


**Date:** April 3, 2026

**To:** Holly Christmann, Assistant County Administrator

**From:** Diana Christy, Executive Director, MSD 

**Copy:** Neal Frink, Senior Assistant City Solicitor  
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**Subject:** **Targeted Impervious Surface Charge / Wet Weather Surcharge Implementation Plan**

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## **EXECUTIVE SUMMARY**

MSD has developed this implementation plan for a targeted impervious surface charge, as required by the Board of County Commissioners' December 18, 2025 Resolution. The proposed Wet Weather Surcharge Program is intended to improve rate equity, reduce combined sewer overflow (CSO) impacts, and encourage on-site stormwater management.

Rather than implementing a district-wide impervious surface charge, MSD proposes to focus initially on approximately 500 non-domestic properties with more than two acres of impervious area draining to the combined sewer system. These properties represent some of the largest contributors of wet-weather flow and provide the greatest opportunity for targeted mitigation.

The program will include two primary components. First, MSD will implement a new General Pretreatment Permit requiring affected properties to develop and maintain a Stormwater Management Plan identifying impervious areas, evaluating stormwater controls, and implementing best management practices where appropriate. Second, MSD will establish a wastewater treatment system surcharge for excess wet-weather flow. The surcharge would apply only when a property generates wet-weather flow beyond the level typically associated with residential properties. Credits will be available for properties that implement effective stormwater mitigation.

Implementation will occur in phases beginning with the largest properties. Each group of properties will move through a five-year cycle that includes permitting, evaluation of wet-weather contributions, and gradual implementation of the surcharge. This phased approach allows property owners time to implement stormwater improvements before full charges apply.

MSD anticipates completing program development in 2026, including preparation of permit materials, development of the surcharge methodology, and proposed updates to MSD Rules and Regulations. Initial implementation is expected to begin in 2027.

## **BACKGROUND**

MSD is a self-funding utility with the majority of its revenue requirements for operational, asset management, and WWIP-driven capital costs covered by MSD ratepayers. In 2016, with growing rate affordability concerns, the Board of County Commissioners (Board) formed the Hamilton County Rate Affordability Task Force to evaluate and make recommendations related to MSD's then existing sewer rates. The Task Force issued a report in 2016 that made multiple recommendations, including exploring the implementation of an impervious surface charge. In 2019, the Board adopted Resolutions directing the County Administration to develop a work plan to implement an impervious surface-based charge as well as creating a task force and working group ("stakeholders") to assist and provide input on the work plan.

The County Administration and MSD conducted the feasibility study with the assistance of rate consultants Black & Veatch, who developed a proposed bifurcated (two part) rate structure under which a Wet Weather Impervious Surface Charge (WWISC) would be used to recover the annual wet weather portion of MSD's revenue requirement, and the sanitary sewer rate structure would recover the annual sanitary sewer portion. Due to the complex and highly integrated nature of the MSD system, the two-part rate structure was proposed to be charged uniformly to all parcels within the MSD sewer shed regardless of whether in the CSS area, where parcels are likely contributing wet weather flow to the MSD sewer system, or the separated sanitary and storm sewer area, where parcels are less likely to be contributing wet weather flow.

After extensive engagement and discussions, the stakeholders ultimately did not reach a consensus on whether to recommend implementation of the proposed rate structure. However, certain stakeholders continue to strongly support the implementation of an impervious surface charge. In particular, a number of stakeholders raised the concern that residential (domestic) users were paying more than their fair share and subsidizing industrial (nondomestic) users with large amounts of impervious area (IA) contributing excessive wet weather flow to MSD.

In response to these ongoing requests, MSD provided a May 5, 2025 memo that discussed challenges presented by the implementation and administration of a district-wide impervious area-based charge and proposed other feasible alternatives to address the same primary drivers. Such drivers include rate equity, public education and engagement, incentives for improved on-site stormwater management, as well as disincentives for excessive stormwater contributions.

One of the alternatives included allocating more inflow/infiltration (I/I) cost recovery from the minimum (base) charge to the commodity (consumptive) charge. This redistribution aligns with industry standards and improves equity, recognizing that customers with higher water use typically have more IA and contribute more wet weather flow to the system. This recommendation was approved by the Board on December 18, 2025 and is now part of MSD's rate structure.

A second alternative focused on public-public partnerships to eliminate illicit I/I in the sanitary-only areas where separate storm water systems are available to handle rainfall. MSD determined through monitoring and modelling that wet weather impacts remain in these separated areas and that they contribute to downstream CSOs and SBUs. MSD has identified local governmental units willing to partner with MSD to help homeowners remove illicit I/I sources (e.g., through downspout and yard drain disconnections). On January 29, 2026 the Board approved the execution of the first I/I removal credit program through an Inter-Governmental Agreement with the City of Sharonville. MSD is in discussions to replicate this program with other municipalities and townships.

A third alternative proposed in the May 5, 2025 memo focused on implementation of a charge for properties with large amounts of IA to disincentivize excessive contributions of wet weather flow to MSD's system. The original WWISC proposed to charge all customers in the MSD service area regardless of the extent to which impervious area is contributing flow to the MSD system (e.g., the WWISC applied to properties in separated sanitary and storm sewer areas and to properties with detention or other means of on-site management). Under a more targeted approach, MSD proposed to focus on nondomestic sources discharging to the CSS and to only bill for excess wet weather flow. This approach ensures that there is both a nexus for the charge and that the charge is proportional to the service provided by MSD.

This third alternative is the subject addressed herein. To implement this approach, MSD proposes to focus on the largest sources first. The approach is designed to enhance rate equity and provide additional CSO control in an efficient and effective manner.

## **IMPLEMENTATION PLAN: ENHANCED CSO CONTROL THROUGH PRETREATMENT PERMITTING AND WTS SURCHARGE**

The proposal, in short, includes additional Pretreatment Program controls for large, nondomestic sources of wet weather flow to the CSS, along with a WTS Surcharge for excess wet weather flow (EWWF) that is not adequately mitigated by pretreatment controls at the source. The remainder of this memorandum discusses: 1) Pretreatment Program enhancements, 2) WTS Surcharge development, and 3) budget and schedule for program implementation.

### **1. Pretreatment Permitting**

Based on geo-spatial analysis of the distribution of IA throughout the sewer district analyzed during the WWISC assessment, MSD proposes initially to regulate, through the Pretreatment Program, nondomestic sources with greater than 2 acres of IA that discharge to the CSS. This results in a population of 510 sources (the "Top 500") that have, on average, 4.6 acres of IA and in total comprise 2,352 acres of IA. For comparison, there are 99,239 properties that are 1-3 unit residential (domestic) sources that discharge to the CSS with an average of 1,800 square feet (0.05 acres) of IA and in total comprise just over 4,000 acres of IA. Focusing on the largest sources first is consistent with US EPA's NMC Guidance which suggests that "if the number of nondomestic users is large enough to preclude review of all facilities, \* \* \* focus on the facilities with the greatest potential impact with regard to CSOs."

Currently, under its Pretreatment Program MSD tracks about 10,000 Industrial Users (IUs) and permits 180 IUs through individual IU permits. Typically, individual IU permits include a requirement to develop and implement a Storm Water Management Plan (SWMP). Twenty-five of MSD's permitted IUs are also on the list of the Top 500 nondomestic sources with greater than 2 acres of IA.

In addition to individual IU permits, MSD has authority to develop General Permits under its Pretreatment Program. MSD proposes to use a General Permit for large IA sources that contribute to CSO impacts. The main components of the General Permit will be submission of a SWMP that: delineates and quantifies IA tributary to the CSS; identifies BMPs to mitigate wet weather flow (e.g., detention, bioswales, recovery/reuse); and describes methods to prevent/control accidental release of pollutants or chemicals to the CSS. The permit will require the User to operate and maintain BMPs and meet limited reporting and recordkeeping requirements.

MSD will conduct an on-site review of each SWMP for compliance, evaluate the facility's contribution to CSO impacts, and identify additional BMPs that may be required or recommended. Facilities will annually certify compliance with the existing SWMP and/or submit an updated SWMP. Administrative cost of the General Permit program will be recouped through an annual permit fee. The initial fee is estimated to be between \$200 -- \$500 annually but will be updated based on actual program costs.

There are a number of advantages to regulating wet weather BMPs under a permitting regime:

- **Remedial Effect.** They provide a mechanism to capture facilities that were developed before storm water BMPs were required for facilities discharging to the CSS. Preliminary review of facilities on the top 500 list shows that properties developed (or redeveloped) in the past 10 to 20 years appear to include more effective stormwater controls. In contrast, facilities developed earlier frequently appear to have no wet weather BMPs.
- **Compliance Assurance.** They provide an ongoing mechanism for MSD to ensure BMPs are operated and maintained in accordance with permit requirements. Too often, detention basins put into service when properties are first developed are not adequately maintained to ensure they continue to provide the same level of service they provided when they were first installed. This can result in reduced capacity through silting or clogged/nonfunctional bottom orifices.
- **Control Optimization.** They provide a mechanism to optimize BMP performance relative to available capacity in the collection and treatment system. One example is optimizing the size of detention basin orifices to ensure the BMP isn't detaining flow that the CSS can handle, but starts detaining flow at levels the CSS can't handle. As capacity in the CSS improves as a result of system-wide improvements, the size of bottom orifices can be increased to protect the CSS and mitigate CSOs during higher rainfall events. Site-specific performance optimization is made possible through MSD's extensive monitoring and modelling of the CSS.

- **BMP Upsizing or Private-Side Separation.** The site-specific evaluation under the permitting process may identify properties where there is a benefit to MSD for the nondomestic User to either “upsized” its wet weather BMP or to separate non-impacted stormwater to divert it to an outfall that is not tributary to the CSS. Users may be incentivized to reduce wet weather flow by lowering their Surcharge for EWWF (see below). Where there is substantial CSO mitigation benefit, MSD may offer billing credits against a User’s commodity charge for further reduction of wet weather flow. Finally, under the right conditions, MSD may reimburse for capital expenditures pursuant to an MSD R&R Section 514 development agreement for capital improvements to be dedicated to MSD for public use.

## 2. WTS Surcharge for Excess Wet Weather Flow

Similar to the WTS Surcharge for conventional pollutants (TSS, BOD, and TKN), the WTS Surcharge for EWWF for nondomestic sources will be based on the amount of wet weather flow that exceeds wet weather flow for domestic (“normal strength”) sources. EWWF will then be multiplied by a unit rate that accounts for the costs associated with collection and treatment of each unit of EWWF. Additional analysis is required to confirm both excess quantity calculation as well as the Surcharge rate for excess wet weather. Below are the initial concepts.

**Determination of EWWF.** The average domestic source in the combined area of MSD’s sewer district has about 1,800 square feet (SF) of IA. With 44 inches of rainfall annually in Cincinnati, those 1,800 SF of IA generate approximately 66 CCF (hundred cubic feet) of wet weather flow annually. The average residential customer uses about 64 CCF of metered water annually (based on GCWW billing records). Therefore, MSD collects and treats about 1.03 CCF of wet weather flow for each 1 CCF of metered flow from the average domestic source. EWWF from a nondomestic source is calculated by determining its average annual wet weather flow and then subtracting from that 1.03 times the metered flow for the source. If the number is positive, then the source has EWWF. If the number is not positive, then the source does not generate EWWF.

*As a simplified example, consider a nondomestic source with 3 acres of IA tributary to the CSS that discharges about 4,800 CCF of wet weather flow to the CSS annually. If that nondomestic source used 2,000 CCF of metered water annually, then they would be discharging about 2,740 CCF of EWWF to the CSS on an annual basis, where  $EWWF = 4,800 - (1.03 \times 2,000) = 2,740$  CCF.*

Each source will have to be evaluated to determine its EWWF, considering the following additional factors:

- IA that is not tributary to the CSS is excluded from the evaluation of EWWF (e.g., discharges to a separate storm sewer not tributary to the CSS; stormwater outfalls that discharges directly to receiving waters; or discharges to a retention basin or infiltration swale that is not tributary to the CSS);

- The presence of supplemental meters, including “add” meters for water consumed that is not metered from the water utility (e.g., private wells or surface water), and “deduct” meters for metered water that is not discharged to MSD (e.g., irrigation to pervious areas or water incorporated into a product like beer or wine);
- Sources with an effluent meter (e.g., a Parshall Flume) will not be assigned EWWF for any IA that is tributary to the discharge point served by an effluent meter;
- A credit against the EWWF Surcharge will be given for existing BMPs that mitigate wet weather impact on CSOs. That is, to the extent EWWF is mitigated by existing BMPs, the source will not be subject to the EWWF Surcharge. MSD will establish rules for required mitigation to avoid EWWF Surcharge.

**Determination of Surcharge Rate.** MSD will work with a rate consultant to develop an appropriate and defensible Surcharge rate, which is anticipated to be based on cost of service for collection and treatment of excess wet weather flow. While wet weather flow carries with it pollutants in the form of TSS, most of attributable cost is associated with hydraulic demand on the collection and treatment system (i.e., larger pipes, pumps, tanks and more energy required running lift and pump stations).

The EWWF Surcharge would not be creditable against the Surcharge for conventional pollutants. That is, if a nondomestic user is sending less WWF than the average domestic source, but is being surcharged for TSS, BOD, or TKN, they will not be able to reduce their conventional pollutant surcharge because their WWF is less than domestic WWF.

For ease of billing and calculation, the average annual rainfall would be distributed evenly across the year. Where a nondomestic source has BMPs that mitigate EWWF, a credit will be applied to reduce or even eliminate the Surcharge. Additional work is required to establish the basis for credits, but they could be driven by the percentage to which the BMP mitigates WWF to a target standard (e.g., a two-year storm; or the difference between a 25-year storm and 10-year storm). Establishing the target standard for BMP credits will require additional analysis.

### **3. Schedule and Budget for Implementation**

**Program Preparation.** During the initial six months of program implementation, MSD would complete the required work to stand up the EWWF general permitting program. This will require development of the EWWF General Permit, the permit application form, and guidance on completing the permit application and preparing the required SWMP. MSD’s target date for completing the EWWF General Permitting materials is fourth quarter 2026, pending Board approval and funding. MSD will then provide proposed changes to MSD R&R required to implement the EWWF General Permit and the EWWF Surcharge. After initial information is collected and evaluated, MSD will complete a cost of service study to develop the unit rate for the EWWF Surcharge and prepare necessary legislation for the Board to approve the same.

**Schedule for Top 500 Processing.** Beginning in 2027, MSD will provide notification to the first “class” of properties subject to the new EWWF General Permit requirements. The Top 500 properties have been divided into four classes with approximately equal total IA in each class. The first class includes the properties with the largest IA and includes the lowest number of class members. Class size increases from year 1 through year 4, the range of IA for properties in each class decreases. Table 1 shows a breakdown of the range of size of properties in each class, the number of properties, the total and average IA, and the total (maximum WWF for each class based on the total IA).

**Table 1 – Distribution of Top 500 Users**

Class	IA Acres (Range)	Number of Properties	IA Acres (Total)	Average IA Acres	Total WWF Based on Total IA (CCF)
1	10 - 41.5	42	585	13.9	868,957
2	5 - 10	86	575	6.7	854,103
3	3 - 5	187	706	3.8	1,048,690
4	2-3	195	484	2.5	718,932
<b>All Classes</b>	<b>&gt; 2 acres</b>	<b>510</b>	<b>2350</b>	<b>4.6</b>	<b>3,490,681</b>

Each class will move through a five-year cycle that includes the following five steps:

- **Year 1:** MSD works with each class member to complete EWWF permitting
- **Year 2:** MSD notifies each class member of:
  - projected EWWF Surcharge (if any), and
  - opportunities for additional mitigation of WWF
- **Year 3:** MSD surcharges at 33% of the full surcharge rate
- **Year 4:** MSD surcharges at 67% of the full surcharge rate
- **Year 5:** MSD surcharges at 100% of the full surcharge rate

Table 2 shows how the “Top 500” population will be sequenced through the process.

**Table 2 – Sequencing the Top 500 Users**

	Class 1	Class 2	Class 3	Class 4
<b>FY 27</b>	Permit	--	--	--
<b>FY 28</b>	Evaluate	Permit	--	--
<b>FY 29</b>	33% surcharge	Evaluate	Permit	--
<b>FY 30</b>	67% surcharge	33% surcharge	Evaluate	Permit
<b>FY 31</b>	100% surcharge	67% surcharge	33% surcharge	Evaluate
<b>FY 32</b>	100% surcharge	100% surcharge	67% surcharge	33% surcharge
<b>FY 33</b>	100% surcharge	100% surcharge	100% surcharge	67% surcharge
<b>FY 34</b>	100% surcharge	100% surcharge	100% surcharge	100% surcharge

**Budget Requirements.** Initial staffing is proposed at 2 full-time equivalent positions (FTEs) to support program development and early implementation. A non-represented scientist or engineer will lead program creation, contract management, and strategic direction, with reporting aligned to either the Superintendent or Wastewater Analytics Supervisor based on organizational needs.

As the program matures, 1-2 additional FTEs are anticipated to be phased in within the existing Industrial Waste Section. These positions will likely report to the Pretreatment Coordinator, with workload distributed across the section to support integration of this program alongside other core pretreatment functions.

At full implementation, total staffing costs are estimated at approximately \$500,000 annually, with phased growth aligned to program needs and available funding. Contract support will be required from program initiation through ongoing operations. Associated costs will be evaluated annually and adjusted through the budget process to reflect program demands.

#### **REQUESTED ACTION**

MSD is requesting the Board's approval to proceed with the next phase of implementation, including development of the General Pretreatment Permit, completion of the cost-of-service study to establish the excess wet-weather flow surcharge rate, preparation of necessary revisions to MSD's Rules and Regulations, and the addition of one full-time equivalent position to support program development. Advancing these actions will position MSD to return to the Board with a fully developed program, including final permitting framework and rate structure, for consideration and approval.