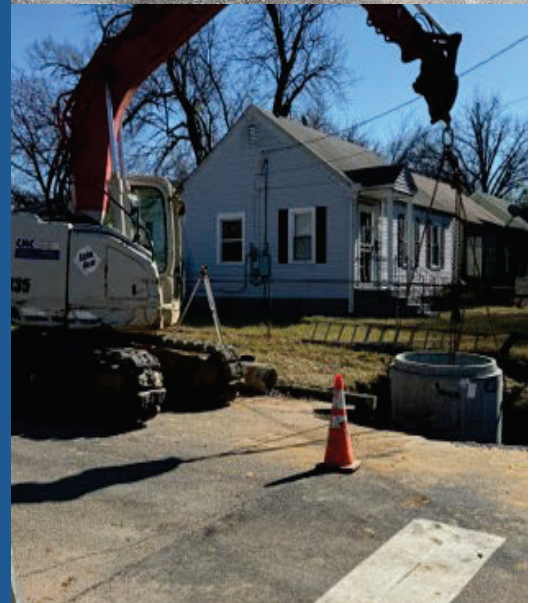


MSD ODOR MITIGATION

MEDIUM-TERM ACTION PLAN

FY27– FY28

Submitted August 1, 2026



Background

On September 18, 2024, Louisville and Jefferson County Metropolitan Sewer District (MSD) entered into their Second Amended Agreed Board Order (ABO) No. 21-01 with the Louisville Metro Air Pollution Control Board to focus on odor mitigation in its water quality treatment centers and collections systems. Pursuant to the provisions of the ABO (MSD) submits this Medium-Term Action Plan. MSD is a regional utility for wastewater, storm water, and flood protection services. MSD manages three utilities in one (**#3UtilitiesInOne**) to provide efficient, effective services to protect the region's people and property.

Although odors are a natural part of wastewater and managing it can be challenging, MSD is committed to improving odors within the communities it serves. MSD can only address odors that are within their purview and responsibility. As part of this Medium-Term Action Plan, MSD provides a summary of activities conducted between July 1, 2024, and June 30, 2026, to show our progress to date. An annual report detailing activities for fiscal year 2026 (July 1, 2025 – June 30, 2026) will be submitted by September 30.

Short Term Action Plan Progress Summary

During the Short-Term Action Plan, MSD has continued to deepen its community engagement by hosting a series of clAIRity meetings both in person and virtually to keep residents informed about odor-related concerns, response activities, and ongoing mitigation projects. These sessions provided regular opportunities for community members to hear updates directly from MSD, ask questions, and stay connected to our work throughout each odor season. To ensure broad access, every meeting was livestreamed on MSD's YouTube channel and later posted for on-demand viewing, allowing residents to stay engaged even if they could not attend in person. This consistent outreach reflects our commitment to transparency, accessibility, and meaningful collaboration with the communities we serve.

Short Term Action Plan Summary Table

Category	Short-Term Action Plan Projects	Item #	Summary	Expenditure
Treatment	New Biosolids Facility (Morris Forman)	1	Major equipment installation largely complete; THP units delivered; structural buildings completed; digester rehab advanced.	\$153.09M
	Sedimentation Basin Rehabilitation (Morris Forman)	2	Basin rehabilitations complete; odor control system nearing startup; pump station upgrades completed.	\$39.84M
	Southwest Pump Station Gas Monitoring and Odor Control	A	MSD installed a biotrickling filter odor control system at the Southwest Pump Station that treats additional odor sources and is designed to remove 99% of hydrogen sulfide from incoming air.	\$0.29M
	Odor Management Plan (Derek R. Guthrie)	B	Odor Control Management Plan with AECOM evaluated odor sources and treatment needs around the Derek Guthrie Water Quality Treatment Center	\$0.24M
	Hydrogen Sulfide (H ₂ S) Removal -Digester Gas (Morris Forman)	C	Coating removed; concrete prepped; new electrical building installed; Digester #3 startup preparation	\$7.62M
	Dissolved Air Flotation Thickener (DAFT) Rehabilitation (Morris Forman)	D	Oxygen Generator Assembly demolition underway; ductwork replacement; equipment submittals in review; DAFT Tanks #7 & #8 next.	\$10.72M

Collections	Western Outfall Sewer Shed Studies	E	Wastewater Aerobic/Anaerobic Transformations in Sewers (WATS) model developed; scenario testing underway; future improvements budget-dependent.	\$0.50M
	Ohio River Force Main Technology Study	F	Wastewater treatment model developed to evaluate the effectiveness of current odor control measures along the Ohio River Force Main and identify additional treatment options to improve performance.	\$0.03M
	Grand Avenue Force Main - Chemical Use Study	G	Direct force-main nitrate injection is proving to be effective. MSD will track performance to confirm sustained improvement.	\$0.03M
Pump Stations	Starkey Pump Station	H	The evaluation is complete and provides a high-level overview of findings.	\$0.04M
Catch Basins	Catch Basin Inspections	I	12,774 inspected to date; 2,552 identified for replacement across neighborhoods.	\$1.20M
	Catch Basin Replacements	J	Total catch basin replacements to date (Neighborhoods include Park Duvalle, California, Chickasaw, Shawnee, Taylor/Berry, Park Hill and Nulu)	\$7.06M
Additional Projects	Odor Management Plan (Hite Creek)	K	Odor Control Management Plan with AECOM evaluated odor sources and treatment needs around the Hite Creek Water Quality Treatment Center	\$0.20M
	Southwestern Outfall Sewer Shed Studies	L	WATS model developed; scenario testing underway; future improvements budget dependent.	\$0.10M
Total				\$220.96M

FY27 – FY28 Planned Projects

This section covers odor mitigation activities planned from July 1, 2026, through June 30, 2028. The projects listed in this Medium-Term Action Plan are part of MSD's capital budget that was reviewed and approved by the MSD Board on May 26, 2026. MSD's current funding situation reflects a careful balance between maintaining affordability for customers evidenced by a reduced FY26 rate increase and sustaining significant capital investment needs, the majority of which are driven by regulatory requirements and operational demands. We expect this to continue over the next several years.

This Medium-Term Action Plan is organized into the same four categories as outlined in the ABO which are Treatment, Collection System, Pump Stations, and Catch Basins.

I. Treatment

The treatment category covers projects specific to our Water Quality Treatment Centers (WQTCs). MSD operates five WQTCs in Jefferson County. Wastewater travels from homes, businesses, and properties to these centers before being released into local waterways. The respective WQTC for each project is noted in parentheses in Table T-1. This chart consolidates all capital expenditures and the projected start and end dates for both groups of projects: those required under our Consent Decree with the U.S. EPA and the Kentucky Energy and Environment Cabinet that directly support our odor mitigation efforts, as well as the additional odor-control projects outside the Consent Decree. Presenting them together provides a unified view of the full odor-mitigation program, its timelines, and associated investments. All projects listed in treatment are multi-year efforts that started during the Short-Term Action Plan years and will continue into the Medium-Term Action Plan.

Projects	FY27-FY28 Estimate (millions)	Projected Start Date	Projected End Date
1. New Biosolids Facility (Morris Forman)	\$80.50	In Progress	11/07/2028
C. Hydrogen Sulfide (H ₂ S) Removal - Digester Gas (Morris Forman)	\$0.29	In Progress	9/30/2026
D. Dissolved Air Flotation Thickener (DAFT) Rehabilitation (Morris Forman)	\$15.59	In Progress	12/29/2027

Table T-1

1. New Biosolids Facility / Thermal Hydrolysis Pretreatment - THP (Morris Forman)

Upcoming activities are focused on near-term construction, testing, and coordination of milestones, including grout placement and concrete work, along with multiple hydrostatic, leak, and pressure tests scheduled through early May. Planned operational impacts of pressure testing and tentative shutdowns for tie-ins in mid-May. Startup and commissioning efforts continue advancing, with THP Train 1 now projected for December 2026 and Train 2 in July 2027, while digester cover installations extend into late 2026 and 2027 due to ongoing coating issues. Additional key efforts include continued submittal reviews, startup planning, and coordination activities, with upcoming risk register meetings in June. Overall, the project remains active across multiple fronts, with substantial completion still contractually set for December 2027 but currently trending into early 2028. As stated in the Short-Term Action Plan, this is a multi-year project that aims to improve solids handling and reduce odor emissions at the plant and surrounding areas.

C. Hydrogen Sulfide (H₂S) Removal – Digester Gas (Morris Forman)

Upcoming work over the next reporting period will focus on continued mechanical and electrical installations, including ongoing pipe and pipe support installation, wire pulling to automated valves and the prefabricated electrical building, and completion of blower anchoring and alignment, as well as installation of remaining pipe bridge elements and digester brackets. Key near-term milestones include installation of H₂S media within the vessels, placement of bollards, and progression of piping across Pipe Bridge No. 2. Additional planned activities include continued weekend work to maintain schedule recovery, coordination of plant impact requests for electrical tie-ins and testing, and preparation for upcoming startup and commissioning phases later in the project, with overall substantial completion currently targeted for late September 2026 with an estimated expenditure of \$0.29M in FY27. As stated in the Short-Term action Plan, MFWQTC has four anaerobic digesters which use naturally occurring microorganisms in the digesters' oxygen free environment to break down organic matter. As the organic matter breaks down, digester gas is produced. Sampling found high hydrogen sulfide (H₂S) levels present in the digester gas. To comply with the Federally Enforceable District Origin Operation Permit (FEDOOP), MSD will install a Hydrogen Sulfide Removal System that reduces the hydrogen sulfide concentrations in the digester gas prior to end use.

D. Dissolved Air Flotation Thickener (DAFT) Rehabilitation (Morris Forman)

Upcoming milestones and planned activities for the project include preparing Tanks 3 and 4 for inspection, with inspections expected to take about one day once ready. Key upcoming submittals include steel stairs for the Oxygen Generator Assembly (OGA) courtyard, handrails, and instrumentation packages, while ongoing coordination is focused on resolving Request For Information (RFI) (notably ductwork clearances) and progressing Request For Proposal (RFP) items such as polymer room Variable Frequency Drives (VFDs) and additional Programmable Logic Controllers (PLCs)-related supports. Material activities include continued mobilization of recently delivered piping for Tanks 3 and 4, along with coordination of equipment storage and site access. Additional efforts will focus on finalizing design revisions, advancing allowance-related change orders, and maintaining progress payment documentation. The project is expected to be completed by December 29, 2027, with an estimated expenditure of \$15.59M across FY27-28. As stated in the Short-Term Action Plan, this project will evaluate and determine the best odor mitigation technologies for this area. Improving odors in this process will enhance overall air quality at MFWQTC.

II. Collection System

The collection system carries wastewater from homes, businesses, and industries to MSD's Water Quality Treatment Centers, and includes both combined and separate sewer systems. This Medium-Term Action Plan will continue to focus on monitoring conditions within the combined system. Due to ongoing financial constraints, we do not anticipate initiating any new collection system projects during FY27–FY28, though we will remain flexible if critical needs arise.

III. Pump Stations

Pump stations are used within gravity sewer systems to lift wastewater to a higher elevation when gravity alone cannot maintain an adequate slope or would require pipes to be installed at impractical depths. Their size and design vary based on how much wastewater they must handle and how far it must be lifted, and some MSD pump stations have been identified as sources of odor. These stations will undergo continuous monitoring to minimize odors. Due to ongoing financial constraints, we do not anticipate initiating any new pump-station projects during FY27–FY28, though we will remain flexible if critical needs arise.

IV. Catch Basins

As part of our Capacity Management, Operations, and Maintenance (CMOM) Program, MSD maintains roughly 24,000 catch basins in the combined system and inspects and cleans each one on a 15-month cycle, completing about 19,440 inspections per year. Crews clean basins as needed during inspection and execute follow-up work when structural issues are identified. Once all basins are inspected, the cycle begins again. MSD will continue to inspect the condition of all catch basins through our CMOM program and will proceed with rehabilitation and replacement of the basins listed in Table CB1.

Projects	Replacement #	FY27 – FY28 Estimate (millions)	Projected Start Date	Projected End Date
J2. Chickasaw Neighborhood	40	\$0.61	In Progress	9/30/2026
J6. Park Hill Neighborhood	155	\$2.80	7/1/2026	6/30/2027

Table CB-1

J. Catch Basin Replacements

Catch basin replacements in FY27 and FY28 will be targeted for completion as outlined in Table CB-1. Replacements will include installing trapped catch basins to deter odors from escaping the system. MSD expects to see a decrease in customer odor reports specific to these catch basins. However, odors can still be released when trapped catch basins become dry. Therefore, MSD will periodically inspect the catch basins and add water as needed to contain odors.

2. Chickasaw - 746 catch basins were inspected and 69 were identified to be replaced in the Chickasaw neighborhood. Of the 69 identified basins, 29 were replaced in FY26. The remaining 40 catch basins will be carried over and completed in FY27 with an estimated expenditure of \$.61 million.

6. Park Hill - 564 catch basins were inspected and 177 were identified for replacement. 22 catch basins were completed in FY26 and the remaining 155 will be replaced in FY27- FY28 with an estimated expenditure of \$2.80 million.

V. Summary

Sewer odors cannot be fully eliminated, but MSD is prioritizing community impact and investing heavily in mitigation efforts. The Medium-term Action Plan outlines anticipated work on odor-related projects, with an estimated \$99.8 million in spending over the next two fiscal years. Table S-1 below consolidates these projects.

Category	Item#	Medium-Term Action Plan Projects	FY27–FY28 Expenditures (millions)	Projected Start Date
Treatment	1	New Biosolids Handling Facility / Thermal Hydrolysis Pretreatment (THP) (Morris Forman)	\$80.50	In Progress
	C	H ₂ S Removal – Digester Gas (Morris Forman)	\$0.29	In Progress
	D	Dissolved Air Flotation Thickener (DAFT) Rehabilitation (Morris Forman)	\$15.59	In Progress
Catch Basins	J2	Chickasaw Neighborhood Catch Basin Replacements	\$0.61	In Progress
	J6	Park Hill Neighborhood Catch Basin Replacements	\$2.80	7/1/2026
TOTAL			\$99.81	

Table S-1

MSD intends to complete the projects as outlined in this plan. However, projects could be impacted by funding, contractor availability, materials, or other extenuating factors. MSD will document any variations to this Medium-Term Action Plan in its mid-year and annual reporting as changes are identified. MSD will provide a Mid-Year Report by March 31st of each year for progress made between July 1st and December 31st of the prior year and an Annual Report by September 30th for both fiscal years 27 and 28.

In conclusion, MSD remains committed to managing odors through a coordinated, transparent, and community-focused approach. MSD's dedicated odor team is part of its standard operational model for addressing community odor concerns. The team includes two full-time employees who lead odor-mitigation efforts, provide hands-on project management, and develop targeted solutions to reduce odor reports. This approach strengthens coordination across MSD's odor-related initiatives while supporting transparency and keeping residents informed of ongoing work and progress. Community engagement remains a core part of this model, with the team fostering open dialogue and encouraging resident participation in identifying localized issues and shaping practical solutions. The team also provides periodic updates to city leadership and the public, reinforcing accountability and ensuring stakeholders remain informed of key findings, actions, and progress toward odor mitigation.