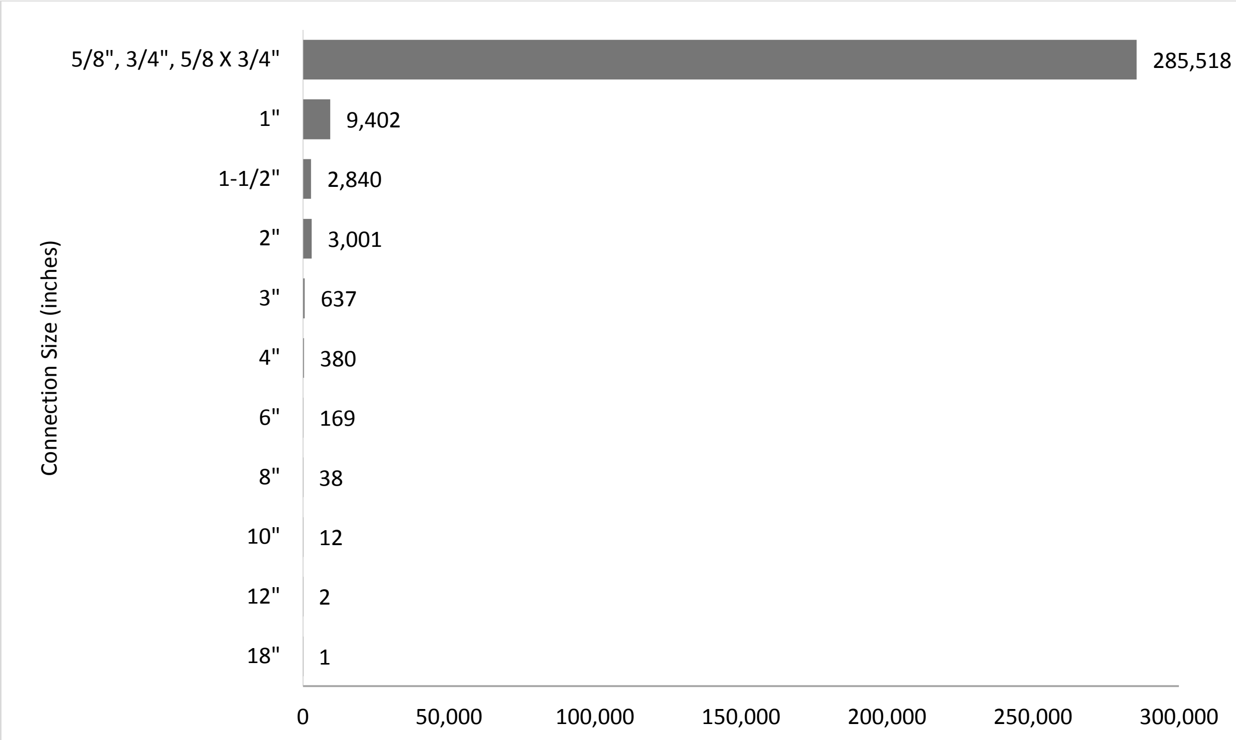


Figure 6-3. Estimated Number of Meters (FY 2016) by Connection Size

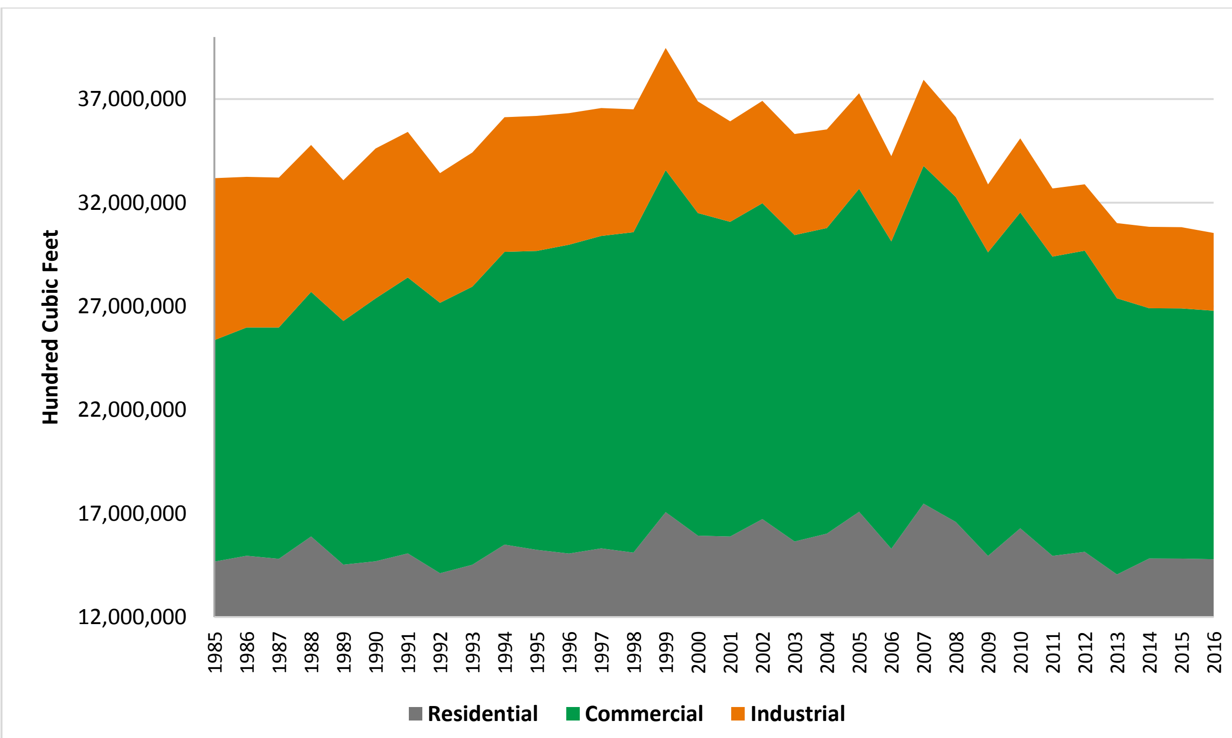


Figure 6-4. Billed Water Consumption (CCF) from 1985–2016

6.3 Billing and Collection

LWC provides billing and revenue collection services for MSD and bills their customers on a monthly or a bimonthly basis. Figure 6-5 shows the breakdown of customers that are bimonthly (89 percent) versus monthly (11 percent). Table 6-1 provides a tabular summary of bill frequency by customer class for FY 2016.

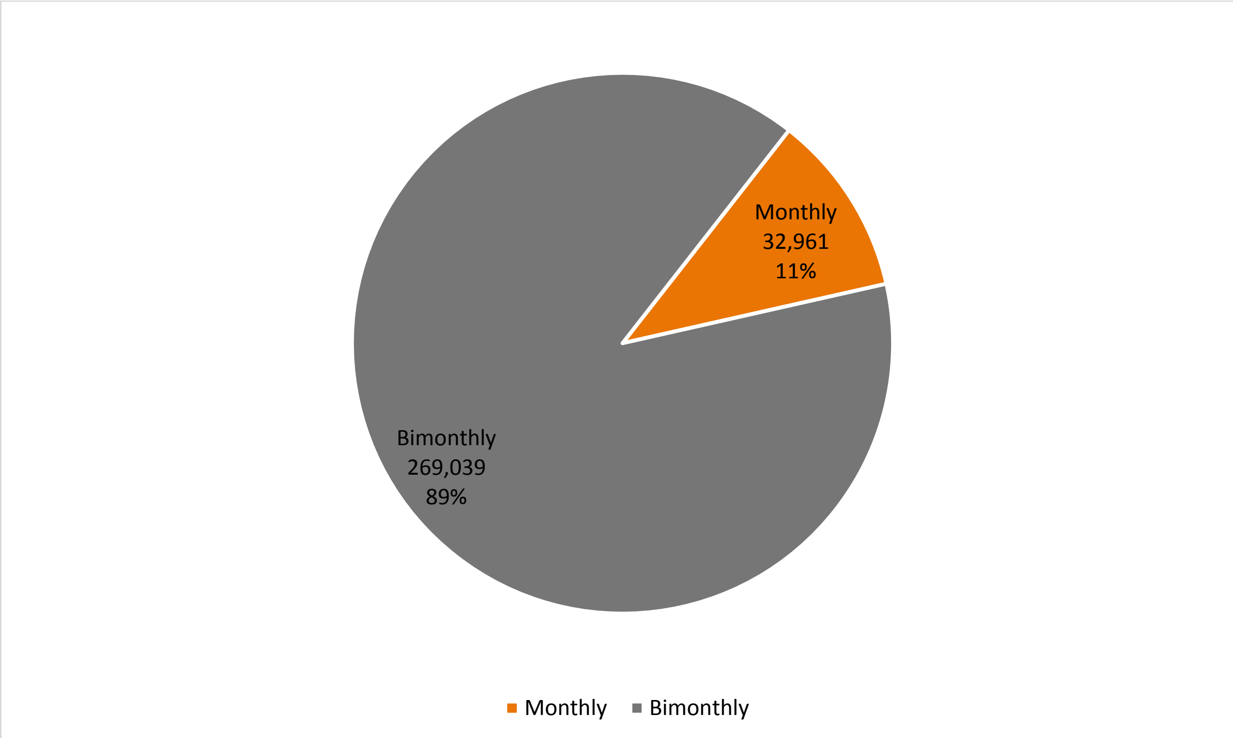


Figure 6-5. Estimated Number of Meters (FY 2016) by Billing Frequency

Table 6-1. Estimated Number of Meters by Bill Frequency by Customer Class (FY 2016)

Customer Class	Monthly	Percent	Bimonthly	Percent	Total
Residential	29,179	11%	241,467	89%	270,646
Commercial	3,346	11%	27,193	89%	30,539
Industrial	436	53%	379	47%	815
Total	**32,961**	**11%**	**269,039**	**89%**	**302,000**

6.4 Top 10 Customers

Figure 6-6 provides a historical summary of the percent of total billed wastewater service to total sales for the top 10 customers. Since FY 2008, the percentages for wastewater sales to those customers decreased from approximately 12 percent to 6.5 percent. The percentages for drainage (stormwater) sales to the top drainage customers decreased from 9 percent in FY 2008 to 6.7 percent in FY 2016. Table 6-2 provides a list of the top customers for billed wastewater sales. Table 6-3 lists the top customers for billed drainage (stormwater) sales. The top wastewater customers include distilleries, chemical manufacturers, auto manufacturing, and shipping. The top drainage customers include the Airport Authority, a shipping company, the Jefferson County Board of Education, and an auto manufacturer.

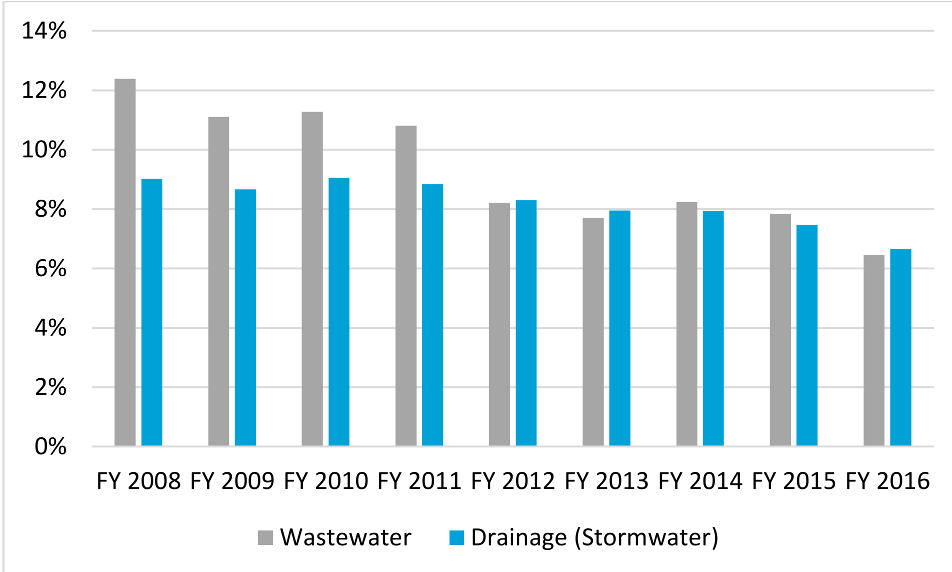


Figure 6-6. Top 10 Customers: Percent of Billed to Total Sales

Table 6-2. Top 10 Billed Wastewater Customers

Customer	FY 2016 Wastewater Billed	Percent of Total
Lubrizol Advanced Material	$ 2,619,739	1.43%
Heaven Hill Distilleries	$ 2,238,317	1.22%
Ford Motor Company	$ 1,437,109	0.78%
Early Times Distillery	$ 1,280,739	0.70%
General Electric	$ 1,126,387	0.61%
Swift Pork Company	$ 921,314	0.50%
UPS	$ 646,401	0.35%
Rohm & Haas	$ 550,815	0.30%
Louisville Metro Housing Authority	$ 513,223	0.28%
Parallel Products	$ 499,133	0.27%
Total	$ 11,833,177	6.45%

Source: Louisville MSD FY 2016 Comprehensive Annual Financial Report.

Table 6-3. Top 10 Billed Drainage (Stormwater) Customers

Customer	FY 2016 Drainage (Stormwater) Billed	Percent of Total
Regional Airport Authority	$ 1,282,627	2.34%
UPS	$ 571,955	1.04%
Ford Motor Co	$ 412,279	0.75%
Lit Industrial Limited Partner	$ 260,106	0.47%
Kentucky State Fair	$ 221,565	0.40%
Seaboard System	$ 220,606	0.40%
The University of Louisville Campus	$ 199,824	0.36%
Louisville Jefferson County Redevelopment Authority	$ 172,925	0.32%
UPS Supply Chain	$ 163,223	0.30%
Norfolk Southern	$ 145,622	0.27%
Total	$ 3,650,733	6.65%

Source: Louisville MSD FY 2016 Comprehensive Annual Financial Report.

6.5 Historical and Projected Costs and Revenues

Table 6-4 provides a tabular summary of historical and projected operating costs. The increase in operating costs in FY 2016 is mostly attributed to a flood at the Morris Forman WQTC that resulted in approximately $9 million in repairs and upgrades to the plant. MSD has or anticipates recovering a total of $6 million of these costs through insurance. The FY 2017 operating budget is projected to be $117.28 million, which is a slight increase above the FY 2016 budget. Note that the $117.28 million does not include a $5 million Contingency Reserve that MSD budgets for emergencies. For planning purposes, operating cost projections assume 3 percent annual rate of growth.

Table 6-5 provides a tabular summary of the debt service for senior obligations through FY 2022, before refunding obligations as part of the Series 2017B bonds. The debt service amounts for Series 2009C and 2010A bonds excludes Build America Bonds (BAB) refunds, which are accounted for as investment income.

Table 6-6 provides a tabular summary of historical and projected revenues. Available revenues include operating and non-operating revenues.

Table 6-7 provides a tabular summary of operating costs, debt service (after refunding by Series 2017B bonds), and revenues. MSD plans to structure future bond issues to maintain a level aggregate debt service, while maintaining full compliance with MSD's Bond Covenants. The Projected Debt Service estimates in Table 6-5 reflect this strategy. Based on the projected costs and revenues, the debt service coverage ratio is above the 110 percent required by the Bond Covenants stipulated in the bond document.

Table 6-4. Historical and Projected Operating Costs (Millions of Dollars)

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Operating Expenses[a]	**Actual[b]**	**Actual[b]**	**Actual[b]**	**Forecast[c]**	**Budget[d]**	**Projected[e]**	**Projected[e]**	**Projected[e]**	**Projected[e]**
Labor	$57.25	$54.38	$55.23	$56.80	$59.53	$61.31	$63.15	$65.04	$67.00
Utilities	$14.56	$13.82	$18.26	$14.31	$14.74	$15.18	$15.63	$16.10	$16.59
Materials and supplies	$8.15	$9.71	$4.18	$4.81	$7.63	$7.86	$8.10	$8.34	$8.59
Professional services	$1.93	$2.84	$4.17	$11.44	$18.58	$19.13	$19.71	$20.30	$20.91
Maintenance and repairs	$9.10	$7.92	$10.01	$6.11	$5.75	$5.92	$6.10	$6.28	$6.47
Billing and collections	$4.10	$4.33	$4.85	$5.34	$5.68	$5.85	$6.02	$6.21	$6.39
Chemicals	$3.31	$3.40	$3.66	$5.26	$4.17	$4.30	$4.43	$4.56	$4.70
Fuel	$1.84	$1.89	$2.04	$1.15	$1.31	$1.35	$1.39	$1.43	$1.48
Biosolids disposal	$1.80	$1.97	$2.25	$2.46	$2.22	$2.28	$2.35	$2.42	$2.50
All other	$7.24	$6.52	$13.96	$9.59	$6.03	$6.21	$6.39	$6.58	$6.78
Total operating expenses	**$109.26**	**$106.77**	**$118.60**	**$117.28**	**$125.62**	**$129.39**	**$133.27**	**$137.27**	**$141.39**
Percent change	-	**-2%**	**11%**	**-1%**	**7%**	**3%**	**3%**	**3%**	**3%**

Notes:
a. Does not include $5 million Contingency Reserve
b. Louisville MSD FY 2016 Comprehensive Annual Financial Report
c. Louisville MSD March 2017 Financial Report
d. Louisville MSD 2018 Approved Budget
e. Assumes 3 percent inflation

Table 6-5. Debt Service for Senior Obligations Prior to Series 2017 Refunding (Millions of Dollars)

Senior Obligations	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	FY 2017 Forecast	FY 2018 Budget	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected
Series 2006A	--	--	$2.20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Series 2007A	--	--	$3.68	$3.68	$3.67	$3.77	$3.66	$3.67	$3.65
Series 2008A	--	--	$6.51	$5.00	$4.99	$2.69	$2.69	$2.69	$2.69
Series 2009A	--	--	$8.16	$7.05	$7.05	$6.97	$0.00	$0.00	$0.00
Series 2009B	--	--	$22.33	$20.00	$20.24	$20.47	$9.72	$9.83	$9.96
Series 2009C	--	--	$10.76	$10.76	$10.76	$10.76	$10.76	$10.76	$10.76
Series 2010A	--	--	$20.63	$20.63	$20.63	$20.63	$20.63	$20.63	$20.63
Series 2011A	--	--	$14.62	$14.61	$14.57	$14.55	$14.53	$14.52	$14.50
Series 2013A (Ref 2001A)	--	--	$4.63	$4.63	$4.63	$4.63	$4.63	$4.63	$4.63
Series 2013B (Ref 2004A & partial 2005A)	----	--	$6.34	$6.33	$6.34	$6.33	$6.34	$6.34	$6.35
Series 2013C	----	--	$4.74	$4.74	$4.73	$4.73	$4.72	$4.72	$4.72
Series 2014A	----	--	$3.43	$3.43	$3.43	$3.43	$3.43	$3.42	$3.42
Series 2015A	----	--	$4.03	$7.83	$7.62	$7.43	$7.24	$8.01	$7.76
Series 2015B (Ref 2006A)	--	--	$2.29	$5.58	$5.60	$5.60	$5.60	$5.60	$5.60
Series 2016A	--	--	$0.00	$3.38	$5.01	$4.99	$4.99	$5.61	$5.61
Series 2016B (Refund 2008A)	--	--	$0.00	$1.04	$1.14	$3.41	$2.94	$2.89	$2.89
Series 2016C (Refund 2009A and 2009B)	--	--	$0.00	$2.40	$3.38	$3.38	$20.55	$20.74	$20.93
Total	**$109.10**	**$112.10**	**$114.36**	**$121.08**	**$123.81**	**$123.79**	**$122.43**	**$124.08**	**$124.09**

Table 6-6. Historical and Projected Revenues for FY 2014–FY 2022 (Millions of Dollars)

	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	FY 2017 Forecast	FY 2018 Budget	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 20222 Projected
Rate Increase:	*5.8%*	*5.5%*	*5.5%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*	*6.9%*
Operating Revenues									
Wastewater service charges[a]	$165.60	$173.90	$183.59	$196.50	$208.02	$220.23	$233.14	$246.82	$261.29
Stormwater service charges[b]	$48.50	$51.60	$54.89	$59.30	$63.31	$67.59	$72.16	$77.04	$82.25
Other operating income	$2.60	$4.40	$4.81	$4.20	$4.25	$4.25	$4.25	$4.25	$4.25
Total Operating Revenues	**$216.70**	**$229.90**	**$243.29**	**$260.00**	**$275.58**	**$292.07**	**$309.55**	**$328.11**	**$347.79**
Percent Change	3%	6%	6%	7%	6%	6%	6%	6%	6%
Non-Operating Revenues (expenses)									
Assessments	$2.10	$1.90	$9.46	$3.40	$2.00	$2.00	$2.00	$2.00	$2.00
Investment Income	$10.20	$7.50	$6.95	$7.17	$7.45	$7.87	$8.19	$8.52	$8.86
BAB Refund	$10.10	$10.10	$10.33	$10.24	$10.99	$10.99	$10.99	$10.99	$10.99
Capitalized Investment Income	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Non-Operating Revenues	**$22.40**	**$19.50**	**$26.73**	**$20.80**	**$20.44**	**$20.86**	**$21.18**	**$21.50**	**$21.84**
Total Available Revenues	**$239.10**	**$249.40**	**$270.02**	**$280.80**	**$296.02**	**$312.93**	**$330.73**	**$349.61**	**$369.64**

Notes:

a. Assumes 85 percent adjustment/elasticity factor for FY 2018 to FY 2022.

b. Assumes 98 percent adjustment/elasticity factor for FY 2018 to FY 2022.

Table 6-7. *Pro Forma* Summary for FY 2013–FY 2021 (Millions of Dollars)

	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	FY 2017 Forecast	FY 2018 Budget	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected
Rate Increase:	*5.80%*	*5.50%*	*5.50%*	*6.90%*	*6.90%*	*6.90%*	*6.90%*	*6.90%*	*6.90%*
Operating Revenues	$216.70	$229.90	$243.29	$260.00	$275.58	$292.07	$309.55	$328.11	$347.79
Non-Operating Revenues (expenses)	$22.40	$19.50	$26.73	$20.80	$20.44	$20.86	$21.18	$21.50	$21.84
Total Available Revenues	**$239.10**	**$249.40**	**$270.02**	**$280.80**	**$296.02**	**$312.93**	**$330.73**	**$349.61**	**$369.64**
Operating Expenses	$109.26	$106.77	$118.60	$117.28	$125.62	$129.39	$133.27	$137.27	$141.39
Capitalized Cost	($33.57)	($30.06)	($30.52)	($30.38)	($32.66)	($33.64)	($33.32)	($32.94)	($32.52)
Net Operating Expense	**$75.69**	**$76.71**	**$88.08**	**$86.89**	**$92.96**	**$95.75**	**$99.95**	**$104.32**	**$108.87**
Revenues Available for Debt Service and Capital Expenditures	$163.41	$172.69	$181.94	$193.91	$203.06	$217.18	$230.78	$245.29	$260.77
Debt Service (Principal and Interest)									
Existing Senior Obligations[a]	$109.10	$112.10	$114.36	$121.08	$120.14	$120.02	$118.77	$120.41	$120.44
Series 2007A (portion not refunded by 2017B)	–	–	–	–	–	–	–	–	–
Projected Series 2017A (new money)	–	–	–	–	$5.97	$13.49	$14.85	$13.21	$13.20
Projected Series 2017B (refunding)	–	–	–	–	$2.89	$2.99	$2.88	$2.88	$2.86
Projected Debt Service to Fund FY18-FY22 CIP[b]	–	–	–	–	–	$3.94	$14.29	$23.25	$30.44
Total Senior Obligations	**$109.10**	**$112.10**	**$114.36**	**$121.08**	**$129.00**	**$140.44**	**$150.79**	**$159.75**	**$166.95**
Subordinate	$15.00	$14.30	$14.30	$13.58	$13.58	$14.08	$14.08	$14.08	$14.08
Capitalized Interest	($26.36)	($19.10)	($20.51)	($19.59)	($20.93)	($19.93)	($20.62)	($21.06)	($21.43)
Total Debt Service	$97.74	$107.30	$108.15	$115.07	$121.64	$134.59	$144.25	$152.77	$159.59
Debt Service Coverage Ratio[c]									
Senior Obligations	1.63	1.84	1.88	1.91	1.88	1.80	1.77	1.77	1.79
Senior and Subordinate Obligations	1.41	1.59	1.63	1.69	1.67	1.61	1.60	1.61	1.63
Annual Change in Working Capital				$2.90	$14.75	$0.05	$5.39	$2.55	$2.33
Year-end Working Capital				$87.87	$102.62	$102.67	$108.06	$110.61	$112.95
Equity (cash) Funded CIP				$0	$28.08	$43.25	$45.70	$55.70	$65.50

Notes:

Red numbers in parentheses are negative numbers.
a. Gross of BAB Refund, which are included in non-operating revenues. Does not include Series 2007A
b. Estimated based on anticipated bond structure strategy
c. Coverage Ratio calculated in accordance with Bond Covenant approach

6.6 Projected Debt Issues and Coverage

6.6.1 Prior Bond and Bond Anticipation Note Issues

From its inception, MSD has maintained a schedule of rates, rentals, and charges to produce revenue sufficient to finance the operation, maintenance, repair, and expansion of the System. Revenue bonds were issued in 1949, 1952, 1954, 1956, 1960, and 1965 pursuant to a resolution adopted on July 7, 1949, (the "1949 Bond Resolution") to provide capital for system expansion. Under a resolution adopted on June 7, 1971, (the "1971 Bond Resolution"), bonds were issued to finance water quality treatment plant improvements. Two series of bonds were issued in 1989 under the 1971 Bond Resolution ("Bond Resolution") to refund issues outstanding under the 1949 and 1971 Bond Resolutions and to finance both sewer system expansion and drainage improvements.

The purpose of the Bond Resolution was to create one new revenue bond resolution that would provide MSD needed flexibility for funding capital projects associated with wastewater and stormwater drainage services. The Series 1993 Bonds were structured to achieve level debt service during the remaining 26 years of MSD's outstanding debt. MSD had approximately $158.3 million in bonds and other long-term debt outstanding at the time of issuance of the Series 1993 Bonds. MSD was intent on creating a unified planning, financing, development, and management framework to promote more efficient and effective use of its capital and operating funds. Consolidating all existing non-operating funds created one "Construction and Acquisition Fund." One "Revenue Fund" was created to receive all MSD revenue and income.

MSD has heretofore issued under the Bond Resolution, its System Revenue Bonds outstanding in the amounts shown on Table 6-8.

Table 6-8. MSD Outstanding Bonds[a]

Series	Issue Date	Original Principal Amount	Principal Amount Outstanding[a]
Series 2007A[b]	November 15, 2007	$61,125,000	$42,965,000
Series 2008A[c]	May 1, 2008	$105,000,000	$65,520,000
Series 2009A[d]	May 15, 2009	$76,275,000	$13,040,000
Series 2009B[e]	August 15, 2009	$225,770,000	$69,725,000
Series 2009C	November 24, 2009	$180,000,000	$180,000,000
Series 2010A	November 30, 2010	$330,000,000	$330,000,000
Series 2011A	August 24, 2011	$263,360,000	$252,610,000
Series 2013A	May 23, 2013	$115,790,000	$115,790,000
Series 2013B	May 23, 2013	$119,515,000	$116,940,000
Series 2013C	November 27, 2013	$100,000,000	$99,625,000
Series 2014A	November 25, 2014	$80,000,000	$79,900,000
Series 2015A	October 21, 2015	$175,000,000	$174,280,000
Series 2015B	October 21, 2015	$81,750,000	$79,085,000
Series 2016A	August 30, 2016,	$150,000,000	$150,000,000
Series 2016B	August 30, 2016,	$ 28,315,000	$28,095,000
Series 2016C	August 30, 2016,	$67,685,000	$67,685,000
Total		**$2,159,585,000**	**$1,865,260,000**

Note:
a. As of July 1, 2017 – Updated July 21, 2017
b. The remaining principle amount will be refunded by the Series 2017B Bonds
c. Principle maturities from May 15, 2019, through May 15, 2036, were refunded with Series 2016B Bonds
d. A portion of principle maturities from May 15 2020, through May 15, 2022, were refunded with series 2016C Bonds
e. A portion of principle maturities from May 15 2020, through May 15, 2023, were refunded with series 2016C Bonds

The following describes the purpose of the Revenue Bonds:

- 2007A Revenue Bonds refunded certain of MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 1997B.
- 2008A Revenue Bonds financed MSD's Capital Improvement Program (CIP).
- 2009A Revenue Bonds refunded a portion of MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 1998A.
- 2009B Revenue Bonds refunded certain of MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 1999A, Series 2003A, and Series 2003B.
- Series 2009C Revenue Bonds funded sewer and drainage projects of MSD's CIP that were approved for construction.
- Series 2010A Revenue Bonds funded obligations contained in MSD's Consent Decree, in addition to other initiatives including Project DRI, the Western Flood Pumping Station rehabilitation, WQTC modifications, sewer assessments, and capital equipment purchases, and to fund a debt service reserve account in an amount not to exceed $30 million.
- Series 2011A Bonds refunded a portion of MSD's outstanding Series 2001A Bonds and Series 1998A Bonds.
- Series 2013A Bonds refunded MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 2001A.
- Series 2013B Bonds refunded MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 2004A and certain MSD's outstanding Sewer and Drainage System Revenue Bonds, Series 2005A Bonds.
- Series 2013C Bonds financed MSD's CIP.
- Series 2014A Bond issue financed MSD's CIP.
- Series 2015A Bond issue financed MSD's CIP
- Series 2015B Bond issue refunded Series 2006A bonds, in advance of maturity.
- Series 2016A Bond paid for improvements to the MSD's sewer and drainage system including: wastewater and drainage system expansion and improvements; improvements to wastewater treatment facilities; rehabilitation of combined sewer overflow systems; improvements to flood control and drainage facilities; drainage and MSD improvements; construction of collector sewers; construction and improvements of detention and retention basins; construction of interceptor sewers; combined sewer overflow and sanitary overflow abatement projects; construction and improvements to force mains; repairs and improvements to District pumping stations; construction of regional storage facilities; and miscellaneous improvements and acquisition of equipment and mapping hardware and software.
- Series 2016B Bond issue refunded in advance Series 2008A maturing May 15, 2019 through May 15, 2036.
- Series 2016C Bond refunded in advance Series 2009A maturing May 15, 2020 through May 15, 2022 and a portion of the outstanding principal amount of Series 2009B maturing May 15, 2020 through May 15, 2023.

6.6.2 Series 2017 Bonds

The projected debt issuances include two Series: 2017A and 2017B. These are senior obligations and are being issued on parity with other senior obligations outstanding. Series 2017A bond proceeds will be used for improvements to the sewer and drainage system. Series 2017B bond proceeds will be used to refund maturities May 15, 2018, and thereafter of the Series 2007A Bonds. Table 6-9 summarizes the annual debt service for the Series 2017A and 2017B bonds, which are included as line items in Table 6-7.

Based on the assumptions previously listed, Table 6-10 summarizes the capital requirements based on the current 5-year CIP (FY 2017–FY 2022), including the projected equity-funded portion of the CIP and the projected debt service for the bond funded portion of the CIP. MSD plans to structure future bond issues to maintain a level aggregate debt service while maintaining full compliance with MSD's Bond Covenants. The equity funded CIP and projected debt service are included as line items in Table 6-7.

Table 6-9. Debt Service for Series 2017A, 2017B Bonds

	Item 1	Item 2	Item 3	Item 4	Item 5
Fiscal Year	**Current Payments for 2007A**	**Estimated Annual Payments for 2017B**	**Total Annual Payments from Refunding (Item 2)**	**Projected Annual Savings of Refinancing (Item 1 minus Item 3)**	**Estimated Annual Payments for 2017A**
2018	$3,673,250	$2,887,688	$2,887,688	$785,562	$5,971,349
2019	$3,772,000	$2,990,175	$2,990,175	$781,825	$13,490,598
2020	$3,662,000	$2,879,600	$2,879,600	$782,400	$14,849,098
2021	$3,668,250	$2,884,200	$2,884,200	$784,050	$13,210,348
2022	$3,645,000	$2,861,400	$2,861,400	$783,600	$13,200,098
2023	$3,723,500	$2,942,200	$2,942,200	$781,300	$12,590,098
2024	$19,448,500	$18,662,400	$18,662,400	$786,100	$11,649,598
2025	$15,377,250	$14,591,200	$14,591,200	$786,050	$11,615,848
2026	--	--	--	--	$11,605,098
2027	--	--	--	--	$10,810,598
2028	--	--	--	--	$7,965,848
2029	--	--	--	--	$7,864,598
2030	--	--	--	--	$7,845,498
2031	--	--	--	--	$7,791,698
2032	--	--	--	--	$7,533,723
2033	--	--	--	--	$7,470,998
2034	--	--	--	--	$6,591,998
2035	--	--	--	--	$6,593,398
2036	--	--	--	--	$6,511,960
2037	--	--	--	--	$6,064,560
2038	--	--	--	--	$6,001,360
2039	--	--	--	--	$4,637,560
2040	--	--	--	--	$4,478,105
2041	--	--	--	--	$4,454,240
2042	--	--	--	--	$4,405,375
2043	--	--	--	--	$4,232,585
2044	--	--	--	--	$14,906,245
2045	--	--	--	--	$14,735,235
2046	--	--	--	--	$14,571,110
2047	--	--	--	--	$33,588,010
2048	--	--	--	--	$24,875,550
Total	**$60,651,000**	**$50,698,863**	**$50,698,863**	**$6,270,887**	**$322,112,376**

Table 6-10. Projected Capital Requirements and Debt Service for Approved CIP 2017-2021 (Millions of Dollars)

		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Consent Decree (IOAP)		$128.9	$153.6	$96.5	$32.9	$8.0
NMC		$15.1	$5.4	$2.2	$6.3	$13.7
CMOM		$22.0	$11.1	$26.5	$78.3	$62.8
Development		$1.1	$1.1	$1.1	$1.1	$6.2
Drainage		$2.8	$2.8	$2.8	$3.2	$20.2
Floodplain Management		$0.4	$0	$0	$0	$0
Stormwater Quality (MS4)		$2.3	$1.3	$1.8	$1.7	$2.7
Ohio River Flood Protection		$4.8	$4.1	$2.7	$16.4	$40.3
Capital Equipment		$2.3	$1.8	$2.8	$2.8	$2.8
Facilities		$14.3	$3.4	$3.0	$6.9	$2.3
IT		$0.7	$0.3	$0.3	$0.3	$0.6
LOJIC		$0.4	$0.1	$0.5	$0.3	$0.4
Total (2017 Dollars)		**$195.1**	**$185**	**$140.2**	**$150.2**	**$160**
Equity Funded (Percent)		14%	23%	33%	37%	41%
Bond Funded (Percent)		86%	77%	67%	63%	59%
Equity Funded CIP		$28.08	$43.25	$45.7	$55.7	$65.5
Bond Funded CIP		$167.02	$141.75	$94.5	$94.5	$94.5
Cost of Issuance (COI) (1.5% of projected bond amount)*		$3.9	$2.25	$1.5	$1.5	$1.5
Change in Bond Reserve (4% of projected bond amount)*		$4	$6	$4	$4	$4
Projected Par Value		$175	$150	$100	$100	$100
Projected Debt Service						
Series 2017A	4.11%	$6.0	$13.5	$14.9	$13.2	$13.2
Series 2017B	4.11%	$2.9	$3.0	$2.9	$2.9	$2.9
Series 2018	4.5%		$3.9	$11.7	$12.9	$11.5
Series 2019	4.5%			$2.6	$7.8	$8.6
Series 2020	4.5%				$2.6	$7.8
Series 2021	4.5%					$2.6
Total estimated debt service		**$8.9**	**$20.4**	**$32.0**	**$39.4**	**$46.5**

* FY 2018 amounts based on 2017A MSD POS Numbers (Updated 4.21.17). Projections based on percent of projected par value of future bond issue

Figure 6-7 provides a graphical summary of the debt service coverage ratios including the proposed Series 2017 A & B bonds and projected debt service on future anticipated bonds to fund planned capital expenditures in FY2017 to FY 202 (based on the 5-year CIP).

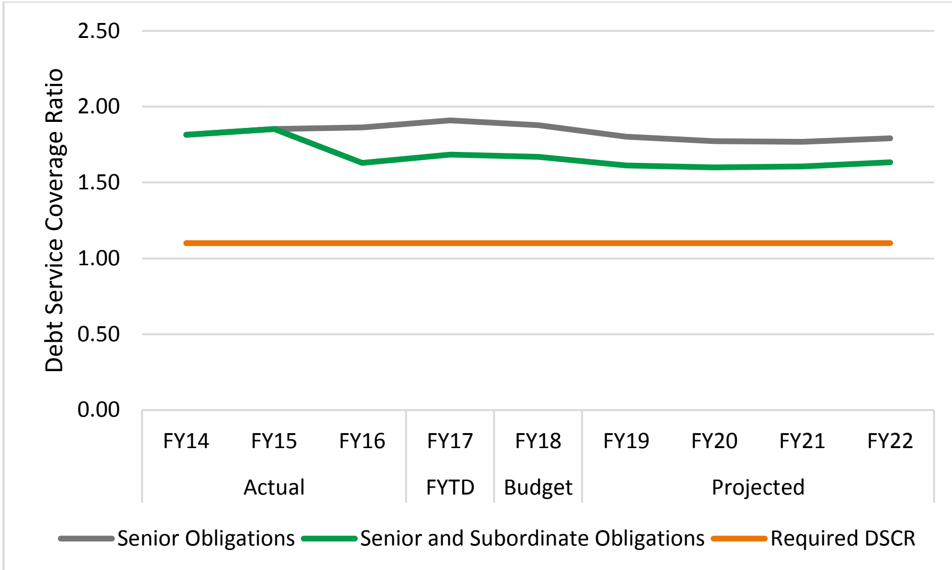


Figure 6-7. Historical and Projected Debt Service Coverage Ratio

6.7 Drainage and Sewer Rates

The MSD Board has been delegated the responsibility for establishing MSD's rates rentals and charges. The MSD Board can authorize rate increases of up to 7 percent in any 12-month period. Metro Ordinance Section 50.24, Debt Service Adjustments, requires Metro Council notification for any proposed rate increase greater than 4 percent, and Metro Council approval for any rate increase generating revenues greater than 7 percent. The 6.9-percent rate increase proposed for FY 2017 was presented to the Metro Council Budget Committee on June 15, 2016, in accordance with this ordinance. MSD has presented the results of an extensive public outreach program to the MSD Board in support of a proposed 20-percent rate increase for FY 2018. The MSD Board approved this rate increase on May 22, 2017. The MSD Board-approved increase is greater than the 6.9 percent increase that the MSD Board can authorize without approval from the Louisville Metro Council. MSD is planning to present the 20 percent increase for Metro Council approval. Since approval is not certain at the time of this report preparation, all the revenue and cost information presented herein have been based on an assumed FY 2018 rate increase of 6.9 percent, the amount that the MSD Board can implement without needing Metro Council approval. If a rate increase greater than 6.9 percent is approved by Metro Council, it will have an immediate and positive impact on all the financial parameters presented in this report.

MSD's rates, rentals, and charges for wastewater and drainage service recognize several parameters, including the following:

- Connection (meter) size
- Customer class
- Regular (domestic strength) flows
- Optional (clean) flows
- Excess strength flows
- Sewer-only service
- Impervious area

Table 6-11 lists the wastewater service charge schedule (effective August 1, 2016 and assumed rates effective August 1, 2017, reflecting a 6.9% rate increase for FY 2018) for the MSD service area. The service charge is a monthly or bimonthly charge based on meter size.

Table 6-11. Wastewater Service Charges

Meter Size (inches)	Monthly Billing ($/bill) (Effective 8/1/2016)	Monthly Billing ($/bill) (Assumed 6.9% increases effective 8/1/2017)	Bimonthly Billing ($/bill) (Effective 8/1/2016)	Bimonthly Billing ($/bill) (Assumed 6.9% increases effective 8/1/2017)
Residential				
⅝ or ¾	$13.78	$14.73	$27.56	$29.46
1	$27.68	$29.59	$55.35	$59.17
1.5	$46.05	$49.23	$92.09	$98.44
2	$63.15	$67.51	$126.30	$135.01
3	$140.78	$150.49	$281.56	$300.99
4	$227.62	$243.33	$455.24	$486.65
Commercial / Industrial				
⅝ or ¾	$21.16	$22.62	$27.56	$29.46
1	$36.89	$39.44	$55.35	$59.17
1.5	$55.35	$59.17	$92.09	$98.44
2	$71.08	$75.98	$126.30	$135.01
3	$150.33	$160.70	$281.56	$300.99
4	$236.88	$253.22	$455.24	$486.65
6	$455.16	$486.57	$894.54	$956.26
8	$684.10	$731.30	$1,341.84	$1,434.43
10	$894.54	$956.26	$1,762.86	$1,884.50
12	$1,298.73	$1,388.34	$2,597.46	$2,776.68
15 or 16	$1,574.23	$1,682.85	$3,148.38	$3,365.62
18 or 20	$2,066.14	$2,208.70	$4,132.28	$4,417.41

MSD maintains volume charges that recognizes categories of wastewater flows. Table 6-12 lists volume charges by customer class.

Table 6-12. Wastewater Volume Charges

Customer Class	Regular ($/1,000 gallons)	Optional (clean) ($/1,000 gallons)	Sewer Only ($/1,000 gallons)	Sewer Only (optional) ($/1,000 gallons)
(Effective 8/1/2016)				
Residential	$3.76	N/A	$4.34	N/A
Commercial	$4.35	$2.58	$4.86	$2.76
Industrial	$4.53	$2.58	$4.90	$2.76
With Assumed 6.9% Rate increase Effective 8/1/2017				
Residential	$4.02	N/A	$4.64	N/A
Commercial	$4.65	$2.76	$5.20	$2.95
Industrial	$4.84	$2.76	$5.24	$2.95

MSD implemented a surcharge that recovers the costs associated with the EPA Consent Decree. Residential customers pay a fixed fee (either monthly or bimonthly). Commercial and industrial customers pay based on the greater value of a fixed fee or volume based fee. Table 6-13 lists surcharges by customer class.

Table 6-13. EPA Consent Decree Surcharges

	Billing Basis (Effective 8/1/2016)		Billing Basis with Assumed 6.9% Rate Increase (Effective 8/1/2017)	
Customer Class	**Monthly**	**Bimonthly**	**Monthly**	**Bimonthly**
Residential	$11.26	$22.52	$12.04	$24.07
	Greater of…		**Greater of…**	
	Monthly	**$/1,000 gallons**	**Monthly**	**$/1,000 gallons**
Condominium complexes	$11.26	$1.88	$12.04	$2.01
Commercial (regular)	$11.26	$1.35	$12.04	$1.44
Commercial (sewer only)	$11.26	$1.50	$12.04	$1.60
Industrial (regular)	$11.26	$1.40	$12.04	$1.50
Industrial (sewer only)	$11.26	$1.50	$12.04	$1.60
Optional (clean)	$11.26	$0.80	$12.04	$0.86
Optional (sewer only)	$11.26	$0.86	$12.04	$0.92

MSD assesses a strength-based charge for flows that exceed normal domestic-strength flows. MSD has two categories of excess strength charges, the first is for regular rate customers (Excess Quality) and the second is for optional rate customers (Total Quality). Table 6-14 shows the excess strength charges effective August 1, 2016 and proposed rates effective August 1, 2017.

Table 6-14. Excess Strength Charges

	Excess Quality (regular) ($/mg/L)	Total Quality (optional) ($/mg/L)
(Effective 8/1/2016)		
BOD Concentration	$0.003588	$0.003588
TSS Concentration	$0.001478	$0.001478
With Assumed 6.9% rate increase effective 8/1/2017		
BOD Concentration	$0.003836	$0.003836
TSS Concentration	$0.001580	$0.001580

Note:
mg/L=milligram per liter

In addition to wastewater service, MSD also charges for drainage or stormwater services. MSD tracks two classes of properties for the drainage charge. Class A properties are residential customers, which pay a fixed fee for 1 ESU (average imperious area for single family properties). Class B properties are all other properties, which pay based on actual impervious area. Table 6-15 lists the drainage charges by property class.

Table 6-15. Drainage Charges

Property Class	Drainage Charge Rate (Effective 8/1/2016)	Drainage Charge Rate with assumed 6.9% rate increase (Effective 8/1/2017)
Class A Properties (single family)	$8.66/month	$9.26/month
Class B Properties (not single family)	$8.66/ESU	$9.26/ESU

6.8 Impact on Typical User Bills

Table 6-16 summaries the typical residential bill for different levels of bimonthly consumption. Table 6-17 summarizes typical commercial bill for different levels of bimonthly consumption and 10 ESUs (drainage charge).

Table 6-16. Typical Residential Bill Based on MSD with Assumed 6.9% Rate Increases Effective 8/1/20177
5/8-inch meter, Regular (domestic-strength), Bimonthly billing

Bimonthly Consumption (1,000 gallons)	Service Charge	Volume Charge	EPA Surcharge	Drainage Charge	Total
1	$29.46	$4.02	$24.07	$18.52	$76.07
2	$29.46	$8.04	$24.07	$18.52	$80.09
3	$29.46	$12.06	$24.07	$18.52	$84.11
4	$29.46	$16.08	$24.07	$18.52	$88.13
5	$29.46	$20.10	$24.07	$18.52	$92.15
6	$29.46	$24.12	$24.07	$18.52	$96.17
7	$29.46	$28.14	$24.07	$18.52	$100.19
8	$29.46	$32.16	$24.07	$18.52	$104.21
9	$29.46	$36.17	$24.07	$18.52	$108.23
10	$29.46	$40.19	$24.07	$18.52	$112.25
15	$29.46	$60.29	$24.07	$18.52	$132.34

Table 6-17. Typical Commercial Bill Based on MSD with Assumed 6.9% Rate Increase Effective 8/1/2017

5/8-inch meter, Regular (domestic-strength), Bimonthly billing, 10 ESUs

Bimonthly Consumption (1,000 gallons)	Service Charge	Volume Charge	EPA Surcharge	Drainage Charge	Total
1	$29.46	$4.65	$24.07	$92.58	$150.76
5	$29.46	$23.25	$24.07	$92.58	$169.36
10	$29.46	$46.50	$24.07	$92.58	$192.61
15	$29.46	$69.75	$24.07	$92.58	$215.86
20	$29.46	$93.00	$28.86	$92.58	$243.90
25	$29.46	$116.25	$36.08	$92.58	$274.37
30	$29.46	$139.50	$43.29	$92.58	$304.84
35	$29.46	$162.76	$50.51	$92.58	$335.30
40	$29.46	$186.01	$57.73	$92.58	$365.77
45	$29.46	$209.26	$64.94	$92.58	$396.24

6.9 Comparison to Bills in Other Communities

Table 6-18 summarizes the average residential wastewater charge for comparable communities across the U.S. The typical monthly wastewater bill for MSD is $46.87 (excludes drainage fee). The maximum for the communities evaluated is Atlanta, GA at $87.37 per month for 5,000 gallons. The U.S. average is $42.33. Figure 6-8 provides a graphical summary of the average monthly wastewater charges.

Table 6-18. Average Wastewater Charges Based on 5,000 Gallons per Month

Community	Monthly Residential Wastewater Fee based on 5,000 gallons
Lexington, KY	$33.67
Owensboro, KYKY	$38.85
Bowling Green, KYKY	$41.41
U.S. Average	$42.33
Louisville, KY (6.9% effective 8/1/17)	$46.87
St. Louis, MO	$47.55
Boston, MA	$48.08
Nashville, TN	$48.22
Columbus, OHOH	$49.17
New Albany, ININ	$49.87
Northern, KY	$51.72
Frankfort, KYKY	$52.62
Indianapolis, IN	$59.02
Knoxville, TN	$74.32
Kansas City, MOMO	$75.88
Birmingham, AL	$76.48
Cincinnati, OH	$78.37
Atlanta, GA	$87.37

Source: MSD – projected to Fiscal Year 2018

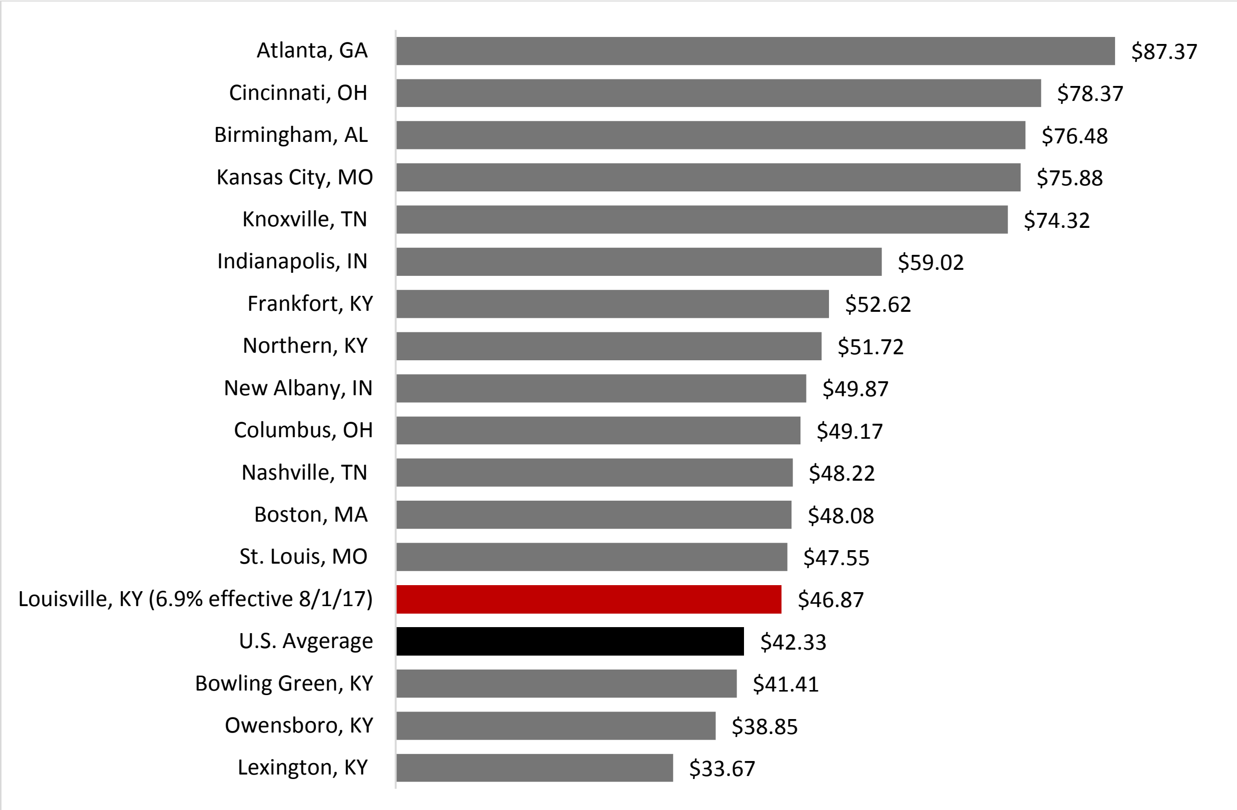


Figure 6-8. Average Wastewater Charges Based on 5,000 Gallons per Month
Source: MSD – Projected to Fiscal Year 2018