



# **Louisville and Jefferson County Metropolitan Sewer District**

## **Fiscal Year 2022 Green Bonds Report**

### **Series 2022A Sewer and Drainage System Revenue Bonds**







*Louisville has an abundance of waterways that provide opportunities for people to relax and connect to nature.*

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*This report is an annual update as of June 30, 2022, regarding the capital projects financed or refinanced with proceeds of the Louisville and Jefferson County Metropolitan Sewer District’s outstanding Sewer and Drainage System Revenue Bonds, Series 2022A (Green Bonds — Climate Bond Certified) (the “Bonds”). This report relates exclusively to the climate attributes of the use of the proceeds of the Bonds. It does not address the creditworthiness of the District or the Bonds nor constitute a recommendation to hold, buy, or sell any of the Bonds.*

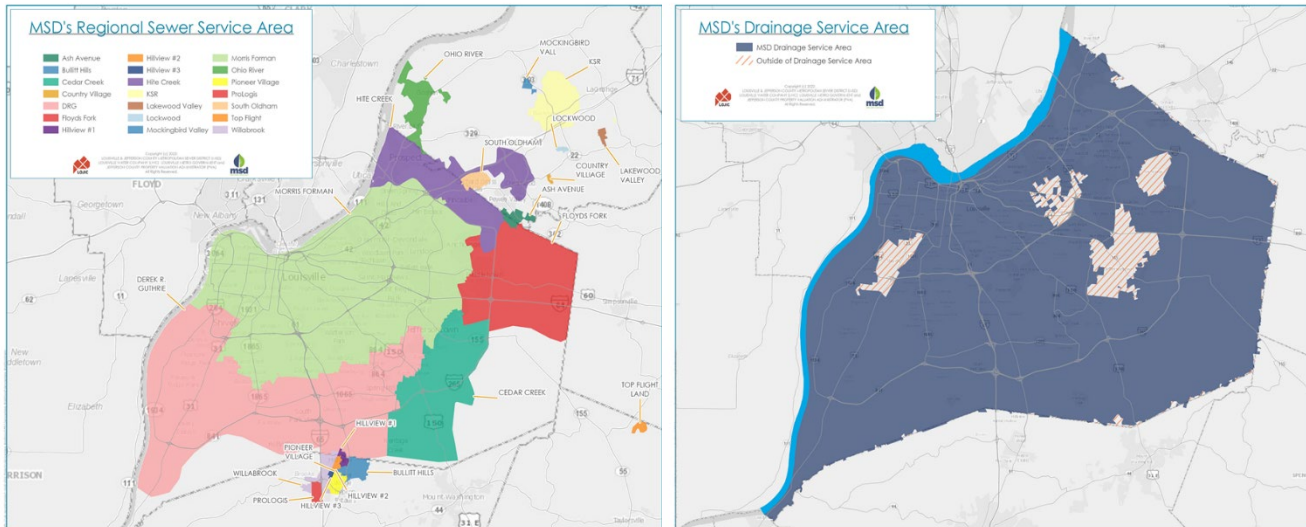
# Louisville MSD

Louisville and Jefferson County Metropolitan Sewer District (“MSD”) was created in 1946 as a public body corporate and subdivision of the Commonwealth of Kentucky. Louisville is located in the north-central portion of Kentucky on the south bank of the Ohio River. Louisville is the largest city in Kentucky and is the core of the Louisville Metropolitan Statistical Area which includes the counties of Bullitt, Oldham and Shelby, in Kentucky, and Clark, Floyd, and Harrison, in Indiana.

MSD provides wastewater collection, treatment, and disposal services in Jefferson County. Through inter-local agreements, MSD also provides wastewater collection, treatment, and disposal services to portions of Oldham County and Bullitt County. MSD’s sewer system extends throughout much of the developed portions of Jefferson County and 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), 3,000 miles of sanitary sewers, more than 260 pumping stations, 5 Water Quality Treatment Centers, and 15 regional treatment plants.

MSD is also responsible for the operation, maintenance, replacement, and improvement of the existing flood control facilities and public stormwater drainage facilities in Jefferson County. The stormwater drainage system is comprised of various types of facilities to collect, convey, retain, and discharge stormwater runoff into the sewers, streams, and creeks eventually draining 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.

The MSD operating budget supports the day to day operation and maintenance of all infrastructure, while the capital budget supports the infrastructure investments through its Capital Improvement Program (“CIP”). MSD continues to complete important projects; comply with consent decree and regulatory requirements; and repair/replace critical assets.



# Annual Reporting Commitment

MSD issued its inaugural series of green bonds on February 1, 2022, the Series 2022A Sewer and Drainage System Revenue Bonds (“Series 2022A Bonds”). The Series 2022A Bonds are Climate Bond Certified indicating they are fully aligned with the internationally accepted Climate Bonds Standard (Version 3.0) and the Water Infrastructure Sector Criteria (Version 3). Kestrel Verifiers provided the Verifiers Report for the Series 2022A Bonds. Their report can be found as Appendix G of the Series 2022A Bonds’ Official Statement.

The Climate Bonds Standard (Version 3.0) sets out post-issuance requirements for all Certified Climate Bonds. MSD’s green bond reporting commitment for the fiscal year ended June 30, 2022, includes the following elements:

- Use of Proceeds
- Management of Proceeds
- Project Selection & Spending
- Reporting

MSD expects to provide voluntary annual update reports on EMMA and MSD’s BondLink website as long as the Series 2022A Bonds are outstanding.

## Use and Management of Proceeds

The net proceeds of the Series 2022 Bonds will be used to pay at maturity program notes issued and outstanding as senior subordinated debt under MSD’s Program Note Resolution. MSD issues commercial paper program notes to finance the cost of capital improvements and additions to its sewer and drainage systems. The net proceeds of the Series 2022A Bonds exceeded the amount required to refund outstanding program notes. The excess funds were deposited in a construction fund and will be used to pay costs of capital improvements and additions to MSD’s sewer and drainage systems.

MSD has established Debt Issuance Procedures to ensure the proper segregation of all bond proceeds from other District funds. Additionally, MSD has adopted an Investment Policy which governs how bond proceeds are invested.

The following table summarizes the net proceeds and bond draws for the Series 2022A Bonds:

Use of Proceeds As Of June 30, 2022				
Description	Net Proceeds		Accrued Income	Ending Balance
	Deposited	Bond Draws		
Series 2022A Commercial Paper Debt Service Fund	\$ 215,000,000	\$ 215,000,000	\$ 787	\$ 787
Series 2022A Bonds Construction Fund	33,735,399	-	74,178	33,809,576
<b>Total</b>	<b>\$ 248,735,399</b>	<b>\$ 215,000,000</b>	<b>\$ 74,965</b>	<b>\$ 33,810,364</b>



Use of Proceeds to Pay At Maturity CP Program Notes			
Maturity Date	CUSIP #		Amount
2/3/2022	54658NCR0	\$	15,000,000
2/7/2022	54658NCS8		15,000,000
2/10/2022	54658QCS1		15,000,000
2/16/2022	54658QCT9		10,000,000
2/17/2022	54658NCT6		5,000,000
2/23/2022	54658QCU6		15,000,000
2/25/2022	54658QCV4		10,000,000
3/1/2022	54658QCW2		10,000,000
3/3/2022	54658QCX0		10,000,000
3/7/2022	54658RAD4		10,000,000
3/9/2022	54658QCZ5		15,000,000
3/11/2022	54658NCU3		15,000,000
3/14/2022	54658NCV1		10,000,000
3/16/2022	54658NCY5		20,000,000
3/18/2022	54658QDA9		10,000,000
3/22/2022	54658NCX7		20,000,000
3/24/2022	54658NCW9		10,000,000
<b>Total</b>		<b>\$</b>	<b>215,000,000</b>

Commercial paper program notes were used to fund MSD's CIP during the period of June 2020 through January 2022. Eligible project expenses during this period were paid with the proceeds of commercial paper program notes and cash generated by operations. Commercial paper program notes were reissued at maturity during the construction period until the Series 2022A Bond proceeds were available. The table on the right details the commercial paper program notes that were paid at maturity with proceeds of the Series 2022A Bonds.

## Project Selection and Spending

A combined sewer system carries wastewater and stormwater in the same pipe. The earliest sewers in Louisville were built in the 1800s and designed to drain stormwater to the Ohio River or nearby streams. When indoor plumbing became common in Louisville homes, a sanitary sewer became necessary to drain wastewater. Combining wastewater with stormwater in the same pipe was considered the most convenient way to accomplish this. These combined sewer systems were the industry standard in Kentucky until 1955 when they were banned by the state. MSD had stopped building combined sewers two years earlier, but many combined sewers were already in service in Louisville and Jefferson County, particularly in the area inside the Watterson Expressway.

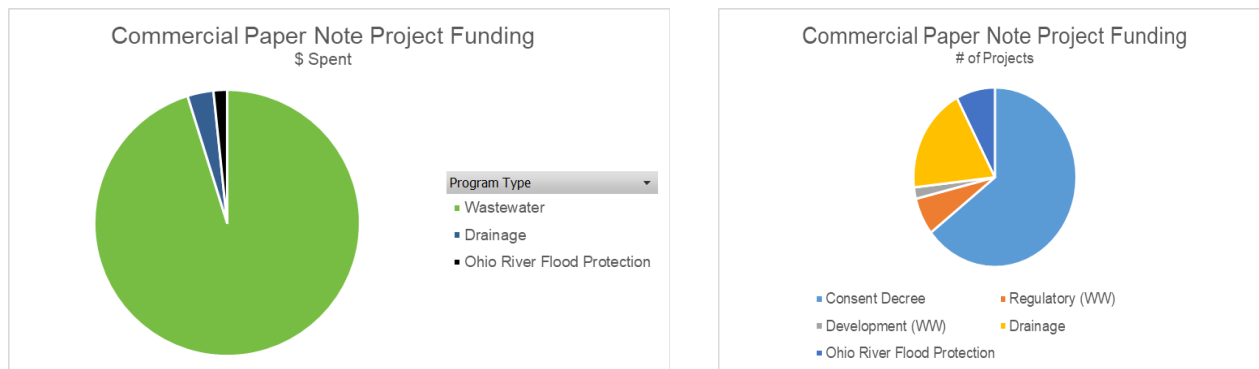
Combined sewer systems were banned because they released both stormwater and untreated wastewater into local waterways, harming local wildlife and plant-life. They also exposed people to bacteria and pathogens. MSD modified the pre-existing combined sewers, sending most of the wastewater to its treatment plants. Unfortunately, during heavy rain events, these combined sewer systems may become overloaded by stormwater, allowing it to mix with wastewater. This unsanitary mixture will sometimes overflow into local streams and the Ohio River. These overflows are called combined sewer overflows. On August 12, 2005, MSD agreed to enter into a consent decree with the Commonwealth of Kentucky's Environmental and Public Protection Cabinet and the U.S. Environmental Protection Agency to resolve alleged violations of the Clean Water Act for untreated overflows from Louisville's combined and separate sanitary sewer systems.

In order to comply with the terms of the consent decree, MSD prepared a plan to reduce and mitigate the effects of combined sewer overflows and to eliminate sanitary sewer overflows and other unauthorized discharges. The final Sanitary Sewer Discharge Plan and the Long Term Control Plan were certified on December 19, 2008 under the title of the Integrated Overflow Abatement Plan ("IOAP"). The consent decree was amended in 2009 and in 2022. Work to comply with the consent decree has been ongoing since 2005 and will continue through 2035.

MSD completed a 20-year Comprehensive Facility Plan ("Facility Plan") in June 2017. Previous work on the IOAP was consolidated into the Facility Plan. In addition to the IOAP, the Facility Plan projects include upgrades to the Ohio River Flood Protection System, improvements to inland stormwater and drainage systems, upgrades at MSD's Water Quality Treatment Centers ("WQTC") and renewal of failing infrastructure. The Facility Plan is the basis of our long-term capital planning effort. Projects are developed, prioritized and advanced in annual capital budgets to ensure the most critical needs are addressed first and

projects with regulatory-driven schedules are completed on-time. The recommendations in the Facility Plan are essential to maintaining reliable and properly sized facilities that will allow MSD to fulfill its responsibility for safe, clean waterways and to help preserve and promote our competitiveness as a city.

The MSD projects financed with green bond proceeds are required to advance objectives in its wastewater, drainage and flood protection service areas. The following charts graphically display the dollars spent by program type and the number of projects by program type.



**Project Highlights:**

**Consent Decree Implementation:** Since the start of the consent decree, MSD has seen a significant reduction in sewer overflows. For a 2-year cloudburst storm, 134 sanitary sewer overflow locations have been eliminated, from 197 modeled locations in 2007, to 65 in 2021, and 63 in 2022. Combined sewer overflow volumes have been reduced by 5.85 billion gallons per typical year, from 6.5 billion gallons in 2001, to 1.1 billion gallons in 2021, and 648 million gallons in 2022. Through June 30, 2022, capital expenditures related to the consent decree totaled approximately \$1.1 billion. MSD estimates that capital expenditures associated with the requirements of the consent decree, including the pending requirements of the second amended consent decree, could range from \$1.9 billion to \$2.0 billion. As with any estimate, the actual costs incurred could differ materially.

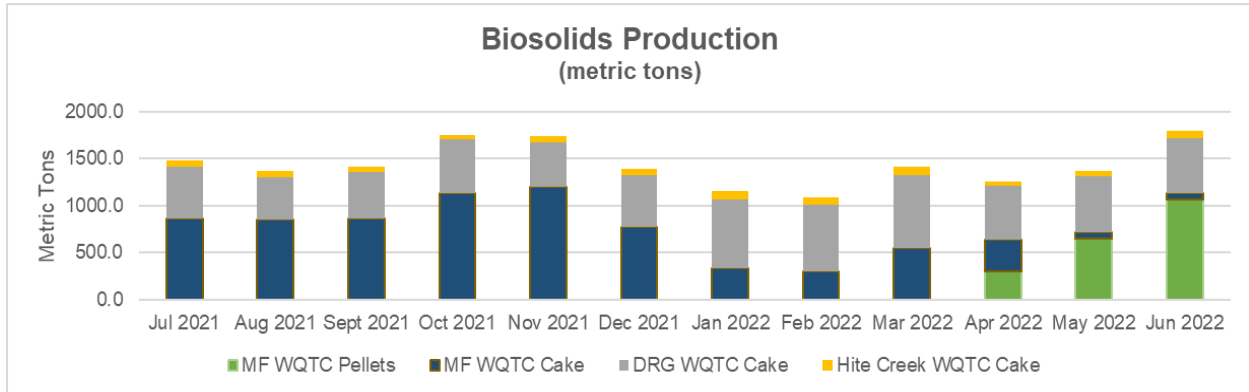
**Waterway Protection Tunnel:** MSD’s largest infrastructure project to date, the Waterway Protection Tunnel, was capped on May 16, 2022 and placed into service in early June. The Waterway Protection Tunnel stretches four miles from 11th and Rowan streets to Grinstead Drive and Lexington Road. The tunnel can store up to 55 million gallons of combined stormwater drainage and wastewater until sewage treatment capacity is available, preventing the water from passing untreated into the Ohio River and Beargrass Creek. The Waterway Protection Tunnel will ultimately prevent 439 million gallons of a mixture of rainwater and wastewater from overflowing and polluting the Ohio River and Beargrass Creek in a typical rainfall year.

**Morris Forman Dryer Replacement & Derek R. Guthrie Dewatering Facility:**

Historically, the Morris Forman WQTC has processed, marketed, and disposed of the biosolids generated by all of MSD’s wastewater treatment facilities. By 2018, the biosolids facilities at Morris Forman had become increasingly unreliable due to age. Two independent consulting engineers recommended, as a long-term solution, replacement of the biosolids infrastructure with a modern biosolids processing facility. MSD commissioned Black & Veatch to prepare a District-Wide Biosolids Master Plan. The Master Plan identified short-term improvements that would help MSD achieve permit compliance and support construction of the new biosolids facility. The short-term improvements included replacing outdated drying equipment at Morris Forman (centrifuges and dryers) and offloading regional biosolids (constructing a dewatering facility at Derek R. Guthrie WQTC). Construction began immediately on both projects.

The new dewatering facility at Derek R. Guthrie WQTC began producing dewatered cake for the first time in February 2020. Morris Forman WQTC stopped processing pelleted biosolids in April 2020 as the old dryer equipment was decommissioned. As the Morris Forman dryer replacement project neared completion

in 2022, pelleted biosolids began being produced again in April. The following chart shows biosolids production during fiscal year 2022 and shows the impact both capital projects have made for MSD.



### Major Wastewater Projects

Project	Actuals	Project Status	Project Description & Impacts
Waterway Protection Tunnel	\$ 193,797,799	In Progress	This project constructs a four mile long tunnel from 11th and Rowan streets to Grinstead Drive and Lexington Road. The work includes drop shafts, a pump station, connection points, excavating 625,000 tons of rock and lining the entire length of the tunnel with 12-inches of concrete. When complete, the tunnel will prevent an average of 439 million gallons annually of combined rainwater and wastewater from overflowing.
Morris Forman Dryer Replacement	\$ 67,089,414	In Progress	This project demolishes the end-of-life dryer systems at Morris Forman WQTC and replaces them with two state-of-the-art dryers. The investment increases MSD's ability to reliably process biosolids.
Derek R Guthrie Dewatering Facility	\$ 46,628,661	Completed	This project constructs new dewatering facilities at the Derek R Guthrie WQTC. The project will offload biosolids produced at MSD's regional WQTCs from Morris Forman and increases MSD's ability to reliably process biosolids.
Broadway Sewer Rehabilitation	\$ 24,849,335	Completed	Sewers are the oldest components of our wastewater system, some over 150 years old. Rehabilitation of critical sewers is ongoing to reduces the risk of line breaks and protects public health and safety.
I-64 & Grinstead Sewer Rehabilitation	\$ 9,860,275	Completed	Sewers are the oldest components of our wastewater system, some over 150 years old. Rehabilitation of critical sewers is ongoing to reduces the risk of line breaks and protects public health and safety.

### Major Drainage Projects

Project	Actuals	Project Status	Project Description
Project DRI	\$ 3,075,088	Completed	This program addresses drainage issues in the drainage service area ranging from structural flooding to alleviating minor standing water problems.

### Major Flood Protection Projects

Project	Actuals	Project Status	Project Description
Pond Creek Emergency Pump Repairs	\$ 2,715,918	Completed	This project replaced equipment damaged at the Pond Creek flood pump station during the February 2018 Ohio River flood event.
Flood Pump Station Rehabilitation	\$ 1,536,745	In Progress	This project provides for repair and replacement of various Ohio River flood pump station equipment.



**msd**

Safe, clean waterways