SEWER OVERFLOW RESPONSE PLAN

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Introduction

1.1. Purpose of the Sewer Overflow Response Plan

The purpose of the Sewer Overflow Response Plan (SORP) is to support an orderly and effective response to reports of sewage surfacing or discharging from our collection system. The SORP provides the guidelines MSD uses for responding to, cleaning up, investigating, monitoring, and reporting of discharges regardless of their source. This document combines the previously separate plans for overflow response (Interim Partial Consent Decree (IPCD) Exhibit 6) and SSO monitoring and reporting (IPCD Exhibit 5) in alignment with MSD’s holistic view of sewer overflow management. This plan supersedes the former separate documents.

MSD’s SORP Plan is designed to ensure that reports of a sewer overflow are quickly dispatched to the appropriate MSD personnel for response, and that appropriate response actions are taken to address each overflow including proper notification to the Regulatory agencies. This plan is intended to address response to sewer overflows from any point in either the combined or separate sewer system to the external environment. This plan is not intended to provide detailed overview of how MSD responds to sewage-in-basements (sewer back-ups -SBUs). Procedures for addressing SBUs follow much of the same workflows, however are given a higher priority of response due to their acute human health impacts. (The MSD SBU program is defined in the Consent Decree with specified response by an MSD field crew within four hours of the customer report.) Additionally, overflows indicated solely by a hydraulic model are not addressed by this document. Rather, the SORP addresses actual overflow events that are reported or identified through field investigations. When a planning effort is undertaken by MSD, then modeled overflows will be further vetted and in-depth, analysis and monitoring will be conducted. This is consistent with federal USEPA guidance.

1.2. Definitions

Combined Sewer Outfall: an enumerated overflow point that provides hydraulic relief to a sewer that is conveying combined flow (sanitary sewage and stormwater).

Combined Sewer Overflow: a discharge from an outfall identified as a combined sewer outfall in MSD’s current NPDES permit.

Pump Station Outfall: an enumerated overflow point that provides hydraulic relief to a sewer that is directly served by a remote pump (or lift) station.

Pump Station Overflow: a discharge from an outfall identified as a pump station outfall in MSD’s current list of active enumerated outfalls.
Sanitary Sewer Outfall: an enumerated overflow point that provides hydraulic relief to a sewer that is conveying sanitary sewage only.

Sanitary Sewer Overflow: a discharge from an outfall identified as a sanitary sewer outfall in MSD’s current list of active enumerated outfalls.

Sewage surfacing: an observation of sewage being released to the environment that could be either sanitary or combined.

Sewer Back Up: for the purpose of this document, sewer back-ups (SBUs) are not considered sewer overflows and therefore are not covered by these procedures. SBUs are handled via very similar practices but are given higher priority in response than sewer overflows or reports of sewage surfacing. The SBU Program is detailed in a separate document.

1.3. Objectives of the SORP
- Protect public health and the environment
- Satisfy regulatory agencies and discharge permit conditions that address procedures for managing sewer overflows
- Protect private and public property
- Protect MSD personnel
- Protect MSD owned facilities
- Provide good customer service
- Minimize risk of enforcement actions against MSD

1.4. Goals of the SORP
- Understanding of roles and responsibilities in the response of overflow/discharges of sanitary or combined sewage.
- A means to gauge the level of potential impact promptly to dispatch the proper resources immediately.
- Identification of Actions to be taken by MSD and what actions emergency contractors will undertake.

1.5. Overview of Sewer Overflows

There are two general sources of wet weather and/or capacity-related discharges and they are monitored and reporting in distinct manners:

1) Discharges from an “enumerated location.” “Enumerated locations” are the combined sewer, sanitary sewer or pump station outfalls that have been identified to the Ohio EPA as capacity-related hydraulic relief points in the collection system. All active enumerated locations are monitored and reported in accordance with this plan.

2) Discharges from a “Non-enumerated location.” “Non-enumerated” locations are points where sewage escapes from the collection system that is not an enumerated location; typically manhole lids. Non-enumerated overflows are generally caused by higher than normal rainfall and/or higher than normal ground water condition, or a flow restriction due to an isolated sewer clog or pipe failure. When discharges are observed to occur from non-enumerated locations, MSD
utilizes the procedures detailed in this plan to determine the source, cause and eventual resolution to the discharge. The detailed flowchart of the procedure is provided in Appendix A.

During a wet weather and/or capacity-related discharge, the sewer system may be surcharged and therefore may not have capacity to return the overflow to the sewer system. In many cases, the overflow discharge point is a rain-swollen creek or a direct-connection to a storm sewer. A wet weather, capacity related SSO discharge response may be different than a dry weather SSO discharge response, or the response to a wet weather SSO caused by a localized pipe failure or blockage. At a minimum, MSD provides the following for SSOs:

1) Proper notification procedures so that the primary responders and the regulatory agencies are informed of SSOs in a timely manner. Sanitary Sewer Overflows shall be reported in accordance with this plan while notification CSOs is performed in accordance with MSD’s National Pollutant Discharge Elimination System (NPDES) permit. This plan identifies the officials who receive immediate notification;

2) A program to ensure appropriate response to overflows;

3) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the SORP and are appropriately trained;

4) Procedures to address emergency operations, such as traffic, crowd control and other necessary response activities; and

5) A program to ensure that reasonable steps are taken to contain untreated wastewater, prevent discharge of untreated wastewater to waters of the State, and minimize any adverse impact on the environment resulting from the SSOs.

Where not precluded by surcharge, high flow or drainage course-flooding conditions, the response to wet weather capacity related and localized blockage caused SSOs will be the same as to that for dry weather CSO/SSOs.

The SORP response to an identified discharge from a “Non-Enumerated Overflow Location” would result in:

1) Field-verifying the initial report of a discharge;

2) Determining if the discharge is the result of a sewer system overload from storm water entry, and/or high ground water;

3) Making field inspections of the location at 24-hour intervals until discharge ceases;
4) Cleanup discharge debris from locations of normal public access after the storm water runoff flow has receded;

5) Identifying pipe repairs will be initiated as soon as site and sewer conditions allow reasonable work conditions; and

6) Conducting a non-enumerated overflow assessment.

1.6. Updating and Maintenance of the SORP
Except for material modifications to provisions pertaining to determining whether there will be continuing discharges from newly discovered outfalls (which must first be approved in writing by US EPA and Ohio EPA), the SORP is subject to modification by the Director of MSD. The Director may elect to make such modifications to account for changes in circumstances such as changes in the configuration of MSD facilities, the purchase of new equipment, changes in regulatory requirements, the development of new technologies, or changes in industry standards/best management practices. MSD will continue to report any such modifications to this Plan in the annual report required by Paragraph IX.C of the Consent Decree.

MSD updates the SORP on an as-needed basis to reflect revisions to its NPDES permit, Adaptive Management of the wet weather improvement program (WWIP) and new initiatives that MSDGC develops for improved performance. The last update of the SORP was March 2012. This May 2018 update reflects numerous changes including formatting, newly created as well as updated workflow procedures. Refinements using technology and real time monitoring will continue to change how we implement the SORP; however, the overall approach is outlined in this update.
Section 2.0 MSD System

The sewer system covers approximately 414 square miles and serves a population in excess of 800,000 including residences and industries. MSD operates and maintains over 3,150 miles of sanitary and combined sewers, seven major wastewater treatment plants, numerous package treatment plants, package lift stations, and major pumping stations.

Figure 1 depicts the MSD service area that outlines the area served by sanitary and combined sewers. In general, sanitary sewers serve the areas built-out within the service area after 1960s. Combined sewers exist primarily in the older and downtown areas and serve portions of the Duck Creek, Mill Creek, Muddy Creek, Rapid Run, and River Road drainage areas. Overflows from enumerated outfalls are monitored and tracked by MSD’s Watershed Operations Division. Should there be a notification or alert of an overflow from a point not currently identified as an enumerated overflow, MSD has systems in place to investigate, evaluate and determine the appropriate response. This plan provides more detail about how and what MSD does in these scenarios.

In 2013, MSD formed a new division of the utility – Watershed Operations. Watershed Operations was developed to aide MSD by specifically being responsible for the operation and maintenance of wet weather facilities and enhance the use of information technology and knowledge of the wet weather assets to ultimately improve the day-to-day monitoring and surveillance at SSO and CSO locations noted in Figure 1. MSD upgraded its remote telemetry units (RTUs) in 2015 using new low power modems deployed the first-of-its-kind Wet Weather Supervisory Control and Data Acquisition (SCADA) system to collect, report, and act on overflow data coming from the field.
Figure 1 – CSOs, SSOs, WWTPs within MSDGC.

All CSOs and SSOs have sensors to assist in alerting to and reporting overflow events. At the time of publication of this document, there are level sensors at 202 CSOs, 53 SSOs, 21 enumerated PSOs, and 16 non-enumerated overflows. Watershed Operations Division monitors all overflow points in the collection system and Wastewater Collection Division sends out crews as necessary to address such events and needs. Wastewater Treatment monitors the pressurized system.
Figure 2 provides a screenshot from MSD’s Wet Weather SCADA system – this is a sophisticated, real-time data-driven tool that allows MSD to observe flows within the collection system. For example, when it rains in one part of Cincinnati, the interceptor sewers in that location may be full, but other areas where it has not rained may have available capacity. Using sensors to measure real time flow levels, this information can then point to opportunities for MSDGC to store flows inside large interceptor sewers, storage tanks, and high-rate treatment facilities in different parts of the sewer system using remotely operated gates and valves to direct the flows.

New low-cost level sensors were installed in 2015. These units have extremely low power requirements and robust communications options. The units are widely deployed in the collection system to provide the most advanced warning of flow increases to the SCADA system.

Every overflow point is monitored by a level sensor which provides data to this SCADA in real-time which then graphically displays the data and includes maximum dry weather flow levels as well as high warning levels, and overflow levels. The system also collects rainfall data in real-time so if the level rises above an alert threshold without rain being detected, it automatically alerts to a possible dry weather overflow event occurring and enables MSD to proactively dispatch field crews. The system also alerts the MSD Dispatcher when wet weather overflows start and when they have continued beyond the rain event, enabling cleanup of plugged or clogged underflows. By having access to this information through the Wet Weather SCADA, MSD is alerted to overflow conditions as they develop and before they occur. This helps keep sewage in the pipes and out of our creeks.
Section 3.0 Overflow Response Considerations

This section lays out general response considerations while Section 4 provides initial response workflows and considerations to various scenarios. These are not intended to cover all potential situations MSD may encounter or deal with but will frame how personnel approach response to overflows.

3.1 Overflow Locations

Sewer overflows will typically occur more frequently at or near the following locations:

- Sanitary Sewer Overflow (SSO) structures
- Combined Sewer Overflow (CSO) structures
- Pump stations
- Through tops of manholes

The response actions to sewer overflows depends in part if they occur at enumerated SSO or CSO locations, rather than arbitrary points in the collection system. Enumerated locations are those which are configured to provide hydraulic relief to the system during wet-weather conditions. Designed structures like this are generally equipped with overflow pipes or weirs set at a level to minimize the potential for water-in-basement incidents and will convey the maximum possible flow downstream for treatment.

The impacts of sewer overflows are well documented in the WWC O&M Manual. Additionally, locations involved in the Sewer Back-up (SBU) Program have been managed to eliminate or mitigate the overflow at the source, implement property-specific control measures and/or compensating residents where property damage has occurred. MSD’s SBU Program is comprehensive and has resulted in the gradual reduction of impacted properties. However, given the impacts associated with more frequent and intense rainfall in the last several years, damages and cleanups are on the rise.

3.2 Types of Overflows

The location and situations under which sewer overflows occur determines the type of response taken. Figure 1 shows a map of combined and separated sections within the MSD system. Table 1 summarizes types of overflows and the required response. MSD’s WWC crews utilize Table 1 as well as an electronic workflow to determine the level of response for each type of overflows. Appendix B provides examples of electronic workflows used by MSD field crews in response activities.

3.3 Overflow Destination

The “destination” is the ultimate point where a sewer overflow enters the environment once it leaves the collection system. An understanding of this is necessary to ensure the proper execution of an overflow response.

Typically, sewer overflows will end up in one or more of the following destinations:

- Pooled in low areas adjacent to an overflow
- Surface streams
- Storm sewers and then ultimately a surface stream or ditch
- Basements – MSD SBU Program is implemented with separate response procedures and these occurrences are reported in the quarterly consent decree report.

3.4 Size of Tributary Area

By knowing the size of the area upstream, the crew has an idea of flow rate and volume discharged.
Second, if industries are upstream, crews can determine if special industrial pollutants may be encountered. This will assist in determining whether special safeguards must be taken. In the CAGIS Mapping, system there is a Sewer Trace Tool that identifies the sewers upstream or downstream from a given point or SSO location. The length of sewer found in the trace is provided along with a graphical display of the sewer locations. This information is available in the field laptop computers and the office desktop computers.

MSD maintains a database of permitted industrial users. The company address is used to graphically display the location in the CAGIS Mapping system. The Sewer Trace Tool can also identify industrial users upstream or downstream from a given point or SSO location.

3.5 Site Accessibility

Site accessibility is an important factor in determining the response to a sewer overflow. To address limited access site conditions, MSD has track mounted loaders, bulldozers and backhoes to repair sewer failures, and four wheel drive farm tractors for flush cleaning and CCTV inspection. If truck mounted equipment is required to address an overflow, a temporary road will be constructed. The response to a sewer overflow in areas of limited accessibility is determined on a case-by-case basis. As part of the capital program, MSD is designing or has constructed projects to improve the accessibility of enumerated overflow points.

3.6 Weather Conditions

The sewer systems are either combined or sanitary. The system is subject to infiltration and inflow. The sewer overflow response will depend on recent precipitation in the upstream sewershed. This is particularly important if bypass pumping is necessary or if the repair is being performed in a combined sewer.

3.7 Safety Precautions during Response

The responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. Special consideration should be given to following all local traffic, confined space, and safety procedures. Enumerated overflows are posted with appropriate signage per the NPDES permit. When responding to a non-enumerated overflow and there is high potential for potential public exposure before crews can restore, clean up the area and there is a potential for overflow to reoccur, temporary signage maybe posted.

MSD provides and maintains numerous safety programs and training offerings that field personnel attend and participate in routinely.
Section 4.0 Overflow Response Actions

The Wastewater Collection Division is responsible for the inspection, maintenance, and repair and rehabilitation of the wastewater collection system; this includes combined sewers, separate sanitary sewers, combined sewer regulators and appurtenances. As such, it has developed service call/overflow response procedures that guide immediate response and investigation of an overflow. The responder’s priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate equipment.
- To evaluate the cause of spill and determine responsibility.
- To minimize public access to and/or contact with the spilled sewage.
- To contain the spill whenever feasible.
- To restore the flow as soon as possible.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- To promptly notify management when unable to restore the flow.

The WWC Division’s response to sewer problems received as “Request for Service” calls is rapid. Each problem is typically diagnosed within several hours and the resolution is determined on a case-by-case basis. It is difficult to document each possible response that will be or has been undertaken by the WWC Division. Overall, staff will “do whatever it takes” to resolve a problem which is under their domain. MSD’s SORP is based on the experience of individuals who exercise energy, creativity and skill on a daily basis to resolve “Request for Service” calls.

MSD’s WWC Division has a Customer Service Section that operates as the first response arm of the division by receiving and responding to customer calls indicating potential sewer problems. It is staffed to operate from 7:00 a.m. to 8:30 p.m. every day, including holidays and weekends. The few calls outside these standard hours (or when call volume cannot be maintained due to significant wet weather events) are also logged in real time by a contracted answering service (currently Live Reps) that are trained to use MSD workflows in Cityworks (WWC’s maintenance management software).

The WWC Division’s Customer Service Section includes supervisors and dispatchers (office personnel) as well as crew leaders and utility technicians (field personnel). Dispatchers are responsible for answering and logging customer calls, dispatching work orders to field crews, and coordinating the workload to maximize the section’s efficiency. Field crews are responsible for conducting thorough field investigations of reported sewer issues and performing preventative maintenance on CSOs. Schedules for both field and office personnel are staggered to meet business and customer needs based on analysis of historic call volume, and are subject to periodic adjustments as required. During an event outside of standard hours, Live Reps notifies a supervisor; the supervisor makes the decision whether to call in an overnight emergency response crew or not (and address the issue at the beginning of the next business day).
4.1 Overflow Occurrences – How MSD is alerted to and initially responds to overflows

MSD is alerted to an overflow or a discharge, generally in three ways.

1) Public observation: This is the most common way that MSD is notified of potential blockages and spills from non-enumerated sites. Contact information for reporting sewer spills and backups are in the phone book and on the website: www.msdgc.org. The main telephone number for reporting overflows or a request for service is 513-352-4900. It is clearly communicated to the caller who will respond, the estimated time of arrival, and what areas will need to be accessed.

   Initial action:
   a. Normal Working Hours – From 7:00 a.m. through 8:30 p.m. every day, WWC dispatchers answer customer calls and respond to customer emails indicating a potential overflow.
   b. After Normal Working Hours – After working hours, MSD utilizes a contractor, “Live Reps” answering service, which uses the same work order creation system to capture information and dispatch crews as the WWC dispatchers.

2) Receipt of automated alerts: MSD obtains operational data from pump stations, constructed outfalls and other parts of the collection system that are monitored using cellular telemetry and integrated with its Wet Weather SCADA system.

   Initial action:
   a. The system alerts the MSD Dispatcher when sewer levels rise beyond an alarm threshold and no rain is detected in the area and the Dispatcher initiates a response using the same work order creation system described above.

3) Staff or contractor observations: Field crews and contractors perform routine and periodic work on the sewer system facilities, which may result in identifying an overflow.

   Initial action:
   a. Any problems noted with the sewer system facilities are reported to a Supervisor, who, in turn, proceeds with the appropriate overflow response.
   b. If personnel are in the field separate from an MSD Supervisor, they may also call the MSD Dispatcher at 513-352-4900 and initiate a sewage surfacing report.
   c. If personnel have access to MSD’s intranet, they may submit an Internal Service Request which will be routed to the Asset Management group in WWC to initiate an investigation.

Sewer service calls and pump station alarms are considered high priority events that demand a prompt response in addition to Service Requests from customers.

MSD’s workflow for responding to these reports is provided below as Figure 3.
Figure 3 – MSD Initial Response to a Report of Sewer Overflow

MSDGC Initial Response to a Report of Sewer Overflow

Call Center Dispatchers

- Log Service Request, create Sewage Surfacings Investigation work order
- MSD Notified of Sewage Surfacings (customer call) or CSO/SSO/PSO dry weather activation (automated email)

Initial Response Team

- Enumerated Overflow Point?
- Reprioritize existing CSO/SSO/PSO PM work order to Emergency status
- Dispatch work order to first available Response Team

Overflow is currently active?
- Yes: 
  - Apparent MSD issue?
    - Yes: 
      - Able to fully resolve issue?
        - Yes: Initiates EPA notification work order (initial notice)
        - No: Initiates appropriate work orders for Specialized Response Teams to address surfacing sewage.
    - No: Informs Property Owner, EPA, and Responsible Board of Health
    - Closes work order

Supervisor

Signs of Overflow?
- Yes: Initiates EPA notification work order (initial and final)
- No: WWIC works to correct problem. Asset Management group sends update notifications every 5 days to apprise EPA of status.

Asset Management

- Possible MSD issue?
  - Yes: Schedules follow-up investigations as appropriate.
  - No: Initiates Root Cause Analysis of event.
  - Issue resolved, Asset Management sends final EPA Notification of resolution.
  - Closes work order

Capacity Related?
- Yes: Initiates Non-Enumerated Overflow Assessment Process
- No:
4.2 MSD Roles - Who does what to respond to Overflows

MSD’s Wastewater Collection Division (WWC) is the first line of defense in responding to overflows. WWC is fully equipped with personnel, equipment and supplies to perform most maintenance and repair projects that may arise due to malfunctions in the collection systems; however, there are times that the WWC Division finds it to be more expedient to utilize emergency contractors.

Typical tasks for the WWC Division include cleaning lines and performing maintenance and repairs on various elements of the collection systems including CSO regulator structures. With their in-house machine shop, the WWC Division has the capabilities to fabricate parts for CSO regulators that are no longer commercially available.

4.2.1 Dispatchers - The Dispatchers are the first line of contact with the public. The Dispatch Office is used to keep reports once the response teams are done with a call. All records are maintained in an organized manner and available to MSD personnel.

Dispatchers collect information over the telephone in a calm, friendly and professional manner. This task may be complicated by the fact that the person calling may be upset, confused or unknowledgeable about the problem being experienced. During normal working hours, the Dispatchers work out of the WWC Division at 225 W. Galbraith Road. During evenings, the Live Reps call taker, who in turn contacts “on-call” supervisors if the reported problem warrants immediate additional evaluation or supervision, receives calls. The Dispatchers have the authority to cross over MSD Division lines to obtain the assistance of any supervisor or secure any equipment that may be necessary to resolve the problem. History of third shift requests for service does not justify a full time third shift Dispatcher.

4.2.2 Supervisors: The second key positions are the “Supervisors”. These persons hold positions of supervisory authority under the Customer Service Supervisor. Supervisors work with the crews to resolve sewer maintenance problems and serve as a liaison between the crews and the Superintendent. During normal working hours, supervisors are available to handle problems as they arise.

During evenings and weekends, problems are referred to the “Supervisor on Call” or the first or second backup “Supervisor on Call” by the Dispatch. Industry standard communication technology is used to contact “on call” supervisors with any requests for service. The “on call” supervisor calls out the appropriate crew.

4.2.3 Initial Response Teams: The third group is the Initial Response Teams, comprised of Customer Service field personnel. They are responsible for finding the location of the problem, communicating with the affected public, accurately evaluating the problem, communicating their findings to the Supervisor, and then taking necessary steps to resolve the problem. MSD maintains adequate staffing to meet these responsibilities. The WWC Division currently has 10 Customer Service Field Crews, with shifts scheduled to maximize response efficiency based on historic call volumes; history of third shift requests for service does not justify a full time third shift Field Crew. If these staffing levels change, notice shall be provided in the annual report required by Paragraph IX.C of the Consent Decree.

Response Team activities may include rodding or manually cleaning the sewer line. If these activities do not fully contain and eliminate the surfacing sewage problem, the Field Crew is responsible for communicating the extent of both the issue as well as their efforts, and work with the supervisors to plan and execute an acceptable remediation strategy as appropriate. (See sections 4.2.4 and 4.2.5 below.)
4.2.4 Specialized Response Teams: The Specialized Response Teams are comprised of other WWC field personnel and include Sewer Assessment (CCTV) Crews, Flush/Vac Crews, and WWC Sewer Repair Crews. Their responsibilities vary based on the specific nature of their equipment as well as the problem, and may include the mobilization of construction equipment to “dam-up” an area of sewer overflow and then recover it by pumping. As a final step, the impacted area may be flush/pumped and deodorized.

There may be instances where the resources needed to adequately address a problem require effort beyond MSD resources. This is particularly true of main line breaks where there is a risk of a significant sewer overflow. In these situations, MSD may enlist the aid of an emergency contractor. MSD maintains a general services agreement with several companies for situations that require the prompt reconstruction of sewer lines.

4.2.5 Emergency Sewer Repair Contractors: The Wastewater Collection Division Asset Renewal Section normally manages the Emergency Sewer Repair Contractors (ESRCs); however, the On-Call Supervisors have full authority to call out any of the ERSCs if a sewer failure requires additional resources.

These companies are capable of mobilizing construction equipment and personnel quickly to handle emergency assignments. Typical projects may include the reconstruction of sewers damaged in hill slides and those with severe structural failure. The MSD contracts for emergency sewer repairs typically require the contractor to respond to the site within 4 hours of notification to mobilize. This response time and the level of response will vary because of several factors; some are:

- Location of the sewer repair in relation to the contractor’s equipment yard.
- Scope of the repair, size of sewer, depth of sewer and volume of flow.
- The size, type and availability of equipment and number of workers.
- The time of day, day of the week and the proximity to a holiday
- Weather conditions, clear, rain, snow, extreme cold or heat

4.2.6 Division Management: The Superintendent is in charge of the WWC Division and reports to the Director. Although the Superintendent will normally not be personally involved in most service calls, he/she is administratively responsible for activities performed by the Division, including all fiscal and budgetary matters and coordination with the Director’s office. The Superintendent also is a valuable technical resource who is knowledgeable in the design, construction and maintenance of collection systems and is therefore, frequently involved in devising strategies and directing actions to solve the most complicated problems.

4.2.7 Departmental Management: The Director is the administrative head of the MSD with a Deputy Director overseeing the operational needs and is responsible for the activities of all operating divisions. Although the Director or Deputy will not be involved in the day-to-day activities of the WWC Division, he/she must be apprised of situations that may gain the attention of the public-at-large, the media or the Regulators. In this manner, the Director or Deputy can inform the Hamilton County Commissioners and the City Manager, if warranted.
4.2.8 Regulatory/Operational/Engineering Coordination: Upon a non-enumerated overflow being identified, MSD has convened a cross functional workgroup that works through a workflow to evaluate and determine if an overflow that has been observed should be considered a wet weather capacity overflow which requires a WWIP index number. This cross-functional team utilizes the workflow in Appendix A and reports this information in quarterly reports, as discussed in Section 6.

4.3 Initial Response to an Overflow

Once an MSD WWC receives a report of an overflow, a “Requests for Service Call” (Request) is initiated and MSD’s responder manages the Request to gain the necessary information to respond appropriately and in a timely manner. Upon notification of an overflow, the WWC-responder acts as soon as feasible after initial notification of the discharge/spill.

The MSD-responder evaluates the information received from the report with the circumstances to determine the appropriate response measures (e.g. weather and traffic conditions, backup vs. sewage flowing on the ground, etc.). If additional help is needed, the MSD-responder may contact his/her supervisory, contact other employees, contractors, and/or equipment suppliers.

Contact information for MSD personnel and emergency contact information is available in the Appendix C. Based on available information; the responder should determine the necessary response resources that are needed.

Upon arrival at the site, the responder should:

- Note arrival time at spill site (logging info into Cityworks via a Flowfinity guided workflow)
- Verify the existence of a sewer system spill or backup.
- Field verify the address and nearest cross street, making sure it’s part of MSD’s sewersystem.
- Identify and clearly assess the affected area and extent of spill.
- Comply with all safety precautions (traffic, confined space, etc.)
- Contact caller, if time permits.
- Notify the on-call Supervisor to determine necessary follow up actions, such as
  - If the spill appears to be large, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed; or
  - Additional help is needed for line cleaning or repair, containment, recovery, sampling, and/or site cleanup.
- It is recommended to document conditions upon arrival with photographs (if the activity does not interfere with SSO recovery and clean up).

4.4 Restoration of Flow

Based on the type of overflow, staff are fully trained on using an electronic workflow and tools so that, upon arrival, the responder evaluates and determines if flow is blocked. If the discharge was caused by a blockage in the MSD sewer main and if so, what contributed to the blockage – either FOG (fats, oils and grease) discharge, nearby O&M or construction activities.

The responder should attempt to remove the blockage from the system and restore flow to the area. Using the appropriate cleaning tools, the field crew should set up downstream of the blockage and hydro-clean upstream from a clear maintenance hole. The flows should be observed to ensure that the blockage does not recur downstream.

- If a blockage is found in a property owner’s lateral, it should be clearly communicated
that it is not the District’s responsibility to work on a private lateral. Recommend that property owner or tenant contact a qualified plumbing contractor to remove the blockage.

- If the blockage is found to result from FOG (usually from a restaurant), notify Regulatory Compliance to follow up with potential inspection or enforcement.
- If a backup in the main line is found to have caused the SSO in a house or building, relieve the blockage in the main line and refer the work order as an SBU.

Restoration of flow is dependent upon various field conditions that make each overflow response similar but unique. The electronic workflows and job aids are developed for unique scenarios for the system to give field crews information that is available through iPads devices. Once the sewer has been cleaned and the flow is back in the pipe, photos are taken, showing sewer flowing and no longer by passing and notifications as updated on computerized CSO forms.

If the blockage cannot be cleared within a reasonable time, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers.

4.4.1 Pump Station or Forcemain Facilities

For potential pump station or forcemain failure, MSD conducts the following:

- Determine whether flow can be restored within a reasonable time.
- If it appears that flow cannot be restored within a reasonable time or if the conveyance system facility requires construction and/or repairs, then employ contingency plans covering containment, bypass pumping, portable electric generators, contractual assistance, etc.

If assistance is required, immediately contact other employees, contractors, and equipment suppliers as required.

4.5 Contain the Release

Based on the type of overflow and in consultation with the Supervisor, MSD staff use an electronic workflow which helps the responder gain resources or attempt to contain as much of the sewage as possible using the following steps:
• Determine the immediate destination of the overflowing sewage.
• Plug storm drains using available equipment and materials to contain the release, whenever appropriate. If sewage has made contact with the storm drainage system, attempt to contain it by plugging downstream storm drainage facilities.
• Contain/direct the sewage using dike/dam, sandbags, or other available containment materials.
• Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow.
• If sewage is inside of a house or building because of a mainline issue, the property owner should be referred to SBU program.

4.6 Recovery of Sewage (dry weather release)

Based on the type of overflow and in consultation with the Supervisor, MSD’s electronic workflow guide staff in the recovery and clean up phase when the flow has been restored and sewage has been contained to the maximum extent practicable. Recovery may be performed by cleaning up the debris and in most cases by vacuuming/vactoring the sewage and discharging it back into the sanitary sewer system.

4.7 Clean Up and Disinfection of Affected Area (dry weather release)

Based on the type of overflow and in consultation with the Supervisor, MSD’s electronic workflow guide staff in the clean-up and disinfection procedures implemented to reduce the potential public health risks and adverse environmental impacts. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. For example, Depending on the circumstance, there may be scenarios for dry weather overflows when rakes, shovels, trashcans, and trucks are used along with sodium hypochlorite for cleanup.

4.7.1 Sewer Backup Program – Private Properties

A professional cleaning company will be referred to clean up overflows inside houses or buildings. Information is available through MSD SBU Program; MSD maintains contracts with certified black water cleaning restoration companies for such purposes. If sewage back up into a house or building occurs, the responder will provide the customer with SBU Program information (see Appendix D and http://sbu.msdgc.org/sbu/)

4.7.2 Hard Surface Areas

• Collect signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
• Take reasonable steps to contain and vacuum up the wastewater.
• Disinfect areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.
• Allow area to dry. Repeat the process if additional cleaning is required.

4.7.3 Landscaped and Unimproved Natural Vegetation

• Collect signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
• Allow the area to dry. Repeat the process if additional cleaning is required.

4.7.4 Natural Waterways
Clean up should proceed quickly in order to minimize SSO impacts to any creeks, ditches, or natural waterways. If sewage has reached the storm drain system, the combination sewer jet vacuum cleaning truck should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage. Depending on the circumstance, when the discharge has made it to a waterway, it may not be practical to collect the material before it is washed downstream and in and in most cases, it may not be retrievable.

4.7.5 Wet Weather Modifications
Omit flushing and sampling during heavy storm events with heavy runoff where flushing is not required and sampling would not provide meaningful results.

4.8 Estimate the Volume of Sewage
Watershed Operations utilizes a procedure to estimate the volume of the sewage released. Currently MSD estimates overflow volume using a standard weir equation based on only one set point. This estimate of volume is what MSD uses to report to Ohio EPA and Health Departments. To calculate an estimate of volume with more accuracy, MSD is currently testing of a new calculation procedure using three set points as well as the Wet Weather SCADA system. The old calculation being phased out in 2017 and beginning in 2018, MSD new calculation method, based on EPA SWMM model will be calculated with each CSO represented by its own ‘model cutout’. Each has three boundary conditions included – upstream, downstream, and outfall-receiving stream (to account for backwater conditions). Each CSO is being represented with the most up-to-date and detailed survey measurements, inside the structure and at the manhole rim. The Wet Weather SCADA system will run each model with actual measured data to generate estimated actual overflow at each CSO per event. The ‘calculations’ are now a part of MSD’s SWMM computational model but currently, the calculation is being tested and quality checked through fall 2017 but anticipated to be ready for reporting purposes in January 2018.

4.9 Follow-up Activities
In the event that an overflow occurs at night, it may be determined that the location will be re-inspected the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

Following SSO events staff may perform a debriefing meeting after major spills events. Follow-up activities such as debriefing is a best management practice MSD uses on a variety of issues. The debriefing meeting is done when it appears that an unusual event occurred or when improvements to procedures may be warranted that could improve service levels. These SSO events provide opportunities to evaluate response and reporting procedures. After these SSO events, participants, from the person who received the call to the last person to leave the site, may meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of SSO event debriefings will be recorded and tracked to ensure the action items are completed.

More extensive information is available in the WWCD O&M Manual. Additional information on the inspection and maintenance of the combined sewer systems may be found in MSDGC CSO operational manuals; such manuals are available for the Mill Creek, Little Miami and the Muddy Creek Service Area. These manuals were prepared in accordance with a requirement in the NPDES permit for the combined sewer systems - Ohio EPA Permit No. 1PX00022*. Appendix E outlines an Organization Chart of the MSD including the Wastewater Collection Division.
Section 5.0 Overflow Assessment

Since reports of overflows can come from a variety of sources and can be caused by a variety of factors, each report is evaluated to determine the appropriate follow-up actions and ultimate disposition. This evaluation is conducted by the Watershed Operations Division, initiated by information provided by Wastewater Collection (WWC) Division personnel via their root cause analysis (RCA) of the overflow. If the RCA of the reported overflow indicates that it was capacity-related (not due to a structural failure or clog) then the capacity constraint is assessed for additional follow-up actions.

5.1 Determining Follow-up Actions

The follow-up actions performed for a report of an overflow depends on three characteristics of the overflow event: the type of sewer overflowing, whether the overflow location is enumerated, and whether the overflow occurred during wet weather conditions. Table 1 is used to determine the level of assessment performed by MSD based on these conditions.

<table>
<thead>
<tr>
<th>Type of Sewer</th>
<th>Enumerated Location?</th>
<th>Weather Condition</th>
<th>MSD Assessment Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate Sanitary</td>
<td>No</td>
<td>Dry</td>
<td>Conduct Non-enumerated Overflow Assessment. MSD uses specific criteria for determining the appropriate monitoring and reporting actions – see Table 2</td>
</tr>
<tr>
<td>Separate Sanitary</td>
<td>No</td>
<td>Wet</td>
<td>Conduct Non-enumerated Overflow Assessment. MSD uses specific criteria for determining the appropriate monitoring and reporting actions – see Table 2</td>
</tr>
<tr>
<td>Separate Sanitary</td>
<td>Yes</td>
<td>Dry</td>
<td>Once repaired or blockage is cleared, continue to monitor these areas for chronic problems in accordance with Section 6.2.</td>
</tr>
<tr>
<td>Separate Sanitary</td>
<td>Yes</td>
<td>Wet</td>
<td>Monitor and report in accordance with Section 6.2.</td>
</tr>
<tr>
<td>Combined</td>
<td>No</td>
<td>Dry</td>
<td>Conduct Non-enumerated Overflow Assessment. MSD uses specific criteria for determining the appropriate monitoring and reporting actions – see Table 2</td>
</tr>
<tr>
<td>Combined</td>
<td>No</td>
<td>Wet</td>
<td>Conduct Non-enumerated Overflow Assessment. MSD uses specific criteria for determining the appropriate monitoring and reporting actions – see Table 2</td>
</tr>
<tr>
<td>Combined</td>
<td>Yes</td>
<td>Dry</td>
<td>Once repaired or blockage is cleared, continue to monitor these areas for chronic problems in accordance with Section 6.3 and report in accordance with NPDES permit.</td>
</tr>
<tr>
<td>Combined</td>
<td>Yes</td>
<td>Wet</td>
<td>Monitor and report in accordance with Section 6.3 and report in accordance with NPDES permit.</td>
</tr>
</tbody>
</table>
In general, overflows from enumerated sites are monitored and reported in accordance with subsequent sections of this plan. Overflows from non-enumerated sites, however, are further evaluated using the Non-enumerated Overflow Assessment workflow to determine the need for new or modified capital improvement projects to address the capacity constraint.

5.2 Assessment of Overflows from Non-enumerated Locations

If the RCA performed by WWC indicates that an overflow from a non-enumerated location in MSD’s system was believed to be capacity-related, it is added to MSD’s Watch List and is evaluated using the Non-enumerated Overflow Assessment process (included in Appendix A). This process has three phases: initial assessment, extended assessment, and resolution. Table 2 summarizes the factors evaluated during the initial and extended assessment phases as well as the final resolution actions. MSD reports the status of these assessment efforts in its Consent Decree quarterly reports.

MSD first evaluates the rainfall event that triggered the overflow and whether an existing WWIP project or bundle will address capacity in this area as part of the initial assessment. If the triggering event cannot be determined (signs of overflow were reported but an active overflow was not confirmed) or if the triggering event is greater than the WWIP-applicable storm event, then the overflow location is simply kept on the Watch List. Future overflows at this location, reported through the regular methods detailed in Section 4.1, are compared against this historical record to ensure developing capacity constraints are not overlooked. If the triggering event is less than the WWIP-applicable storm and a WWIP project to address capacity in this area does not exist, then the overflow location transitions to the extended assessment phase.

In the extended assessment phase, the overflow location is first monitored using the methodology and equipment detailed in Section 6 to support regulatory reporting. If level monitoring corroborates an overflow during a rain event smaller than the WWIP-applicable storm, flow monitoring is performed as needed to build or calibrate the hydraulic model for the watershed. Fully validated overflows will be considered newly discovered outfalls and reported to the EPA in the subsequent Consent Decree quarterly report.

Based on the finding during the initial and extended assessments, the overflow location will be addressed during the resolution phase. If the outfall will persist, it will be submitted for enumeration and addition to MSD’s NPDES permit for CSOs. Once the respective project is complete, whether through an existing WWIP project or a new WWIP project, the overflow location will be removed from the watch list.
<table>
<thead>
<tr>
<th>Initial Assessment</th>
<th>Determination Criteria</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity Issue Suspected</td>
<td>Triggering precipitation greater than WWIP Applicable Storm Event or unknown triggering event</td>
<td>Not a Newly Discovered Outfall</td>
<td>Maintain on Watch List</td>
</tr>
<tr>
<td></td>
<td>Triggering precipitation less than WWIP Applicable Storm Event and WWIP project to address capacity in this area exists</td>
<td>Not a Newly Discovered Outfall</td>
<td>Add Notice of Advisement to WWIP project files</td>
</tr>
<tr>
<td></td>
<td>Triggering precipitation less than WWIP Applicable Storm Event and WWIP project to address capacity in this area does not exist</td>
<td>Potential Newly Discovered Outfall</td>
<td>Monitor per Section 5.4.</td>
</tr>
<tr>
<td>Extended Assessment</td>
<td>Determination Criteria</td>
<td>Status</td>
<td>Resolution</td>
</tr>
<tr>
<td>Capacity Constraint Ruled Out</td>
<td>No additional discharges within 2 years at less than WWIP Applicable Storm Event or Hydraulic model does not show discharge</td>
<td>Not a Newly Discovered Outfall</td>
<td>Remove Monitoring Equipment, Maintain on Watch List</td>
</tr>
<tr>
<td>Capacity Constraint Confirmed, can be Eliminated within 3 Years</td>
<td>Additional discharges at less than WWIP Applicable Storm Event and Hydraulic model shows discharge</td>
<td>Newly Discovered Outfall</td>
<td>Develop and implement project to eliminate capacity constraint within 3 years of notification</td>
</tr>
<tr>
<td>Capacity Constraint Confirmed, cannot be Eliminated within 3 Years</td>
<td>Additional discharges at less than WWIP Applicable Storm Event and Hydraulic model shows discharge</td>
<td>Newly Discovered Outfall</td>
<td>Submit outfall for enumeration; Develop project plan within 18 months of notification</td>
</tr>
</tbody>
</table>

1 MSD uses Type 2 SCS Storm Return Frequency to design; Bulletin 71 will be used for determining storm event return frequency.
Section 6.0 Overflow Monitoring

This section describes MSD’s overflow monitoring and is intended to be a living document that guides and describes the procedures used to monitor releases from its wastewater conveyance system. These procedures apply to releases in areas of its jurisdiction that are served by combined sewers, as well as those served by sanitary sewers, and irrespective of the release occurring through a structure intentionally constructed for hydraulic relief. These procedures do not cover sewer back-ups (SBUs or formerly called water-in-basement complaints) in homes or businesses, which are described in a separate plan. Finally, these procedures do not cover releases from MSD’s permitted treatment facilities. Discharges from, or bypasses at, such facilities are monitored in accordance with the respective facility’s National Pollutant Discharge Elimination System (NPDES) permit.

6.1 Overview of Overflow Monitoring at MSD

MSD has monitored its overflows using various methods. Originally, this required visual inspection and paper records, which were labor intensive. As techniques and technology have changed, the methodologies for monitoring overflows have adapted, as well. This plan is updated to include the accepted best practices of the monitoring industry.

The installation of an electronic level sensor is now the exclusive method in use to detect overflows within the collection system. (Older methods, such as using fluorescent chalk, wooden blocks or visual confirmation are only used on rare occasions for additional confirmation of overflow.) For electronic level sensing, two types of sensors are used, depending on the site conditions, to detect the depth of the flow in the sewer. As shown in Figure 4, an ultrasonic level sensor is mounted above the flow and it sends out an ultrasonic signal that is reflected by the top of the water surface and then is converted into a depth of flow. Pressure transducers are also used, but they are mounted in the flow at the bottom of the pipe to detect the amount of water pressure above it, which is translated to a depth of flow. Both types of sensors are configured to collect level data frequently, typically once every minute.

Each sensor is coupled with a recording telemetry unit (RTU) which records, analyzes and transmits the collected data. The RTU is configured with specific warning and overflow thresholds to facilitate automatic monitoring and alerting. A warning threshold level is determined to provide advance notice of an overflow event occurring in sufficient time to dispatch personnel to the field, if warranted, and to send data more frequently. Typically, each site transmits its accumulated data to the WW SCADA every hour. However, once the water level exceeds the warning threshold, determined based on each overflow point’s unique hydraulic behavior and historic performance, the site transmits its data to the WW SCADA every 5 minutes. An overflow threshold is set to correspond with the depth of flow reaching the discharge pipe, and is used to alert operational and maintenance personnel, as well as to record overflow activation. The RTU transmits this data through a cellular modem directly to MSD’s secure, in-house data center. Within the data center, it is integrated with MSD’s Wet Weather SCADA system, which handles the automatic alerting, reporting and other operational requirements.
6.2 Sanitary Sewer Overflow (SSO) Monitoring

MSD monitors enumerated SSOs and PSOs in its collection system for operational, management and regulatory reporting reasons. The monitoring of enumerated SSO and select PSO locations was initiated in compliance with the Ohio Environmental Protection Agency (OEPA) Director’s Final Findings and Orders (DFFOs), issued September 22, 1992. Over time, SSOs and PSOs have been eliminated as improvements to the collection system have been made and new overflow points have been discovered. MSD has maintained its record of enumerated SSOs and PSOs to reflect these changes and currently monitors 53 enumerated SSO locations and 21 enumerated PSOs. Monitoring of SSO activity will be performed until discharges from overflow points in MSD’s sanitary sewers and interceptors are eliminated.

Electronic level sensors are used to detect when an overflow is imminent and when it actually occurs. In some locations where the depth of the manhole is great or an unfavorable hydraulic condition exists at the bottom of the manhole, an ultrasonic level sensor is used exclusively. Under such conditions, a metal plate is mounted to the side of the manhole a sufficient distance below the overflow pipe. The level sensor is aimed at he mounted plate, rather than at the distant or turbulent water surface below, and thereby more accurately records levels approaching and surpassing the overflow point.

The WW SCADA system is continuously monitoring SSOs and PSOs, as well as the rainfall experienced by the area tributary to each overflow point. When the water level in the sewer at an overflow structure reaches its warning threshold, and rainfall has not been detected in the tributary area, an alert is sent to the MSD Dispatchers who direct response personnel to the overflow location. Response personnel then follow the procedures noted in Figure 3 to investigate and resolve a report of sewage surfacing. MSD can monitor the data from such occurrences and potentially avert a dry weather overflow from an SSO or PSO before it happens. In addition, an alert is sent to the MSD Dispatcher if an SSO or PSO continues to activate after a rain event has passed. In these conditions, the WW SCADA applies a location-specific recovery delay period.

| Figure 4 – Examples of Sensor Technology  
Left: ultrasonic sensor | Right: pressure sensor |
determined by the historical performance of that overflow point to determine if the overflow should have ceased.

Regardless of rainfall, the WW SCADA system also monitors and detects when an overflow actually starts and stops. This is captured in the database by calendar day to facilitate regulatory reporting and display on MSD’s Overflow Reporting Dashboard. If at any point during the 24-hour period, the level got higher than the SSO or PSO overflow point, it is considered an activation. If overflow continues to another calendar day, it is considered a continuation and only counted as one activation. If a continuing overflow stops and then resumes overflowing later in the same day, it is considered a second activation. Each dry weather activation generates an alert to the MSD Dispatcher for investigation and response.

6.3 Combined Sewer Overflow (CSO) Monitoring
MSD monitors the enumerated CSO overflow points in its collection system for operational, management and regulatory reporting reasons. Known, enumerated, CSOs are included in a single NPDES permit (currently permit number 1PX00022*CD) issued by the OEPA to cover all CSOs within its service area. There are 202 combined sewer overflow monitoring locations specified in MSD’s current NPDES permit, which will be monitored until removed from this, or subsequent, permit.

Per its NPDES permit, MSD collects hydraulic data at all CSO locations in order to report overflow occurrence and estimated volume for each overflow event. This is required throughout the year and under all weather conditions. The necessary hydraulic data is gathered using electronic level sensors, as described in Section 5.1. As with SSOs and PSOs, the WW SCADA system is continuously monitoring CSOs and the rain that falls in its tributary area. When the water level in the sewer at an overflow structure reaches its warning threshold, and rainfall has not been detected in the tributary area, an alert is sent to the MSD Dispatcher who directs response personnel to the overflow location. Response personnel then follow the procedures detailed in Figure 3 as they would to investigate and resolve a report of sewage surfacing. MSD can monitor the data from such occurrences and potentially avert a dry weather overflow from a CSO before it happens. In addition, an alert is sent to the MSD Dispatcher if a CSO continues to activate after a rain event has passed, taking into consideration the location-specific recovery delay period described in the previous section.

While an overflow is occurring, the electronic level sensor collects a depth of flow measurement and transmits it to the WW SCADA system every 5 minutes. This is captured in the database by calendar day to facilitate regulatory reporting and display on MSD’s Overflow Reporting Dashboard. If at any point during the 24-hour period, the level got higher than the CSO overflow point, it is considered an activation. If overflow continues to another calendar day, it is considered a continuation and only counted as one activation. However, the volume of overflow is estimated for each 24-hour period. If an overflow continues from one day to the next, the volume released in each calendar is calculated using the monitoring data, overflow structure physical characteristics, and receiving stream boundary conditions.

In addition to monitoring hydraulic conditions at each CSO, the NPDES permit also requires MSD to monitor water quality parameters at 14 specified CSO locations. These specific sites trigger customized alerts to response personnel who collect samples and deliver them to the MSD laboratory. Both the hydraulic and water quality data are reported in monthly electronic Discharge Monitoring Reports (eDMRs) for each station each month.

6.4 Non-enumerated Overflow Monitoring
If flow is released from a non-enumerated point anywhere in its system, MSD follows its Non-enumerated Overflow Investigation procedure to determine if a newly discovered overflow exists. The full procedure is illustrated in Appendix A.
1) Determines that the overflow was capacity related (not caused by a blockage or structural failure);
2) Can be confirmed to have occurred during a rainfall less than the maximum allowed recurrence interval for that class of sewer (separate versus combined), and
3) There is not a project in the Wet Weather Improvement Plan (WWIP) that will address capacity constraints in this area, the location is tracked on MSD’s Overflow Watch List and monitored.

Monitoring of these locations is achieved by the installation an electronic level sensor, as described in Section 6.1. (If site conditions do not permit electronic sensor installation, other monitoring techniques may be used on a case-by-case basis). Monitoring is conducted for up to 2 years. From time to time, MSD evaluates the best monitoring approaches and technologies to use and will modify its tools and approaches as needed.
Section 7.0 Overflow Reporting
This section describes MSD’s overflow reporting and is intended to be a living document that guides and describes the procedures followed to report releases from its wastewater conveyance system. These procedures apply to releases in areas of its jurisdiction that are served by combined sewers, as well as those served by sanitary sewers, and irrespective of the release occurring through a structure intentionally constructed for hydraulic relief. These procedures do not cover sewer back-ups (SBUs or formerly called water-in-basement complaints) in homes or businesses, which are described in a separate plan. Finally, these procedures do not cover releases from MSD’s permitted treatment facilities. Discharges from, or bypasses at, such facilities are reported in accordance with the respective facility’s National Pollutant Discharge Elimination System (NPDES) permit.

7.1 Overview of Overflow Reporting at MSD
MSD reports discharges from its conveyance system in various ways, depending on the overflow’s characteristics and the prevailing weather conditions at the time of the overflow. As techniques and technology for monitoring have changed, the methodologies for reporting overflows have adapted, as well. This plan is updated to leverage advances in technology that enable judicious and thorough dissemination of information. In the spirit of transparency, MSD wants stakeholders to know and have access to the information related to overflows.

7.2 Timely Notification of Dry Weather Overflows
MSD will provide timely notice to the OEPA for field-verified overflows that occur during dry weather conditions, whether it is from an enumerated CSO or SSO. Dry weather conditions exist when the area tributary to an overflow point has received less than 0.1 inches of rain in the preceding four hours. Timely notice is considered electronic correspondence within 24 hours of when MSD becomes aware of the overflow. This notification is in the form of an email, automatically generated by MSD Dispatchers using its computerized maintenance management system. An example is provided in Figure 5:
7.3 Notification of SSOs During Wet Weather

During wet weather events, MSD will provide timely notice to OEPA via electronic correspondence within 48 hours of when MSD becomes aware of an SSO. If the SSO presents an imminent risk to public health, MSD shall provide notice within 24 hours. This notification is made in the form of an email as shown in Figure 7.

7.4 Follow-up Notice of Releases from Enumerated Overflows

Within five business days of an overflow occurrence, MSD will update its Overflow Reporting Dashboard (ORD) to indicate releases from SSOs, PSOs and CSOs. The ORD, shown in Figure 6, is hosted on a public-facing website, which can be accessed by stakeholders using commonly available web browsers. Each Enumerated overflow point identified on the dashboard has a “second layer” of information contained on a dedicated page, shown in Figure 8. This additional layer of data displays the amount of rainfall and activation status by day for enumerated overflows. Starting in fall 2018, MSD will email updates of the overflow dashboard in real-time to Ohio EPA and Health Departments (i.e. Hamilton County Health District, as well as Springdale and Cincinnati Health); an example of the Overflow Dashboard is shown in Figure 6. Under the former Monitoring Plan, MSD provided hundreds of pages in its Quarterly Consent Decree Reports and letters to Health Departments. This form of reporting will be more usable to agencies and provide a public interface to improve transparency. MSD will continue to enhance public availability of data. Currently, MSD maintains an email notification to interested persons when an overflow is expected due to rainfall. MSD will further enhance the public accessibility of this dashboard so that users can make preferences on notification scenarios.
Figure 6 – Sample Geo-referenced Dashboard Indicating Overflow Locations

Figure 7 – Sample Dashboard Update Notification

MSDGC Overflow Reporting Dashboard Notification

noreply@cincywsd.com
Sent: Tue 06/06/2017 11:00 AM
To: OEPA, Hamilton County Health Department (etc.)

MSDGC has updated its public-available dashboard to include all field-verified sewer overflows through 06/05/2017.
7.5 Follow-up Notice of Releases from Enumerated Overflows
As MSD identifies potential non-enumerated overflows, MSD will conduct a thorough evaluation to determine if it is in fact an overflow as discussed in Table 2. MSD will report the status of non-enumerated overflow evaluations in the Quarterly Consent Decree report moving forward, using the format as outlined in Figure 9 starting in Q1 2018.
### MSDGC Reporting Framework for Non-Enumerated Overflow (NEO) Tracking and Reporting (Watch List)

<table>
<thead>
<tr>
<th>NEO ID No.</th>
<th>Asset ID</th>
<th>Location</th>
<th>Date Added</th>
<th>Phase of Assessment</th>
<th>Outcome of Assessment</th>
<th>Date of Assessment</th>
<th>WWIP Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year-#</td>
<td>use CAGIS manhole number or sewer segment number</td>
<td>Typically an address, intersection or other narrative descriptor.</td>
<td>Insert date discharge was added to the watch list</td>
<td>Indicate which phase the assessment is currently in: Initial, Extended, or Complete</td>
<td>Indicate if capacity constraint was confirmed or ruled out via monitoring and/or modeling; if a new, existing or modified WWIP project is needed to address the issue; and whether the resulting project will control or eliminate the overflow</td>
<td>Insert date of assessment provided in previous column</td>
<td>Insert WWIP Project ID</td>
</tr>
</tbody>
</table>

### Example

<table>
<thead>
<tr>
<th>NEO ID No.</th>
<th>Asset ID</th>
<th>Location</th>
<th>Date Added</th>
<th>Phase of Assessment</th>
<th>Outcome of Assessment</th>
<th>Date of Assessment</th>
<th>WWIP Project ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-001</td>
<td>e.g. MH 43503010</td>
<td>2415 Ebenezer Rd</td>
<td>1/1/2017</td>
<td>Complete</td>
<td>Constraint confirmed by monitoring, will be controlled by existing WWIP project</td>
<td>2/1/2017</td>
<td>WWIP XXXXXXXXXXXX</td>
</tr>
</tbody>
</table>
Section 8.0 Additional Communications Considerations

Notifications include reports to Hamilton County Health Department. Should situations occur that additional notifications are required, MSD coordinates with Hamilton County. Such coordination may include if public warning signs should be posted to notify the public of the risk of contamination. While all enumerated sites are already posted 24-7, MSD staff may post, monitor, and remove public warning signs as requested by the County Health Department.

MSDGC, following consultation with local Health officials and notification to its governing body, MSDGC may issue a news release for any sanitary sewer overflow due to magnitude of discharge, location or time of discharge or an unusual threat to the public. MSD will coordinate with Hamilton County Administration and other the local governing bodies to ensure accuracy and timeliness of critical public health communication. The news release will identify the problem, the cause and actions being taken to solve it. Should there be media inquiries regarding overflow events or activities, the Wastewater Collection Superintendent, Deputy Director or Director shall be responsible for media response, in close coordination with the governing body.

MSD undertakes a significant effort to educate the public through formal presentations in schools and tours of treatment facilities as well as through www.projectgroundwork.org and www.msdgc.org. The purpose of this effort is to enlighten the public about MSD’s role as a leading steward of the environment and provide information on activities undertaken by MSD. See Appendix C for MSD/Emergency Contact Lists.

Important Phone Numbers & Email notifications

City of Cincinnati Board of Health:
East Side: 352-2908
West Side: 564-1750

Hamilton County Board of Health: 326-4500

Ohio EPA Spill Hotline: 1-800-282-9378

MSDGC: 352-4900
Section 9.0  Training

A sewer overflow is a difficult situation for the public to deal with and even a reasonable homeowner or citizen can become irate if it is perceived that staff members as being indifferent, uncaring, unresponsive, and/or incompetent. MSD staff are trained to effectively deal with and manage sewage overflows in an expeditious and competent manner consistent with industry standard to exceed customer expectations. If it is not managed well, the situation can end up in a costly, prolonged process with the homeowner. Ratepayers and the public should feel assured that the MSD is responsive and the homeowner’s best interest is a top priority.

It is important for employees to communicate effectively with customers. How staff communicate – on the phone, in writing, or in person – is how MSD is perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less chance of having the homeowner prolong the claims process, and less chance of the customer exaggerating the damage done on the property. Communication and customer service training is provided to field personnel on an annual basis.

9.1 Initial and Refresher Training
The District conducts training programs for new and existing employees for all key job functions. All MSD personnel and contractor employees who may have a role in responding to, reporting, and/or mitigating a sewer system overflow will receive training on the contents of this SORP. All new employees will receive training before they are placed in a position where they may have to respond. Current employees will receive refresher training on this plan and the procedures to be followed as appropriate.

9.2 SSO Training Record Keeping
Records are of all training that is provided is maintained in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event include date, time, place, content, name of trainer(s), and names of attendees. Records of personnel SSO training are kept on file at the MSDGC Collections Division, Galbraith Road, Cincinnati Ohio. The SORP is included in these training programs and continued enhancement is underway.

9.3 Additional Communication Tips Offered to Staff

- Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
- As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
- Express understanding and empathy for any inconveniences caused by the incident, but do not admit fault. If it is determined that the MSD is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from the incident.
- As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
- Keep focused on getting the job done in a very professional manner. Do not wander from the problem with too much unnecessary small talk with the homeowner.
Section 10.0  Equipment Inventory

MSD maintains a stock of emergency response equipment which is available if needed for CSO/SSO response. MSD’s equipment inventory is included as Appendix F and includes water quality sampling equipment.

Following MSD emergency contracting procedures, MSD can partner with outside contractors for large bypass and repair emergencies. Through these partnerships, outside contractors also maintain equipment to support this SORP.
Appendices

A. Non.enumerated Overflow Assessment Process  
B. MSDGC WWC Flowfinity Workflow - Sampling of Screenshots & JobAids  
C. MSD/Emergency Contact Lists  
D. SBU Program Information and Additional Public Education Materials  
E. MSD Organization Charts  
F. Equipment Inventory
Appendix A: Non-enumerated Overflow Assessment Process

MSDGC Non-enumerated Overflow Assessment Process

Initial Assessment

- Field-verified, Capacity-related Discharge Added to Watch List
- Triggering Event Less Than WWIP Applicable Storm Event
- Addressed by Existing WWIP Project?
  - Yes
    - Document Confirmation of Future Overflow Mitigation via Notice of Achievement
  - No
    - Maintain on Watch List

Extended Assessment

- Install Level Monitoring Equipment
- Discharge During Rain Event Smaller Than WWIP Applicable Storm Event within 3 years?
  - Yes
    - Maintain on Watch List
  - No
- Install Flow Monitoring Equipment, as needed to build and calibrate Hydraulic Model
- Hydraulic Model Confirms Ongoing Capacity-related Discharge?
  - Yes
    - Notify EPA of Newly Discovered Outfall
  - No
- Discharge Can be Eliminated within 3 years of Notification?
  - Yes
    - Maintain on Watch List
  - No
- Resource Equipment

Resolution

- Complete Project per WWIP Schedule

Develop New Project to Eliminate Discharge
- Complete Project within 3 years of Notification

Submit Project Plan to EPA within 18 months of Notification
- Island Outfall for Enumeration and Modify CDP/NPDES Permit, as necessary
- Complete Project per WWIP Schedule
- Remove from Watch List
Appendix B: MSDGC WWC Flow-Finity Workflow - Sampling of Screenshots & Job Aides
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan

Confined Space Entry Form

Please take a photo of your completed Confined Space Entry Form.

Please be sure to focus the camera on the text on the form, and capture the entire form in the photo!

Confined Space Entry Form Photo

Job Aids and Maps

- CSO 171 Job Aid: http://gisoffice.msdgc.org/clouddocuments/CSO/Job_Aid...
- ArcGIS Online Map Link: arcgis://cincywater.maps.arcgis.com/sharing/rest/content...

Arrival Date/Time

Time that the Field Team arrives on the job site.

No Bypass - Cleaning Required?

- Does the CSO require Cleaning?: YES
- Will the cleaning require Confined Space Entry?: Yes

Before entering the CSO Structure, you must complete an MSD Confined Space Entry Permit!

Always use your Personal Protective Equipment and a calibrated Meter!
Appendix C: MSD/Emergency Contact Lists

MSDGC Emergency Contact List*

*Last updated March 2018; may not reflect all current contacts.
MSDGC 24/7 emergency contact is: 352-4900

### MSD-Regulatory
Compliance & Safety: On-call Rotation and Management

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy Brougham</td>
<td>708-3551</td>
</tr>
<tr>
<td>Josh Keith</td>
<td>240-3044</td>
</tr>
<tr>
<td>Dave Pyles</td>
<td>382-7514</td>
</tr>
<tr>
<td>Evring Francis</td>
<td>368-1614</td>
</tr>
<tr>
<td>Mike Cappel</td>
<td>377-8072</td>
</tr>
<tr>
<td>Jenny Richmond</td>
<td>708-2571</td>
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### MSD-WWC

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Pittinger</td>
<td>352-4201/519-2361</td>
</tr>
<tr>
<td>Todd Trabert</td>
<td>352-4228/604-0574</td>
</tr>
<tr>
<td>Tom Fronk</td>
<td>352-4292/659-6342</td>
</tr>
<tr>
<td>Randy Schneider</td>
<td>352-4206/646-4356</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWC Dispatch</td>
<td>352-4900</td>
</tr>
<tr>
<td>Edith Reutter</td>
<td>352-4218</td>
</tr>
<tr>
<td>Gary Miller</td>
<td>352-4219</td>
</tr>
<tr>
<td>SK</td>
<td>352-4272</td>
</tr>
</tbody>
</table>

### Fleet / Garage

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rob Sizemore</td>
<td>352-4226/312-9094</td>
</tr>
<tr>
<td>Gest St. Garage</td>
<td>352-4932</td>
</tr>
<tr>
<td>Galbraith Rd. Gar.</td>
<td>352-4232</td>
</tr>
<tr>
<td>Municipal Garage</td>
<td>352-5462</td>
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### MSD-WWT

#### Mill Creek Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larry Scanlan</td>
<td>244-5178/368-1496</td>
</tr>
<tr>
<td>Rick Hamant</td>
<td>557-5923/638-9445</td>
</tr>
<tr>
<td>Mill Creek South Operator</td>
<td>244-5583</td>
</tr>
<tr>
<td>Mill Creek Incineration</td>
<td>244-5568</td>
</tr>
<tr>
<td>Mill Creek Plant Operator</td>
<td>244-5503</td>
</tr>
<tr>
<td>Front Gate Guard Shack</td>
<td>557-5919</td>
</tr>
<tr>
<td>T. Zompero</td>
<td>557-7117/368-1581</td>
</tr>
<tr>
<td>Dave Froehle</td>
<td>557-5924/484-5975</td>
</tr>
<tr>
<td>Scott Maring</td>
<td>244-5131/910-2620</td>
</tr>
</tbody>
</table>

#### Muddy Creek Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Office</td>
<td>352-4923</td>
</tr>
<tr>
<td>Bill Beyer</td>
<td>352-4924</td>
</tr>
</tbody>
</table>

#### Taylor Creek Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bill</td>
<td>352-4923</td>
</tr>
</tbody>
</table>

#### Little Miami Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Bauer</td>
<td>352-4922 ext. 27</td>
</tr>
<tr>
<td>Doug Handley</td>
<td>321-0571</td>
</tr>
</tbody>
</table>

#### Sycamore Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>791-3505</td>
</tr>
</tbody>
</table>

#### Polk Run Treatment Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jason Grooms</td>
<td>793-1525/814-5254</td>
</tr>
</tbody>
</table>


MSD Safety Section
  Jeff Zistler  315-0156
  Kevin Mercier  708-6317
  Grace Haggard  551-7311
  Carson Cocayne  609-3040

GCWW-Storm Water Management Utility (SMU)
  Gary Mills  352-4973  659-6345
  Rick Saint John  352-4250  519-2368
  Rahn Wuest  352-4229  314-1954
  Barrier Dam

MSD Contractors
Sewer Cleaning / TV / Misc.
  SWS (aka Savage Walker) (Sharon)  793-7417
  TeleVac  398-4521
  Champion  871-2333  569-2097 (John)
  Pettit Environmental  842-4757 (Dale French)

By-Pass Pumping / Flooding / Emergency Response
  Allied Pumps (Doug Sayre)  793-0499
  B&J Electrical  351-7100

Local City, County, State & Federal Contacts

Cincinnati Fire Department / Environmental Crime
  Lt. Eric Prather  357-7533  267-843
  District Chief: Dan Rottmueller, Arson/ECU 678-1983
  Lt. Dan Wolf  678-1984

Hamilton County Administration
  Administrator  Jeff Aluotto  946-4400
  Ass’t Admin’r  Judi Boyko  946-6625

HC Police / Fire / Surrounding Townships Communications Center
  825-2170  825-2280

HC Prosecutors Office
  Nee Fong Chin  946-3042

HC Public Health – Surface Water  946-7800
  Kyle Dexter  482-0232
  Brad Johnson  946-7962

HC Environmental Services (Air Quality)  946-7777
  Greg Kesterman  946-7831
  Kerri Castlen  946-7738

Hamilton County LEPC  263-8200  825-8518 (24 hour Spill or Release)

Homeland Security / Hamilton County Emergency Management
  Rick Jones  368-1317
  Barry Whitton  368-1110
OEPA (Spills Hotline)
800-282-9378  800-424-8802
Dale Farmer, ER/OSC/Supervisor 937-285-6037 937-478-9177
Bill Lohner, ER/OSC 937-285-6051 937-723-0952
Glen Vonderembse Permitting 937-285-6033
Scott Shane, Special Investig. 614-836-8764
Randy Ohlemacher, Special Investigations 614-836-8767
Brent Kirkpatrick, CID-Special Investigations 740-845-2441
Pretreatment Coordinator, DSW-SWDO 937-285-6357

ODNR / Fish & Wildlife (Spills Hotline)
614-799-9538
Main Office 937-372-9261
Officer Rick Rogers 937-372-9261
Officer Aaron Ireland 937-372-9261

USEPA
Steve Renninger : USEPA ER/OSC 569-7539
John Sherrard: USEPA (contractor) 703-3092
Victor Dvorak : USEPA (Criminal Investigation) 440-202-4438

Mill Creek Watershed Council of Communities 563-8800

Springdale Public Works
Jeff Agricola 346-5520

Forest Park
Steve Gallenstein 595-5246  *678-7107
Dave S. 678-6654
Dave Buesking 595-5257

Media
Channel 12 579-1212
Channel 9 852-4071
Channel 5 412-5055
Channel 19 421-0119
Cincinnati Enquirer 768-8600
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan

MSD Senior Management Team & Contact List
May 2018

MaryLynn Lodor, Deputy Director
Office: (513) 244-5535
Cell: (513) 562-7220
MSD Administration Building, Director’s Office
MaryLynn.Lodor@cincinnati-oh.gov

Pat Arnette, Deputy Director, Engineering Management
Office: (513) 244-1344
Work Cell: (513) 368-1437
MSD Engineering Building, 2E 220
Pat.Arnette@cincinnati-oh.gov

Diana Christy, Chief Legal Counsel
Office: (513) 244-5123
Cell: (513) 503-8586
MSD Administration Building, Room 235
Diana.Christy@cincinnati-oh.gov

Jenny Richmond, Superintendent, Regulatory Compliance and Safety
Office: (513) 244-5597
Work Cell: (513) 708-2571
MSD DIW Building, Room 133
Jennifer.Richmond@cincinnati-oh.gov

Vanessa Smedley, Interim Superintendent, Wastewater Treatment
Office: (513) 557-7186
Cell: (513) 476-9000
CMF Building, Room 217
Vanessa.Smedley@cincinnati-oh.gov

Jerry Wilkerson, Interim Director
Office: (513) 244-1315
MSD Administration Building, Director’s Office
Jerry.Wilkerson@cincinnati-oh.gov

Ihab Tadros, Deputy Director/CFO
Office: (513) 244-1305
Cell Work: (513) 500-1900
Cell Personal:  614-565-3908
MSD Administration Building, Room 109
Ihab.Tadros@cincinnati-oh.gov

Mike Pittinger, Superintendent, Wastewater Collection
Office: (513) 352-4201
Cell: (513) 519-2361
WWC Building, 225 W. Galbraith Road
Mike.Pittinger@cincinnati-oh.gov

Melissa Niehaus, Superintendent, Watershed Operations
Office: (513) 557-7059
Work Cell: (513) 378-9657
CMF Building, Room 247
Melissa.Gatterdam@cincinnati-oh.gov

Ryan Welsh, Superintendent, Engineering Management
Office: (513) 244-5519
Work Cell: (513) 608-8058
MSD Engineering Building, 2E 22
Ryan.Welsh@cincinnati-oh.gov

Deb Leonard, SMA-Communications, Office of the Director
Office: (513) 557-7095
Work Cell: (513) 316-7510
MSD Administration Building, Room 240
Deb.Leonard@cincinnati-oh.gov
Bev Engram, Division Manager, Finance & Accounting
Office: (513) 557-7705
Work Cell: (513) 484-9469
MSD Administration Building, Room 116
Beverly.Engram@cincinnati-oh.gov

Cassandra Hillary, SMA-Government Affairs & Policy, Office of the Director
Office:  (513) 244-5133
Work Cell:  (513) 498-4380
MSD Administration Building, Room 236
Cassandra.Hillary@cincinnati-oh.gov

Don Sander, IT Manager
Office:  (513) 244-1348
Cell:   (513) 502-7778
MSD Administration Building, Room 219
Don.Sander@cincinnati-oh.gov

Jerry Wilkerson, Superintendent, Wastewater Administration
Office: (513) 244-1315
Work Cell: (513) 448-5854
MSD Administration Building, Room 212
Jerry.Wilkerson@cincinnati-oh.gov

Additional Resource Managers

**WWT**
Keith Heffner  513-325-2797
Scott Maring     513-910-2620
Jason Grooms  513-793-1525/814-5254
Bill Beyer  513-352-4924

**WWC**
Todd Trabert  513-604-0574
Tom Fronk     513-659-6342
Randy Schneider  513-646-4356

**WWE**
Tom Crawford  513-557-7147
Teresa Brandenburg  513-913-0156

**WO**
Reese Johnson  513-557-3590
Rob Kneip  513-507-7616

**IT**
Mike Nalley  513-368-1622
Dave Stephens  513-532-8190

**RCS**
Mike Cappel  513-377-8072
Jeff Zistler  513-315-0156
Wanda Harney  513-872-9192
Bruce Smith  513-309-4866
IWS on-call  513-461-6677
Safety on-call  513-452-6742
Appendix D: SBU Program Information and Additional Public Education Materials

OVERVIEW OF MSDGC’S ONGOING EDUCATION AND OUTREACH PROGRAMS
MSDGC continues to engage with its ratepayers and the public. The following outreach programs and education programs are summarized herein.

- Sewer Backup Program
- Annual Stakeholder Breakfast
- CSO Notification Program
- Recr8OhioRiver
- Project Customer Service

Sewer Backup Program¹
MSDGC’s Sewer Backup Program (SBU) was officially launched in January 2004 as a component of the Global Consent Decree. Formerly known as the Water-In-Basement (WIB) program, it was the first of its kind in the country. The two major components of the program included prevention and customer service. Public notification requirements for the program’s two components as stated in Exhibit 6 and 7 specified actions to be taken at the launch of the program. MSDGC met those initial requirements and continues to exceed and expand public notification through a variety of efforts. This includes both on-line and phone incident reporting, a dedicated SBU webpage, on-line videos, interactive website and video game, SBU brochures in both English and Spanish, and direct mail campaigns.

Efforts in 2016 included:

- Direct mailing of magnets with 24/7/365 contact information
- Launched interactive website www.doyourpartcinci.com which includes a video, interactive game and blog posts designed to educate the public regarding sources of sewer backups and the responsibilities of homeowners and MSDGC.
- Implemented software utilized by field crew to standardize SBU response

In a report filed January 21, 2016, the SBU Ombudsman (see further information below regarding the role of the Ombudsman), was satisfied overall with the SBU program and was “pleased with MSD’s efforts to attempt new strategies and broaden their outreach. The Ombudsman endorses this (rebranding) effort

¹ The Water-In-Basement Program (WIB) was rebranded as the Sewer Back Up Program (SBU). Most references in this document will refer to it as SBU.
as a potentially effective method of helping customers visualize and understand the sometimes complicated mechanics of SBU’s and lateral line issues.”

**SBU Cleanup and Damage Claims**

The SBU program was recently stressed due to a catastrophic rain event in the Norwood and St. Bernard area on August 28, 2016. Thousands of homes were flooded in this combined sewer service area. There were more than 2,000 reported sewer backups with multiple feet of water and sewage. MSDGC was not staffed to handle this unusual volume of sewer backups and quickly contracted with additional cleanup contractors and a third-party claims adjuster to meet the demand.

**SBU Prevention Program**

The SBU Prevention Program is based on a consistent process that was developed during the program’s planning period. Through these efforts, property owners who have experienced multiple sewer backups within the last five years related to a capacity issue in MSDGC’s public sewer system may receive assistance to prevent future backups. Site-specific solutions are designed and installed at no cost to the property owners.

**Continuing Role of SBU Ombudsman**

Based on the Court’s Order appointing Legal Aid as Ombudsman, the Ombudsman has four roles:

- Ensure that the SBU Program is understandable to the public
- Provide the public with someone who acts on their behalf and who can assure that the SBU Program is working
- Investigate complaints
- Inform the Court regarding the status of the program

Figure 4 - Cumulative investment ($million) in the SBU Customer Service (Clean Up) Program
The Ombudsman periodically releases a Report of the Ombudsman to the Court that highlights the activities that have occurred over the report period.

**Annual Stakeholder Breakfast**

Beginning in 2004, MSDGC has hosted a breakfast meeting for elected officials and community leaders from across the MSDGC service area. For the first four years the program only included presentations on the capital program. In 2008, the event was coined “MSDGC in Your Community” and the scope was broadened to provide MSDGC leadership and staff with an opportunity to interact face-to-face with the leaders of all the communities and political subdivisions in the service area, present challenges and achievements for the year, and answer questions from stakeholders. After the presentation MSDGC staff hosted breakout sessions in each service area basin to discuss ongoing and planned projects.

**CSO Notification Program**

As per Exhibit 5 of the Global Consent Order, MSDGC continues to sponsor a CSO notification program to alert Hamilton County residents when existing or predicted weather conditions are likely to cause combined sewer overflows into local streams and rivers. Residents can receive the notices either by calling the CSO Information Line (513-244-5116) or by subscribing to CSO Advisory emails. Currently about 30 people receive the CSO Advisory emails.

**Recre8OhioRiver**

In 2013, MSDGC launched Recre8OhioRiver, a website and free wireless device app that provided water quality data (E. coli bacteria counts) and river conditions (temperature, velocity and stage) for the Ohio River. The tool helped recreational users make informed decisions about where and when to boat, fish and engage in other water sports on the Ohio River.

The Recre8OhioRiver website and app were disabled in early 2017 due to funding issues but is undergoing sponsorship efforts to partner with the private sector to underwrite the resource.

---

2 Due to budget cuts, the Recre8OhioRiver app was taken off line early 2017 until further notice.
Project Customer Service

MSDGC provides extensive outreach and communication efforts before and during all WWIP construction projects. Examples include the Lick Run Project and the Werk & Westbourne EHRT project. MSDGC’s communication team works in tandem with the design engineer to understand the impact of the project on the larger community, and particularly on the local residents.

Communication Plan

A communication plan is often developed to determine the goals of the communication efforts, the likely stakeholder concerns and the most appropriate communication outlets. The team develops a summary of the situation, analysis, strategies and tactics, with a preliminary list of stakeholders and key messages. The plan includes working directly with local officials to determine their needs and also to get their help in selecting the impacted resident population. This information informs the communication tools necessary for the project.

Communication Tools

A variety of communications tools are used, including letters, fact sheets, newsletters, door hangers, small group meetings, public meetings, websites, e-Newsletters and media relations.

The Werk & Westbourne Project, for example, has employed most of these tools. The first public meeting was held at the conceptual stage of the project. At that time the facility was planned to be underground and the focus of the meeting as to educate the attendees regarding the technology and to request input on potential land use after construction. The meeting was advertised with flyers delivered to residents located within a 2-mile radius of the project site.

A second public meeting was held following a major design change. Input was solicited regarding facility façade and landscaping options. An additional public meeting during construction will be held if the community is interested.
The project team creates a quarterly update to keep local residents informed.

As shown in the adjacent figure, the website is also a valuable resource for project updates, project information, meeting presentations, etc. Face-to-face communication could be necessary if there are on-going questions and concerns that cannot be addressed through digital channels and phone calls.

The Lick Run Greenway Project also employs these communication approaches, including eight public meetings, a dedicated website, quarterly e-Newsletters, regular updates to the local Community Councils, frequent press releases, and signage. MSDGC anticipates utilizing these same types of public education and outreach strategies as projects proceed into Phase 2 of the WWIP. MSDGC will continue coordinating capital projects with the local and regional jurisdictions.
PUBLIC INFORMATION OUTLETS

Press Releases
MSDGC uses traditional media outlets to communicate updates of WWIP projects. This includes typical construction traffic impact information, as well as larger pieces regarding significant project. Press releases have been a routine communication tool for the Lower Mill Creek Partial Remedy slate of projects including the Lick Run Greenway. The typical outlets that are used by MSDGC to issue press releases include:

+ Cincinnati Enquirer
+ Cincinnati Business Courier
+ Community Press newspapers
+ Local TV stations
+ Local radio stations

Websites and Social Media
MSDGC maintains two websites to bring current information to ratepayers and other stakeholders. All official Consent Decree documentation is located on the MSDGC website at www.msdgc.org website. All other WWIP information, including WWIP-related reports and project information, is housed on the Project Groundwork website at www.projectgroundwork.org.

Projectgroundwork.org
This website is a one-stop-shop for all WWIP information. The website tabs along the site ribbon are shown in the following figure and described below.

![Figure 3. Set-Up of Projectgroundwork.org Webpage](image-url)
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan

Problem and Solution
General overview to the CSO problem and the types of solutions in the WWIP.

Progress
Links to reports related to the WWIP and MSDGC capital program. Of special interest are the quarterly project reports which, by watershed, provide general information, project status, Consent Decree milestones, maps, budget/schedule variances, etc., for each Phase 1 WWIP project. The Consent Decree compliance annual and quarterly reports are also linked from this site page.

Projects
Project maps and construction project news links are provided on this page. Dedicated webpages for significant WWIP projects can be accessed.

How to Help
MSDGC appeals to the local community to become part of the solution through videos and fact sheets located on the Project Groundwork website:
- Rain Barrel video – produced by MSDGC’s Green Initiative Team
- Get Involved Fact Sheet – suggestions for residents and businesses

FAQs.
Provides answers to some of the most frequently asked questions such as:
- What is a sewer overflow?
- Do other cities have sewage overflows?
- What are consent decrees?

Green Solutions
MSDGC explains its’ efforts to use green solutions to keep rain water out of the combined sewer system.

Contact Us
Provides continuous communication points for stakeholder concerns, questions and input.

By Email: MSD.Communications@Cincinnati-oh.gov
By Phone: Engineering Customer Service (513) 557-3594

Social Media
MSDGC maintains active Facebook and Twitter accounts. Critical information regarding emergencies and traffic control can be posted as well as informational pieces that help stakeholders understand the mission, purpose and work of MSDGC.

3 City of Cincinnati through City Ordinance No. 85-2013 passed in 2013 permits and regulates the use of rain barrels
Appendix E: MSD Organization Charts
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan

METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
MSDGC

Wastewater Collection
WWC
Mike Pettenger
Superintendent

- WWC Administration & Support
- WWC Customer Service
- WWC Expert Services
- WWC Equipment & Vehicles
- WWC Assessment Management
- WWC Asset Management
- WWC Asset Renewal
- WWC Facilities
- WWC Mechanical Maintenance
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan
Appendix to MSDGC Sewer Overflow Response, Monitoring and Response Plan

METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
MSDGC

Finance & Accounting
Beverly Engram
Superintendent

- Account Payable
- Account Receivable
- Budget Management & Accounting
- CIP Program Controls
- Payroll
METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
MSDGC

Office of the Director

- External Communications/Community Engagement
- Legislation/government Affairs
- Internal Communications
- Special Project Coordinator

- Law
- Public Records

- Executive Assistant
Appendix F: Equipment Inventory

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### WWC Equipment inventory with cost over $10,000

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## WWC Equipment inventory with cost over $10,000

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Appendix F: Equipment Inventory (cont)

Watershed Operations Equipment

As noted in Section 2 of the MSD System, MSD utilizes a sophisticated, real-time data-driven tool that allows MSD to observe flows within the collection system. Using sensors to measure real time flow levels, this information can then point to opportunities for MSDGC to store flows inside large interceptor sewers, storage tanks, and high-rate treatment facilities in different parts of the sewer system using remotely operated gates and valves to direct the flows. To utilize these remote system, MSD relies upon various iPads and computers that staff use to access the system. Additionally, cell towers and internet service provider’s hardware are necessary for the system to work. Below is a listing of the major components that MSD uses to monitor and report overflows.

- Level monitoring equipment
- Remote telemetry units
- Wet Weather SCADA system which consists of seven interconnected servers virtualized in MSD’s data center, accompanying network switches and equipment.
End of document