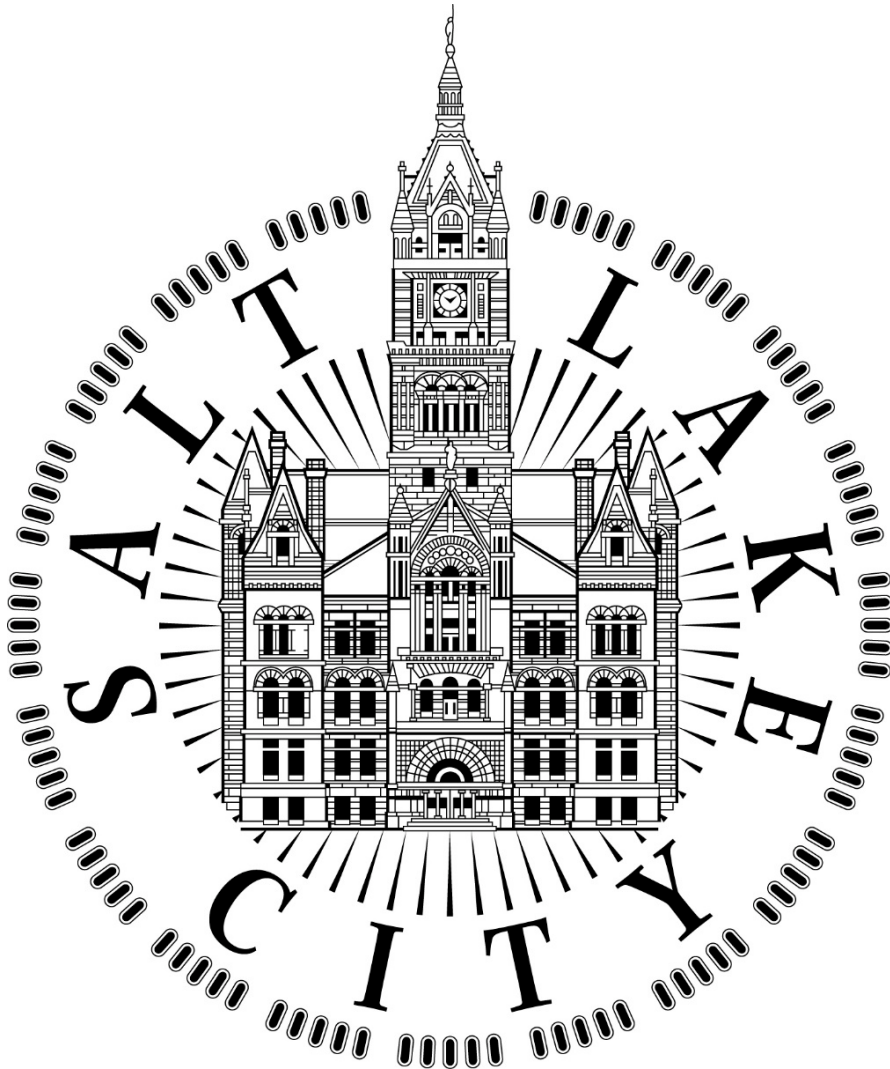


**SALT LAKE CITY  
MUNICIPAL SEPARATE  
STORM SEWER SYSTEM (MS4)**

**UPDES PERMIT UTS000002**



**STORM WATER MANAGEMENT PLAN  
December 2021, Version 2024.1**

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

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**LIST OF ACRONYMS & ABBREVIATIONS**

2015 Permit	2015 Utah Pollutant Discharge Elimination System Permit for Discharge from Salt Lake City's Separate Storm Sewer System Permit Number UTS000002
2021 Permit	2021 Utah Pollutant Discharge Elimination System Permit for Discharge from Salt Lake City's Separate Storm Sewer System Permit Number UTS000002
BMP	Best Management Practice
CED	Community and Economic Development
CFR	Code of Federal Regulations
City	Salt Lake City
CIUQ	Commercial/ Industrial User Questionnaire
DEQ	Utah Department of Environmental Quality
DWQ	Utah Division of Water Quality
EPA	Environmental Protection Agency
ERC	(Salt Lake City) Event Review Committee
FTE	Full Time Equivalent
GI	Green Infrastructure
GIS	Geographic Information System
HHW	Household Hazardous Waste
IDDE	Illicit Discharge Detection and Elimination
JRWC	Jordan River Watershed Council
LID	Low Impact Development
MEP	Maximum Extent Practicable
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
MSGP	UPDES Multi-Sector General Permit
NAICS	North American Industrial Code System
NOI	Notice of Intent
NOT	Notice of Termination
O&M	Operations and Maintenance
OSSF	On-Site Sewage Facilities
POTW	Publicly Owned Treatment Works
PUAC	Public Utilities Advisory Committee
ROW	Public Right-of-Way
RSI	Registered Storm Water Inspectors
SIC	Standard Industrial Classification
SLC	Salt Lake City
SLCDPU	Salt Lake City Department of Public Utilities
SLCoHD	Salt Lake County Health Department
State	State of Utah
Stormwater Coalition	Salt Lake County Stormwater Coalition
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
SWMP	Storm Water Management Plan
SWPPP	Storm water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UAC	Utah Administrative Code
UDOT	Utah Department of Transportation
UPDES	Utah Pollutant Discharge Elimination System
USWAC	Utah Storm water Advisory Committee
WOTS	Waters of the State (of Utah)

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**CERTIFICATION**

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In accordance with Section 6.8 of the 2021 Utah Pollutant Discharge Elimination System (UPDES) Permit for Discharge from Salt Lake City's Separate Storm Sewer System (MS4) Permit Number UTS000002 (hereafter referred to as the 2021 Permit), the following statement has been incorporated and signed in this document:

Certification Statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: \_\_\_\_\_



Printed Name: Laura Briefer,

Director Salt Lake City Department of Public Utilities

Date: December 17, 2021

## 1.0. STORM WATER MANAGEMENT PLAN (SWMP) INTRODUCTION

Salt Lake City (City) is the largest metropolitan area within the Salt Lake Valley. The City has a population in excess of 200,567 (according to the 2020 US Census) and encompasses approximately 110 square miles within the lower Jordan River Basin (**Figure 1**). The valley is a terminal valley that drains to the Great Salt Lake. The Jordan River is the main conveyance system in the valley and flows from Utah Lake to the Great Salt Lake. The City's storm water system consists of a series of local municipal drainage pipes and open channel drainage facilities that discharge to a larger citywide system of pipes, open channels, canals, or natural channels. Storm water quality and flood control are managed by the Storm Water Maintenance and Storm Water Quality (SWQ) Programs of Salt Lake City Department of Public Utilities (SLCDPU).

The City's Storm Water Management Plan (SWMP) was developed to comply with the 2021 Municipal Separate Storm Sewer System (MS4) Utah Pollutant Discharge Elimination System (UPDES) Permit UTS000002 (hereafter referred to as the 2021 Permit) permit, in accordance with the Federal Clean Water Act 402 (p)(3)(B) and State Storm Water Regulations (UAC R317-8-3.8), and is designed to reduce the discharge of pollutants to the maximum extent practicable (MEP) from the municipal storm drain system servicing Salt Lake City. The development, implementation, and enforcement of the SWMP will include best management practices (BMPs), control techniques, system design and engineering methods, an education component, recordkeeping and documentation, and other provisions appropriate for the control of pollutants.

The City received an original MS4 UPDES Permit (UTS000002) to discharge municipal storm water on September 1, 1995. The MS4 UPDES Permit was issued by the Utah Department of Environmental Quality (DEQ), Division of Water Quality (DWQ), after the City submitted a Part 1 and Part 2 UPDES Permit Application for discharges from municipal storm sewer systems, in accordance with 40 *Code of Federal Regulations* (CFR), Section 122. In response to the original permit, the City submitted its first SWMP on June 1, 1998. A review and update of the SWMP and BMPs are completed annually as part of the Annual Report. The City renewed its UPDES permit on June 1, 2001; June 1, 2006; and February 1, 2015. The original SWMP has gone through review and revision as necessary to meet the new permit requirements of each permit cycle. On June 22, 2021, the 2021 Permit was issued to the City. The 2021 Permit requires that the City submit a revision of the City's SWMP within 180 days of the effective date of the permit.

A part of Salt Lake City's SWQ Program is the elimination of storm water pollution at the sources of the pollution. The SWMP will incorporate pollution prevention strategies that are designed to reduce pollutant discharges to the MS4 and downstream receiving Waters of the State (WOTS). The City's program is intended to be flexible and employ methods that will make it relatively easy to incorporate new methods and procedures for controlling storm water pollution.

### 1.1. SWMP PROGRAM ADMINISTRATION

The SLCDPU is responsible for the overall implementation of the SWMP. Other City Departments assist in this implementation as appropriate. Program Administration is illustrated in the Storm Water Program Administration Chart in **Figure 2**. The responsible parties are as follows:

Agency: Salt Lake City Department of Public Utilities

Contact: Ms. Teresa Gray, Water Quality and Treatment Administrator (801) 483-6744  
Mr. Greg Archuleta, Storm Water Quality Program Manager (801) 483-6821

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## **1.2. PURPOSE**

The City's SWMP addresses the six minimum control measures as specified in the 2021 Permit (listed below) and outlines tasks for completion over the next five years.

- Public Education and Outreach
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff
- Long-term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management)
- Pollution Prevention and Good Housekeeping for Municipal Operations

In addition, the SWMP also addresses the administration of:

- Industrial and High-Risk Runoff
- Wet Weather Monitoring
- Dry Weather Screening
- Recordkeeping and Reporting

## **1.3. SWMP REVIEW AND MODIFICATION**

An annual review of this SWMP will be conducted in conjunction with the required annual MS4 report; any changes or modifications will be submitted to the DWQ in accordance with Part 4.5 of the 2021 Permit. This review will include the following:

- A review of the status of program implementation and permit compliance.
- A review of any revision or change of BMPs during the year and an assessment of the effectiveness of such revision. The DWQ will be notified in writing of any changes to the implementation of BMPs. This notification will include the rationale supporting the modification in accordance with Part 4.5 of the 2021 permit.
- An overall assessment of the goals and direction of the SWMP and effectiveness of BMPs.
- A review of monitoring data, any changes in monitoring methods and parameters, and an assessment of the overall monitoring program.

## **1.4. STAFFING AND RESOURCE ALLOCATIONS**

The SLCDPU Storm Water Utility has been established as a separate enterprise fund of Salt Lake City. The Storm Water Utility is directly responsible for funding capital improvements, the operation and maintenance (O&M), and water quality of the Salt Lake City storm drainage system. The Storm Water Quality (SWQ) Program oversees the SWMP and implementation of the 2021 Permit for the Storm Water Utility. The SWQ Program includes seven and a half full-time equivalent (FTE) employees, which are responsible for implementation of the majority of the program components. In addition, other Divisions of SLCDPU and other City Departments have staff that assist the SWQ Program, as necessary. Specifically, Engineering has 1 dedicated FTE to storm water capital improvements, and the Storm Water Maintenance Program has 13 FTEs (with approval to add two more in 2022) dedicated to storm water system maintenance. Other Salt Lake City departments, including (but not limited to) several divisions of the Public Services Department, are responsible for their portions of the Pollution Prevention (O&M) program and tasks regarding their respective facilities and operations. The City may also utilize the services of private contractors to implement portions of the Storm Water Program, including technical assistance, emergency response and/or hazardous clean up, and mitigation/remediation. Details about the staffing and resource allocations for each program MCM are described within the respective chapter of this SWMP.



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### 1.5. SWMP SUMMARY

This SWMP has been developed to reduce the discharge of pollutants from the MS4 to the MEP, meet the requirements of the 2021 Permit, and protect water quality. It consists of the six minimum control measures (MCMs) developed by the EPA for Phase I municipal storm water discharges. In addition to the MCMs, this SWMP addresses the requirement for Phase I municipalities to conduct storm water quality monitoring and administer an *Industrial and High-Risk Runoff* program. Implementation of each control measure is designed to reduce the discharge of storm water pollutants to WOTS of Utah. City ordinances, including *The Riparian Corridor Overlay Ordinance* and the *Storm Water System Ordinance* (refer to **Appendix B**), have been developed to define and protect the City's MS4 and receiving WOTS. Each control measure contains BMPs that facilitate in achieving the goals of each control measure. BMPs are essential for effectively implementing a proper SWMP. Many of these BMPs were included in previous iterations of the SWMP and have been updated as necessary to meet the current 2021 Permit requirements and city needs (refer to **Appendix C**). In addition, the City has standard operating procedures (SOPs) or similar documents to address specific storm water quality needs (refer to **Appendix D**). The SWMP is intended to be a dynamic document with BMPs and SOPs being added, deleted, or modified as new or better management practices are recognized or other management practices are found to be ineffective.

Below is a brief description of each of the six minimum control measures and applicable BMPs to be implemented in meeting the 2021 Permit requirements. The implementation of the BMPs will be detailed at the end of each section in the Goals and Measurements tables. The complete list of BMPs is included in **Appendix C**.

**Public Education and Outreach on Storm Water Impacts.** The City is an active participant with the Salt Lake County Stormwater Coalition (Coalition). In conjunction with the Coalition and with other City Departments, Public Education and Outreach is addressed through numerous avenues. For example, educational outreach is conducted at various community events and festivals. Also, the Storm Water Coalition has implemented the "We All Live Downstream" storm water campaign to educate the general public regarding storm water impacts that can result from residential activities. The SLCDPU Storm Water Utility funds much of the program. The Public Education and Outreach program also will target residents, institutions, industrial and commercial facilities, developers and contractors (construction), and MS4 owned or operated facilities. This includes a prioritization of at least two high-risk commercial sources of storm water pollution for targeted outreach and education. The following BMPs have been developed and implemented as a public education program with materials that describe the impacts of storm water and actions to reduce pollutants.

BMP	Description
<b>BMP 03:</b>	Support "Tan Can" yard waste pickup for Salt Lake City residents.
<b>BMP 04:</b>	Support the "Call-2-Haul" bulky waste cleanup program for Salt Lake City residents.
<b>BMP 06:</b>	Support the Curbside recycling effort for Salt Lake City residents.
<b>BMP 07:</b>	Support resident clean-up days of selected waterways and natural areas.
<b>BMP 21:</b>	Continue education program on the proper use of pesticides and fertilizers.
<b>BMP 26:</b>	Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
<b>BMP 35:</b>	Continue program to promote public reporting of illicit discharges.
<b>BMP 36:</b>	Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.
<b>BMP 37:</b>	Continue education for residential users on water quality issues, impacts, and solutions.
<b>BMP 40:</b>	Identify and Prioritize industrial and priority commercial groups for inspections and education.
<b>BMP 42:</b>	Distribute water quality education materials to Industrial and priority commercial facilities.

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**Public Involvement / Participation.** SLCDPU will continue to look for opportunities to involve the public in developing policy and procedures such as the Public Utilities Advisory Committee (PUAC), which is comprised of citizens appointed by the Salt Lake City Mayor and Council and is an integral part of reviewing major policy decisions related to SLCDPU. The PUAC meetings are open to the public and are generally held the fourth Thursday of the month at 8:00 AM at 1530 South West Temple (due to COVID 19 safety precautions the meetings may be held virtually, or in a hybrid manner with both in-person and virtual options). Public Surveys implemented by the SLCo Stormwater Coalition were conducted by Dan Jones and Associates (in 2010) and Lighthouse Research & Development (in 2020) demonstrate that the public is both concerned about pollution and aware of many of their roles in protecting water quality (refer to **Appendix F**). The public's participation in volunteer programs for proper waste management and environmental stewardship activities demonstrates that there are residents that are willing to participate in the protection of water quality. The following BMPs have been developed and implemented as a public involvement/participation program to include public involvement.

BMP	Description
<b>BMP 03:</b>	Support "Tan Can" yard waste pickup for Salt Lake City residents.
<b>BMP 04:</b>	Support the "Call-2-Haul" bulky waste cleanup program for Salt Lake City residents.
<b>BMP 06:</b>	Support the Curbside recycling effort for Salt Lake City residents.
<b>BMP 07:</b>	Support resident clean-up days of selected waterways and natural areas.
<b>BMP 26:</b>	Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
<b>BMP 35:</b>	Continue program to promote public reporting of illicit discharges.
<b>BMP 37:</b>	Continue education for residential users on water quality issues, impacts, and solutions.

**Illicit Discharge Detection and Elimination (IDDE).** SLCDPU has an active IDDE program that includes a 24-hour hotline for reporting illicit connections and illegal discharges, a detailed map of the storm sewer system, and ordinances that pertain to storm water quality and enforcement. SLCDPU coordinates and works with the SLCoHD when responding to illicit discharges and follows up with enforcement actions as necessary. SLCDPU also assists Salt Lake City Fire Department Hazmat crews when called upon concerning large spills into the storm sewer system. The following BMPs have been implemented to detect and eliminate illicit discharges and improper disposal into the storm drain system.

BMP	Description
<b>BMP 02:</b>	Inspect the storm sewer system and detention basins within the permit cycle.
<b>BMP 09:</b>	Conduct annual training for drainage system maintenance personnel.
<b>BMP 10:</b>	Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.
<b>BMP 21:</b>	Continue education program on the proper use of pesticides and fertilizers.
<b>BMP 23:</b>	Coordinate with POTW pretreatment program.
<b>BMP 24:</b>	Maintain records of all illicit connection investigations and enforcement.
<b>BMP 25:</b>	Review all new development and re-developments plans for compliance and illicit connections.
<b>BMP 26:</b>	Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
<b>BMP 27:</b>	Continue program for investigating illicit flows and connections.
<b>BMP 28:</b>	Implement Memorandum of Understanding (MOU) with SLCoHD
<b>BMP 29:</b>	Maintain staff to respond to reports of illicit discharges.
<b>BMP 30:</b>	Continue interagency cooperation concerning illicit flows investigation.
<b>BMP 31:</b>	Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.

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<b>BMP 32:</b>	Investigate dry weather flows.
<b>BMP 34:</b>	Maintain a list of certified suppliers and contractors to respond to containment and cleanup of spilled material.
<b>BMP 35:</b>	Continue program to promote public reporting of illicit discharges.
<b>BMP 36:</b>	Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.
<b>BMP 37:</b>	Continue education for residential users on water quality issues, impacts, and solutions.
<b>BMP 38:</b>	Continue procedure for reporting and investigating possible SSOs into the storm sewer system.
<b>BMP 39:</b>	Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.
<b>BMP 41:</b>	Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.
<b>BMP 42:</b>	Distribute water quality education materials to Industrial and priority commercial facilities.

**Construction Site Storm Water Runoff.** The SLCDPU Construction Site Storm Water Runoff Control Program addresses pollutants from development and construction runoff. This program includes a City Construction Activities Permit, a Dewatering Activities Permit, a database, GIS maps, storm water ordinances, and RSI-Certified personnel that oversee and assist in the program. The following BMPs have been developed and implemented to enforce a program to reduce pollutants to the MS4 from construction activities that result in a land disturbance of greater than or equal to 1-acre, including projects disturbing less than 1-acre but part of a common plan of development greater than 1-acre.

<b>BMP</b>	<b>Description</b>
<b>BMP 12:</b>	Enforce the requirements of Salt Lake City Ordinances.
<b>BMP 13:</b>	Provide Standard BMPs for site development (active and post-construction) to developers and engineers.
<b>BMP 17:</b>	Continue procedures for monitoring storm water management on Public construction projects.
<b>BMP 29:</b>	Maintain staff to respond to reports of illicit discharges.
<b>BMP 30:</b>	Continue interagency cooperation concerning illicit flows investigation.
<b>BMP 31:</b>	Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.
<b>BMP 35:</b>	Continue program to promote public reporting of illicit discharges.
<b>BMP 41:</b>	Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.
<b>BMP 43:</b>	Continue a storm water quality-training program for development and plans review personnel.
<b>BMP 44:</b>	Continue to obtain and review SWPPPs for construction projects and industrial facilities.
<b>BMP 45:</b>	Continue to enforce against SWPPP violations.
<b>BMP 46:</b>	For City projects, identify erosion control measures as a specific bid item.
<b>BMP 47:</b>	Participate in education training and seminars conducted by the State of Utah and other agencies.

**Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management).** Salt Lake City requires all commercial, industrial, and residential developments with impervious areas greater than 15,000 square feet to provide onsite detention facilities to limit the discharge to a pre-development rate of 0.2 cubic feet per second per acre during the 100-year storm. In addition to detention requirements, Salt Lake City will meet the Post-Construction retention requirements of the 2021 MS4 Permit by requiring new and redevelopment sites greater than 1-acre (or part of a common plan of development collectively disturbing greater than or equal to 1-acre) to retain less than or equal to the 80<sup>th</sup> Percentile storm event, or a predevelopment hydrologic condition, whichever is less. Salt Lake City has adopted an ordinance that addresses Post-Construction Storm Water Management and an incentive program to encourage property owners to exceed this standard in exchange for reduced storm water fees. In addition, the City continues to develop and

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maintain an inventory for structural storm water control measures. The following BMPs have been developed and implemented to address post-construction development to prevent or minimize storm water runoff from new development and redevelopment construction sites that disturb greater than or equal to 1-acre including projects less than 1-acre that are part of a common plan of development or sale.

BMP	Description
<b>BMP 11:</b>	Continue requirements for on-site detention for developments.
<b>BMP 12:</b>	Enforce the requirements of Salt Lake City Ordinances.
<b>BMP 14:</b>	Continue inspection and enforcement program for private long-term storm water BMPs.
<b>BMP 18:</b>	Review proposed street projects for applicability of structural water quality BMPs.
<b>BMP 19:</b>	Review all proposed storm water projects for applicability of structural water quality BMPs.
<b>BMP 20:</b>	Review detention basins for feasibility of retrofitting for water quality enhancements.
<b>BMP 22:</b>	Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.
<b>BMP 25:</b>	Review all new development and re-developments plans for compliance and illicit connections.
<b>BMP 43:</b>	Continue a storm water quality-training program for development and plans review personnel.

**Pollution Prevention and Good Housekeeping for Municipal Operations.** Salt Lake City has an inventory of City-owned and operated facilities. The City will continue to identify as “high priority” those facilities that have a high potential to generate storm water pollutants. Facilities identified as “high priority” will have required site inspections to assess structural and non-structural BMPs with the intent to reduce, to the MEP, pollutants to the MS4 from municipal facilities. Inspections will be conducted and documented to meet permit requirements. In addition, The City will develop specific SOPs (**Appendix D**) or similar documents for the Pollution Prevention and Good Housekeeping for Municipal Operations Program. The following BMPs have been developed and implemented with the goal of preventing or reducing polluted runoff from municipal operations to the MEP.

BMP	Description
<b>BMP 01:</b>	Clean the entire storm sewer system every 5 years.
<b>BMP 02:</b>	Inspect the storm sewer system and detention basins within the permit cycle.
<b>BMP 05:</b>	Remove leaves from gutters and inlets during the fall leaf season.
<b>BMP 06:</b>	Support the Curbside recycling effort for Salt Lake City residents.
<b>BMP 08:</b>	Track drainage system maintenance using Cityworks® system.
<b>BMP 09:</b>	Conduct annual training for drainage system maintenance personnel.
<b>BMP 10:</b>	Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.
<b>BMP 15:</b>	Support the existing Salt Lake City Street Sweeping program.
<b>BMP 16:</b>	Inspect salt/deicing material storage areas for proper storm water control measures.
<b>BMP 17:</b>	Continue procedures for monitoring storm water management on Public construction projects.
<b>BMP 18:</b>	Review proposed street projects for applicability of structural water quality BMPs.
<b>BMP 19:</b>	Review all proposed storm water projects for applicability of structural water quality BMPs.
<b>BMP 20:</b>	Review detention basins for feasibility of retrofitting for water quality enhancements.
<b>BMP 22:</b>	Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.
<b>BMP 33:</b>	Continue to implement a storm sewer spill response plan.
<b>BMP 38:</b>	Continue procedure for reporting and investigating possible SSOs into the storm sewer system.

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**Industrial and High-Risk Runoff.** Salt Lake City has developed a comprehensive Industrial Program to monitor storm water discharges from industrial facilities. Part of this program is to continue to develop and maintain an inventory of industrial sites. In addition, the City issues Salt Lake City SSID permits to run concurrent with the state issued UPDES Multi-Sector General Permit (MSGP) designated for industrial sites as defined by the 2021 Permit. All identified industrial sites shall be inspected at least once within the permit cycle; inspections will be conducted and documented in accordance with the 2021 Permit requirements.

In addition to the Industrial Program, Salt Lake City will develop and implement a program to identify, inspect and enforce “high priority” commercial facilities. High priority sites will be identified based on commercial facilities that are deemed to pose the greatest threat to water quality. (For details, see "Commercial Facilities Inventory, Prioritization and Inspection Program" SOP, in **Appendix D.**) Inspections and documentation shall meet at least the minimum requirements detailed in the 2021 Permit.

City ordinance gives legal authority to conduct inspections, require compliance, and enforce permit requirements. The following BMPs have been implemented to monitor pollutants in the runoff from industrial and high-risk runoff facilities:

BMP	Description
<b>BMP 39:</b>	Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.
<b>BMP 40:</b>	Identify and prioritize industrial and priority commercial groups for inspections and education.
<b>BMP 41:</b>	Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.
<b>BMP 42:</b>	Distribute water quality education materials to industrial and priority commercial facilities.
<b>BMP 44:</b>	Continue to obtain and review SWPPPs for construction projects and industrial facilities.

**Monitoring, Recordkeeping and Reporting.** Salt Lake City will continue to implement wet weather monitoring and dry weather screening as outlined in the 2021 Permit. Wet Weather monitoring includes sampling and analyzing storm water to look for trends or patterns that may identify pollutants to target in storm water management. Weather permitting, wet weather monitoring is conducted twice a year, once in the spring and once in the fall. Dry weather screening includes conducting a visual inspection of all outfalls during dry weather seasons when there are no storm water flows; this helps in identifying potential illicit discharges and illegal connections to the MS4. All outfalls shall be inspected within the permit cycle. Monitoring data is detailed in the Annual Report and all sample results and analytical data will be stored electronically.

Recordkeeping and documentation is an integral part of the SWMP and the SWQ Program. All events pertaining to the six minimum control measures and the 2021 Permit are to be documented and stored electronically.

The City will continue to prepare an annual report and submit it to the DWQ in accordance with the requirements outlined in the 2021 Permit. The preparation of the Annual Report is a critical process in which the SWMP is to be reviewed, along with an assessment of BMPs, their effectiveness, and any other data pertinent to SWQ Program management.

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## 2.0. SPECIAL CONDITIONS (Permit §3.0.)

The 2021 Permit requires the SWMP to address special conditions, including potential impacts of discharges to impaired waterbodies, and the reduction of nitrogen and phosphorus pollution. This section identifies and addresses those special conditions.

### 2.1. DISCHARGES TO WATER QUALITY IMPAIRED WATERS (Permit §3.1.)

In accordance with the Combined 2018/2020 Integrated Report (DWQ, 2020), there are currently five impaired waterbodies within Salt Lake City. The waterbodies and information on impairment and Total Maximum Daily Load (TMDL) are presented in **Table 2.1**.

**Table 2.1 Impaired Waterbodies in Salt Lake City (Combined 2018/2020 Integrated Report, amended)**

Watershed Management Unit	Watershed Management Name	Assessment Unit Description	Beneficial Use <sup>1</sup>	Impaired Parameter	TMDL Status
Jordan River	Emigration Creek Lower	Emigration Creek and tributaries from 1100 East (below Westminster College) to stream gage at Rotary Glen Park (40°44'58.49"N, 111°48'36.29"W) above Hogle Zoo	2B	E. Coli	not supporting
<b>Jordan River</b>	<b>Jordan River – 2</b>	<b>Jordan River from Davis County line upstream to North Temple</b>	<b>2B</b>	<b>E. Coli</b>	<b>Approved TMDL</b>
Jordan River	Jordan River – 2	Jordan River from Davis County line upstream to North Temple	3B	Macroinvertebrates	not supporting
<b>Jordan River</b>	<b>Jordan River – 2</b>	<b>Jordan River from Davis County line upstream to North Temple</b>	<b>3B</b>	<b>Minimum Dissolved Oxygen</b>	<b>Approved TMDL</b>
<b>Jordan River</b>	<b>Jordan River – 3</b>	<b>Jordan River from North Temple to 2100 South</b>	<b>2B</b>	<b>E. Coli</b>	<b>Approved TMDL</b>
Jordan River	Jordan River – 3	Jordan River from North Temple to 2100 South	3B	Macroinvertebrates	not supporting
Jordan River	Jordan River – 3	Jordan River from North Temple to 2100 South	3B	Total Phosphorus as P	not supporting
<b>Jordan River</b>	<b>Jordan River – 3</b>	<b>Jordan River from North Temple to 2100 South</b>	<b>3B</b>	<b>Minimum Dissolved Oxygen</b>	<b>Approved TMDL</b>
Jordan River	Parleys Canyon Creek – 1	Parleys Canyon Creek and tributaries from 1300 East to Mountain Dell Reservoir	1C; 2B	E. Coli	not supporting
Jordan River	Parleys Canyon Creek – 1	Parleys Canyon Creek and tributaries from 1300 East to Mountain Dell Reservoir	3A	Macroinvertebrates	not supporting
Jordan River	Red Butte Creek Lower	Red Butte Creek and tributaries from 100 East street to Red Butte Reservoir	3A	Macroinvertebrates	not supporting

<sup>1</sup> 1C – Domestic Water Supply

2B – Secondary Contact Recreation

3A – Cold Water Species of Game Fish

3B – Warm Water Species of Game Fish

4 – Agriculture

Salt Lake City currently discharges storm water to the impaired waters identified in Table 2.1. Salt Lake City has been involved with development of the TMDLs for these streams and will continue to implement BMPs and evaluate potential impacts to impaired waterbodies. Per Section 3.1.2. of the 2021 Permit, the



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City will control discharges of the pollutants of concern for the following impaired parameters (listed in order of priority), in the proceeding ways:

- **Minimum Dissolved Oxygen**

- The approved TMDL for this parameter identifies total organic matter as the pollutant of concern and suggests a linkage between reduced dissolved oxygen and nutrient loading and increased organic matter loading. At the completion of Phase 1 of the TMDL (DWQ, 2013), loading of organic matter needs to be reduced by 38%. Waste load allocations have not yet been implemented but a retention credit system is being devised which will allow for MS4s to get credit for any installed structural BMPs that can reduce organic matter, sediment loading, and other pollutants in storm water runoff by increased retention of storm water runoff.
- The following BMPs will continue to be employed by the City to control the discharge of the pollutants of concern affecting the concentration of dissolved oxygen:
  - Implement the “Tan Can” program for customers to properly dispose of organic matter from private landscaping maintenance.
  - Maintain landscaping at City owned facilities and public rights-of-way through the O&M program with appropriate practices for disposal of organic matter.
  - Implement the street sweeping program throughout the year, with an emphasis on autumn leaf cleanup.
  - Enforce ordinances prohibiting the discharge of pollutants, including soil and organic matter, into the MS4;
  - A public outreach and education program will broadcast the message to the public and commercial outreach will be conducted to target the businesses that have the potential to discharge organic matter, sediment, oil, and grease, including: landscape maintenance companies, construction operators, food-related businesses, and automotive repair/fueling businesses, etc.

- ***Escherichia coli***

- *Escherichia coli* (E. coli) (for which there is an Approved TMDL for the Jordan River Watershed) can be traced to fecal matter of warm-blooded animals, as the bacteria is found in their gastrointestinal tracts. The presence of increased concentrations of E.coli in freshwater is harmful to human health, particularly during contact recreation, and is an indicator of contamination by sanitary sewage or animal waste. Sources of increased E.coli concentrations are generally found to be from poor sanitary waste management at on-site sewage facilities (OSSFs, or septic systems), and sanitary sewer overflows (SSOs) associated with municipal sewage conveyance and treatment systems, as well as improper pet waste management.
- The regulation of OSSFs for proper maintenance and function, prohibition (and education) against improper pet waste disposal/management, and the operations and ongoing maintenance of municipal sanitary sewer systems and water reclamation facilities (WRFs) are the primary methods for prevention of E.coli contamination which are employed by the City. Although there are not many OSSFs within the City’s MS4, there are towns, cities, and unincorporated areas upstream which do have OSSFs that contribute significantly to the impairment of the Jordan River. See Appendix J for the E. Coli TMDL Compliance Plan.

- **Total Phosphorus as P**

- While an impairment causing parameter, no TMDL has been developed for phosphorus in the Jordan River. There are two primary types of phosphorus: particulate and dissolved. Particulate phosphorus is generally attached to soil particles and is more easily treated through sediment control practices; while dissolved phosphorus is much more difficult to treat and thus the reduction of phosphorus is most effectively achieved through behavioral changes at the local level to reduce the discharges of phosphorus. Sources of phosphorus from urban storm water runoff and some associated pollution prevention methods include:

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- Residential: fertilizer and pesticide management, litter and animal waste control, yard waste management, improved car and equipment washing practices, improved sanitary waste management, native landscaping, sediment control through ground stabilization of exposed soils, and general healthy lawn maintenance.
- Industrial/Commercial/Institutional (including MS4s): better landscaping management practices, proper vehicle management, sanitary sewer maintenance, construction sediment control, wind erosion control, material storage control, dumpster and landfill management, better street and parking lot cleaning practices, storm sewer maintenance, and installation of BMPs that are designed to remove phosphorus through infiltration, filtration, and retention.
- The sources and pollution prevention methods listed above will be employed by the City for all operations and maintenance activities of the City, which have the potential to discharge phosphorus. Further, prevention will be achieved through regulatory enforcement of storm water permits and ordinances, as well as a robust public outreach and education campaign to change behaviors in the residential and commercial/industrial communities.
- **Macroinvertebrates**
  - While an impairment causing parameter, no TMDL has been developed for benthic macroinvertebrate impairment. Benthic macroinvertebrates are bottom-dwelling insects (primarily) that can be collected and assessed for their relative proportions of species that have known tolerances to pollution. Therefore, they are an indicator biotic community that can be used to show changes over time and ultimately impairment of a water body, as these species are essential functional and trophic (feeding) groups for overall aquatic ecosystem health.
  - While there is no direct BMP to be employed for reducing this impairment, it is understood that efforts to protect and improve the quality of water in the Jordan River will have a positive effect on the macroinvertebrate community.

## 2.2. NITROGEN AND PHOSPHORUS REDUCTION (PERMIT §3.2.)

Elevated concentrations of nutrients (particularly nitrogen and phosphorus) in water bodies are a significant water quality concern, globally, as eutrophication (nutrient enrichment) can lead to the growth and proliferation of algae, including harmful algal blooms (HABs). Algae affect aquatic ecosystem health and water quality in multiple ways, including blocking sunlight penetration into the water column, which decreases the growth of beneficial plants and degrades habitat for aquatic biota, affecting the food chain; the increased respiration of the expanding algae blooms decreases dissolved oxygen at night and increases the concentration of carbon dioxide in the water column, increasing acidity which affects health and functionality of the entire ecosystem; then as the bloom dies off and decomposition increases, the remaining oxygen in the water is depleted, creating anoxic conditions that kill the remaining aquatic life. Further, HABs can impact public health as some species of algae contain toxins that can harm or kill humans and other animals that come in contact with the algae/toxins. As such, the reduction of nitrogen and phosphorus discharges into surface waters is an important goal of the City's SWMP.

In following the requirements of the 2021 Permit, the City will address this water quality concern primarily through outreach and education by first contributing to a collaborative program, the SLCo *Stormwater Coalition*, which evaluates, identifies, and targets sources of nitrogen and phosphorus pollution, and provides outreach that addresses potential sources within Salt Lake County (2021 Permit: 3.2.1.1.). Second, the City will identify and target sources that are contributing (or have the potential to contribute) nitrogen and phosphorus to WOTS (2021 Permit: 3.2.1.2.). Third and last, the City will prioritize targeted sources that are likely to result in a reduction of nitrogen and phosphorus in discharges through outreach and education (3.2.1.3.). Details of these planned efforts will be provided in the Public Education and Outreach chapter (3.0) of this SWMP.



### 3.0. PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS (Permit §4.2.1.)

The *Public Education and Outreach on Storm Water Impacts* Program is intended to increase public awareness of problems and solutions regarding storm water quality. The program is aimed at stimulating the public and regulated communities to alter lifestyles and practices and to make the financial commitments necessary to reduce storm water pollutants into the MS4 and preserve water quality. Education is recognized as an effective management tool that fosters recognition on the part of the public of their habits that contribute to the degradation of water quality. An educated public can also help protect the MS4 and WOTS in a proactive manner by preventing contaminations before they happen and to help identify and report illicit discharges when they do occur.

#### 3.1. DESCRIPTIONS & BMPs

The *Public Education and Outreach* Program utilizes a multimedia approach to target four audiences in accordance with Part 4.2.1 of the 2021 Permit. These audiences include residents; institutions, industrial and commercial facilities; developers and contractors (for construction, including City plans review and engineering staff); and MS4 Owned or Operated Facilities. The information provided to these audiences includes content regarding potential impacts of storm water on receiving waters and methods for minimizing these impacts. The main program components include:

- Participation in a county-wide collaborative coalition of other MS4s conducting education and outreach to the public via broadcast media, social media, signage and advertising, public and private training resources, and a website (4.2.1.1., 4.2.1.2., 4.2.1.3., & 4.2.1.4.)
- Tabling at various festivals, symposiums, and public events (4.2.1.2.)
- Maintenance and distribution of a collection of targeted informational content (flyers and handouts) for various topics for both residential and commercial (4.2.1.3.)
- Operations & Maintenance pollution prevention training program for City staff (4.2.1.5.)
- Prioritization of high-risk commercial businesses for targeted education and outreach (4.2.1.3.)
- Training for City staff involved in the planning, design, review, and implementation of post-construction BMPs for new development and redevelopment projects, including infrastructure retrofits (4.2.1.6.)

Additionally, the 2021 Permit includes education and outreach as a requirement for other MCMs detailed in this SMWP; as such, this program is integrated to provide up-to-date content and outreach efforts with other SWMP sections, including the *IDDE*, *Construction Site Storm Water Runoff Control*, *Long-Term Storm Water Management*, and *Pollution Prevention and Municipal Good Housekeeping* Programs.

To achieve the goals of an educated community (including residential, commercial, and institutional audiences), the City is an active participant in various organizations that work collectively to reduce pollutants to storm water runoff by meeting and discussing common challenges and solutions. These groups and committees intend to promote consistent public and professional awareness. These groups include:

- *Salt Lake County Stormwater Coalition*: Provides the general public with information regarding storm water quality via a website, social media, and their “We All Live Downstream” educational campaign.
- *Utah Storm Water Advisory Committee (USWAC)*: Provides UPDES guidance and updates for governmental entities and other professional groups involved in storm water quality.
- *Salt Lake County Environmental Crimes Task Force*: Presents information, case review, and training for Salt Lake County municipalities with concerning illicit storm water and environmental crimes and enforcement.

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- *Salt Lake City Event Review Committee (ERC)*: Reviews upcoming special events in Salt Lake City for their potential impacts on the environment and the MS4. SLCDPU's role is to educate the applicants of the rules and regulations regarding discharges to the MS4 and ensure BMPs are developed and implemented.

### **3.1.1. RESIDENTIAL EDUCATION AND OUTREACH**

**Objective:** To reduce the discharge of pollutants to the MS4 by educating the public of the prohibitions against illicit discharges, the potential impacts of such discharges, and how altering their behavior can help reduce pollutants to the MS4.

**Permit Requirement:** Part 4.2.1., 4.2.1.1., 4.2.1.2., & 4.2.1.7. – Public Education and Outreach on Storm Water Impacts

Part 4.2.3.7., 4.2.3.8., 4.2.3.9. – Illicit Discharge Detection & Elimination

**Description:** This program promotes behavioral changes in residents by providing any number of opportunities to become educated about storm water pollution prevention. Such opportunities include: learning about proper waste disposal (through multiple waste collections programs and media campaigns); storm water educational programs at area schools; additional broadcast and social media campaigns focused on storm water issues; attendance at public events and receipt of City-related mailers whereby specific information is distributed which is relevant to residential activities that can impact water quality; websites for information and resources; and education targeted to residents that have caused, or have the potential to cause, an illicit discharge, as provided during investigations, abatement efforts, and enforcement actions. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 03:** Support “Tan Can” yard waste pickup for Salt Lake City residents.

**BMP 04:** Support the “Call-2-Haul” bulky waste cleanup program for Salt Lake City residents.

**BMP 06:** Support the Curbside recycling effort for Salt Lake City residents.

**BMP 07:** Support resident clean-up days of selected waterways and natural areas.

**BMP 21:** Continue education program on the proper use of pesticides and fertilizers.

**BMP 26:** Promote SLCoHD Household Hazardous Waste Facility and Collection Services.

**BMP 35:** Continue program to promote public reporting of illicit discharges.

**BMP 37:** Continue education for residential users on water quality issues, impacts, and solutions.

*Collection and Clean-up Programs:* While Salt Lake City has created and continues to support multiple programs that encourage and elicit public participation and involvement, those programs also aim to inform and educate residents about the need for such programs. This includes the potential impacts on water quality that these programs can minimize, such as reducing the discharge of potential pollutants to the MS4 and receiving WOTS. Salt Lake City will continue to promote and support these integral programs (BMP 26 done in conjunction with SLCoHD).

*Water Quality Fair:* In cooperation with the Salt Lake County Coalition, the Water Quality Fair is held annually. The event is held at the Hogle Zoo, located in Salt Lake City. The fair consists of a series of booths and informational demonstrations presented by individual agencies; topics include

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storm water pollution and other water-related issues. This fair is held for sixth-grade students and coincides with the *Water Cycle* in the current school curriculum. Students spend a morning visiting the booths and learning about different aspects of water science and pollution prevention. Educational materials and promotional handouts are distributed. The intent is not only to provide storm water information to the students but for this information to be received by the students' families as well thuspotentially reaching a larger audience. The Salt Lake City SWQ Program delivers invitations to schools to attend the Water Quality Fair, at the same time offering classroom presentations on storm water quality.

*School Presentations and Curricula:* Salt Lake City students and educators are targeted for storm water outreach and education through programs that provide opportunities for presentations by water quality professionals (or conducted by informed educators) and an academic curriculum designed for teaching students about storm water issues.

*Presentations:* The City has an EnviroScape® watershed model to use in presentations at the City public and private schools, upon request. This model represents a watershed where students re-enact various scenarios to demonstrate non-point source pollution from residential, commercial, industrial, and agricultural sources and its effects on our lakes and rivers, as well as BMPs to minimize and control pollution. The City also has a 3-D interactive watershed model that allows students to create land formations out of sand, showing color-coded elevation contours, and then apply rain (digitally) to the newly created watershed to demonstrate watershed processes of water storage and residence time, as well as erosion and deposition, and flooding. Both models are available for presentations, upon request, and reasonable accommodations are made for presentations where a model is not requested.

*Curricula:* Additionally, the SLCo Stormwater Coalition engages in the development of materials and events to engage and educate teachers and students; this includes a storm water curriculum (completed in October 2020) that aligns with the Utah Science and Engineering Education (SEEd) standards. This is accomplished by introducing storm water concepts and educating students to learn about water quality issues associated with storm water and how to design new storm water solutions to address those issues. The Coalition's Curriculum Guide is focused on sixth graders and incorporates lesson plans and activity ideas, lesson extensions, and best practices in environmental education. The Coalition also conducts educational engagement through water science, engineering, and art competitions for students; participation helps students learn more about water issues faced by society and envision solutions anywhere from the local level to a global perspective.

*Media Campaign:* The Storm Water Coalition conducts a mass media campaign designed to reach a broad audience with the message of preventing storm water pollution from a wide range of sources. The Coalition partners with top-rated local TV stations and has created commercials that are broadcast throughout the state. Campaigns are typically conducted in the Spring and Fall and run for a two to three-week period. News stations are invited annually to the Water Quality Fair and have aired stories on the fair. The campaign also includes informational banners at public sites (such as parks), on mass-transit busses and internet advertising that is generally partnered with local TV websites.

*Educational Materials:* These materials are designed to promote best practices, and to educate/remind the community about storm water quality issues. Materials distributed by the Coalition and the City include information designed to promote the SWQ Program and bring awareness of the complexities of storm water management. The City will continue to look for opportunities to expand the suite of outreach materials available for distribution by developing new materials as storm water issues arise which are deemed relevant. Current educational outreach/materials include:

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- Various handouts, informational flyers, and brochures on the following topics:
  - General Storm Water Quality (Storm Drain) Awareness
  - Fats, oils and greases (FOG)
  - Prescription drug disposal
  - Watershed “Keep it Pure” campaign
  - Dogs in the Wasatch front
  - Waterwise Watering
  - Swimming Pool Management
  - Pet Waste Disposal
  - Landscaping and Yard Maintenance
  - Proper Use of Pesticides, Herbicides, and Fertilizers
  - Erosion control
  - Low Impact Development (LID) & Green Infrastructure (GI)
  - Fresh concrete and mortar application
  - Paint and household hazardous waste disposal
  - Household and vehicle maintenance/cleaning
  - Salt pile storage/containment
  - Water Conservation
- *Consumer Confidence Report:* Salt Lake City’s Consumer Confidence Report addresses storm water quality issues and is delivered annually to residents (over 90,000 water connections) within the City and other communities within the City’s water service area. The Consumer Confidence Report is available in English and Spanish and is also posted on the SLCDPU’s website.
- *Utility Bill Inserts/Messages:* SLCDPU’s utility billing system produces monthly billing statements that have a text box in which messages can be inserted. Message examples include fall leaf clean-up and disposal practices, snow removal, gutter maintenance, etc.
- *Water Conservation Annual Calendar:* SLCDPU annually publishes approximately 25,000 calendars that cover a broad range of topics for the Department including storm water quality. The calendars are distributed free of charge to the public throughout the City to locations including public buildings, libraries, schools, etc.

Note: due to the uncertainty of local businesses and schools being open due to the COVID 19 pandemic, the publication of the annual calendar was suspended for the 2021/2022 calendar years. We are hopeful that the publication of the annual calendar will resume for the 2023 calendar year.
- Other storm water promotional items distributed will include, but are not limited to: water bottles, lip balm, reusable grocery bags, pencils, dog-waste bags/dispensers, rain ponchos, umbrellas, and tabloids activity books.

*Social Media and the Internet:* Public outreach and education to residents are also conducted on the internet by both the City and the SLCo Stormwater Coalition through various social media and other internet websites:

*Social Media:* The Coalition has an active presence on social media platforms including Facebook (“We All Live Downstream”), Twitter (@MrDroplet), and Instagram (“WeAllLiveDownstream”) and features the use of the following hashtags: #WeAllLiveDownstream, #Yardcare, #DontTrashOurStormwater, #DoALittleHelpALot, #KeepTheWaterMoving, #RakeEmUp, #StormwaterCarCare, #ScoopThePoop, and

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#SLCoStormwaterCoalition. Educational content from these platforms ranges from topics related to waste disposal and pollution prevention, to home/yard/vehicle maintenance, stream-friendly practices, and higher-level topics such as eutrophication and impacts to aquatic flora and fauna. Various City departments also have a presence on these social media platforms; and while their sole focus is not storm water or pollution prevention, these other City departments seek out opportunities to include storm water messaging in social media postings.

*Internet:* The SLCo Coalition maintains a regularly updated informational website: <http://www.stormwatercoalition.org>. This website not only provides storm water information, including a podcast (“Untreated”), but also provides links to other sites for information and resources, as well as member sites for more local information. The Coalition also maintains a YouTube channel (“We All Live Downstream SLCo Stormwater Coalition”) which provides videos that educate the public on storm water issues and is available for inclusion in various digital platforms. In addition to the Coalition site, Salt Lake City has storm water information available on its website: <http://www.slcgov.com/utilities>. This site includes:

- Tips for residents and homeowners in protecting the MS4.
- Posted hotline number (24-hour emergency dispatch: 801-483-6700) for reporting illicit discharges/dumping into storm drains.
- Advertisements for outreach events.
- Flood control and stream protection information.
- Link to the current Salt Lake City MS4 Permit (UTS000002).
- Link to the current Salt Lake City storm water ordinance (Title 17, Division III, Chapters 17.75, 17.78, 17.81, 17.84, 17.87, and 17.91).
- Link to the current SWMP with contact information to allow for public interaction and participation in the program development; this is further detailed in Section 4.1.1. – Public Participation/Involvement of this SWMP.
- The City will continue to look for opportunities to update and add more information to the website.

*Targeted IDDE Residential Outreach:* When a resident is identified as being in violation of City ordinances, either through a complaint received about potential pollution or improper practices or through observation by City staff of an illicit discharge (or other potential storm water contamination source), the resident will be contacted for investigation and educational outreach to determine the most appropriate BMPs to correct the violation by addressing the practices that are contributing to the violations. This outreach will be conducted in tandem with any illicit discharge investigations and will fully educate the violator(s) of the City’s prohibition against (and potential impacts of) illicit discharges, as well as provide resources and help remediate the spill/discharge if needed in addition to guidance on ways to prevent future/recurring violations.

*Pesticide and Fertilizer Reduction Program:* An essential water quality protective program that addresses residential and commercial applications of pesticides and fertilizers, called *Pesticide Free SLC*, is conducted by the Salt Lake City Department of Sustainability as part of the *Healthy Babies Bright Futures* initiative. This program includes information available online and at community engagement opportunities about the health and environmental impacts of the use and misuse of such chemicals, as well as tips for environmentally conscious applications and organic alternatives for a less toxic approach to lawn care and pest management. The program involves a pledge that residents can take to reduce or eliminate the use or misuse of the chemicals and includes a public resource guide available online. The SLCo Coalition also targets the reduction of pesticide and fertilizer use by residents in their outreach and education media programs.

### 3.1.2. INSTITUTIONAL, INDUSTRIAL AND COMMERCIAL EDUCATION AND OUTREACH

**Objective:** To reduce the discharge of pollutants in storm water to receiving waters from institutions, industrial and commercial facilities by taking a proactive approach in educating these users on illicit discharges and the potential impacts; particularly in relation to their specific business or business process.

**Permit Requirement:** Part 4.2.1.3., & 4.2.1.3.1. – Public Education and Outreach on Storm Water Impacts

Part 4.2.3.3.4., & 4.2.3.7. – Illicit Discharges Detection and Elimination

Part 4.3.2. – Industrial & High-Risk Runoff

**Description:** The City will continue to provide information to institutional, industrial, and commercial users about water quality impacts associated with illicit discharges and improper disposal of waste. The information distributed is aimed at addressing specific facilities that are more likely to have discharges which may have an adverse effect on storm water quality. The intent is to educate institutional, industrial and commercial users about their activities that could potentially impact water quality and highlight any applicable regulations against (and consequences of) prohibited discharges. This is accomplished through the development of educational materials and the distribution of those materials to targeted facilities. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 21:** Continue education program on the proper use of pesticides and fertilizers.

**BMP 36:** Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.

**BMP 40:** Identify and Prioritize industrial and priority commercial groups for inspections and education.

**BMP 42:** Distribute water quality education materials to Industrial and priority commercial facilities.

*Commercial Educational Materials:* Brochures, handouts, and other relevant information will continue to be developed to target commercial and industrial users and will be distributed, as applicable. Specific topics to be included in this education program include the City's prohibition of illicit discharges, proper lawn maintenance, benefits of on-site infiltration of storm water, building and equipment maintenance, proper use/storage of salt or other deicing materials, proper storage of materials, proper management of waste materials and dumpsters, and proper management of parking lot surfaces.

*Commercial Outreach:* For targeted commercial outreach, SLCDPU will identify existing and new industrial and commercial facilities and determine the potential for prohibited discharges from these facilities.

- New facilities will be identified as requiring outreach by their type of business through new business licensing, and by use of an Industrial & Commercial User Questionnaire (ICUQ) form. SLCDPU will conduct outreach to those applicable facilities by either requiring industrial storm water permitting for applicable industrial facilities (which involves a substantial amount of outreach and education through permitting and compliance

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interactions), or site visits and pollution prevention discussions with facilities that are anticipated to have a high potential to discharge pollutants; particularly if the facility falls into a commercial category that has been prioritized for outreach (as required in 4.3.2. of the 2021 Permit).

- Existing facilities will be identified by the type of business through a database of existing business licenses and through collaboration with the SLCoHD Food Inspections and SLCDPU Pretreatment programs. When a facility is identified as being high-risk, priority commercial (further details on the prioritization process are provided in the *Industrial & High-Risk Program* component of this SWMP) or a complaint has been received from the public, City staff, or other regulatory authorities about improper practices on-site that have caused (or have the potential to cause) an illicit discharge, the facility will be targeted for site assessment and outreach to determine the most appropriate BMPs to address the practices that are contributing to the violations, or potential violations, of city ordinances and state water quality standards. This outreach will also be conducted in tandem with any illicit discharge investigations involving institutional, industrial, or commercial users.

### 3.1.3. DEVELOPER AND CONTRACTOR EDUCATION PROGRAM

**Objective:** Promote best practices and behavioral changes in the construction industry to reduce water quality impacts associated with construction storm water runoff and construction-related illicit discharges by providing educational information to developers and contractors on topics related to new regulations, technologies, and permit requirements. If compliance is not obtained through education and outreach, SLCDPU has an escalating enforcement procedure that is used when appropriate.

**Permit Requirement:** Part 4.2.1.4. – Public Education & Outreach on Storm Water Impacts

Part 4.2.3.3.4., & 4.2.3.7. – Illicit Discharge Detection and Elimination

Part 4.2.5.1.3., 4.2.5.1.4. – Long-term Storm Water Management in New Development & Redevelopment

**Description:** This program informs and educates engineers, contractors, developers, development review staff, and land use planners on current storm water regulations, SWPPP requirements, prohibitions of (and water quality impacts associated with) illicit discharges and improper waste disposal, and BMPs regarding construction activities by providing educational materials on relevant subjects, such as our permitting processes and our fees/enforcement schedule. In addition, information regarding construction activities may be provided during site inspections or through Salt Lake City's website, planning/development guidance documents, training videos, and/or pre-construction meetings for applicable projects. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component and will continue to be implemented:

*Education on Storm Water Regulations & SWPPP Requirements:* When a new storm water regulation or SWPPP requirement arises, SLCDPU will update any program guidance documents available to the development community through the City's permitting and planning systems, including checklists, permitting forms, templates, standard design manuals, and brochures. An example of a new storm water regulation requiring outreach and education is the implementation of the 80<sup>th</sup> percentile storm retention standard from the 2021 MS4 Permit. SLCDPU will provide details of new, pertinent, or timely information to the development community through the use of email campaigns, handouts, mailers, pre-construction meetings, and/or public training opportunities, as needed. An example of a timely SWPPP requirement for which educational outreach email campaigns have been useful and effective is the topic of drought exceptions and considerations (distributed 6/30/2021 to all



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construction permittees and relevant contacts). These efforts are tracked as outreach and always include a request for feedback and discussion so that the educational needs of the development community are addressed.

*Education on Prohibition & Impacts of Illicit Discharges:* Through ordinance and permit requirements, illicit discharges are effectively prohibited in Salt Lake City. Information about illicit discharges and their potential impacts are shared during regulatory site inspections and discharge investigations, and a storm drain protection brochure is distributed as education when needed. Additionally, through ordinance and the planning and permitting systems, the development community is educated on what constitutes an allowable discharge. Through plan and SWPPP reviews, developers learn that construction dewatering without a State and City permit is an illicit discharge. Furthermore, a template and plan review checklist is available for proper development of an acceptable Dewatering Control Plan. If a proposed project is located in an area with soil or groundwater contamination, applicants are required to address the contamination and if there is a need to discharge treated groundwater, then a discharge permit is required.

*Education on Construction-Related BMPs:* During the planning and permitting process, the City provides guidance documents to applicants for proper construction BMP selection and design/maintenance specifications (accessible by a documents website). The guidance documents pertain to BMPs for both active construction (*SLCo Best Management Practices for Construction Manual*, 2007), as well as post-construction control measures (*SLC Building Process & Design Manual*, 2012, under revision in 2021). For guidance on the implementation of LID and GI as post-construction control measures, including proper sizing, maintenance needs, and targeting specific pollutants, the DWQ LID guidance manual (*A Guide to Low Impact Development in Utah*) is offered as a resource to be used in tandem with the *Building Process & Design Manual*. These manuals ensure that BMP implementation is consistent, where feasible, among all applicable projects. Information regarding BMPs is also relayed to operators and contractors during regulatory construction site inspections.

### **3.1.4. MUNICIPAL FACILITIES & EMPLOYEE EDUCATION PROGRAM**

**Objective:** Reduce the discharge of pollutants from municipal facilities and operations through education regarding the prohibitions against – and potential impacts of – illicit discharges, poor housekeeping, and improper disposal of wastes, and through education regarding appropriate long-term storm water management by use of LID practices.

**Permit Requirement:** Part 4.2.1.5 & 4.2.1.6 – Public Education and Outreach on Storm Water Impacts

Part 4.2.4 – Construction Site Storm Water Runoff Control

Part 4.2.5 – Long-term Storm Water Management in New Development and Redevelopment

**Description:** This program educates City staff (and contractors) about the prohibition against, and potential impacts of, illicit discharges at city-owned or operated facilities, as well as MS4 engineers, development and plan review staff, land-use planners, and other (applicable) city employees about long-term storm water management requirements, including implementation of GI and LID practices. Applicable City personnel will be provided annual training with regards to the City's MS4 storm water regulations, inspections and maintenance, BMPs for businesses and commercial facilities, and construction sites and MS4 industrial facilities. Training may include various methods and mediums. Training topics will include the following (with emphasis on pollution prevention):



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- Equipment inspection and maintenance
- Proper storage of industrial materials
- Proper management and disposal of wastes
- Proper management of dumpsters
- Minimization of use of salt and other de-icing material
- Benefits of on-site infiltration
- Proper maintenance of parking lots

The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

*Education about Illicit Discharges:* Through SOPs, contracts, agreements, newsletters, signage, training, and an O&M corrective actions program, City staff are educated about the water quality impacts associated with illicit discharges, and the City's prohibition against them. An SOP manual has been developed to guide the pollution prevention practices of multiple departments and divisions that either has the potential to cause – or have the potential to encounter – an illicit discharge through their daily duties. The SOP manual will be reviewed and revised as roles or tasks change, better practices are found, and new standards are implemented. City contractors are required to follow the standard practices of all regular City staff; this is written into their contracts. Through observation, complaints, or need for refresher training, any City (or contractor) staff found to be causing – or whose actions have the potential to cause – an illicit discharge, are educated on the severity of the violation, the potential impacts of continuing their poor practices, and the regulatory enforcement actions that could come as a result of the failure to follow proper procedures.

*Education about Long-Term Storm Water Management (including LID/GI):* All City employees whose duties involve the design and planning of new public infrastructure or retrofits/upgrades to existing facilities, including those that are plans reviewers of private projects, will continue to be educated about the requirements for those plans to include post-construction BMPs, under certain circumstances, as described in section 7 of this SWMP and 4.2.5. of the 2021 Permit. Through training, guidance documents, team meetings, and external resources including webinars and conferences, applicable City employees will be educated on the complexities of managing storm water, including the implementation of GI and LID practices, and the alternatives available if site characteristics prevent the inclusion of such BMPs.

### 3.1.5. EDUCATION EVALUATIONS

**Objective:** To obtain feedback regarding the education and outreach program from the general public and training participants as a means to gauge the effectiveness of the education provided.

**Permit Requirement:** Part 4.2.1.7. - Public Education and Outreach on Storm Water Impacts

**Description:** The City will continue to develop and utilize evaluation methods to obtain and record data that represents knowledge gained through the Public Education and Outreach, and O&M Training Programs. These evaluation methods may include but are not limited to surveys, exit polls, interviews, round table discussions and comment cards. The feedback provides useful information on the effectiveness of the education program and helps to guide future efforts by determining what methods were most effective, and what areas need improvement or more focused messaging. While gauging the effectiveness of outreach and education can be challenging at public events where interactions are often limited by time and space, the SLCo Coalition conducts public surveys to gauge the overall knowledge and understanding of residents. Examining these results, and how they change over time, allows the City (and its partners) to adjust and improve educational efforts in a more targeted and hopefully receptive manner. The most recent public surveys (2010 and 2020) were funded through the SLCo Stormwater

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Coalition, results of the 2020 survey (which includes comparisons over time for questions with data from multiple survey years) can be found in **Appendix F**. Salt Lake City residents have consistently been the most active participants in these surveys and have shown to retain a strong understanding of (and compassion for) storm water and water quality issues.

### 3.2. STAFFING AND RESOURCE ALLOCATIONS

*Public Education and Outreach* is conducted in large part by the Salt Lake County Stormwater Coalition (Coalition) and its media campaigns; the City's SWQ Program is an active chair member of the Coalition and SLCDPU contributes \$28,000 annually to the Coalition's budget. Internally, the SWQ Program has a designated program Coordinator for outreach and education, whose role includes attendance at local public events for purposes of outreach, as well as the creation, revision, and distribution of educational materials and content within the City's jurisdiction. SLCDPU staff from the Water Quality Division (including the Cross Connections, Watershed, and SWQ teams) assist with outreach events. With regard to the O&M program, individual work groups are responsible for adhering to their SOPs, and their respective supervisors are responsible for ensuring that those standard practices are followed and that new hires are trained. SWQ staff will either provide or assist in the annual training and refreshers needed to maintain an informed workforce and meet 2021 Permit requirements.

### 3.3. IMPLEMENTATION STATUS

Measurable goals for this program to be implemented and assessed during the permit term are presented in **Table 3.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

**Table 3.1 Implementation Status for Public Education and Outreach Program**

Schedule						BMP	Goal	Measurement	Responsibility
Permit Year									
1	2	3	4	5					
x	x	x	x	x	<u><b>BMP 03:</b></u> Support “Tan Can” yard waste pickup for City residents.	Minimize fall leaves from getting in the gutters and storm drain system.	Tons of leaves composted and used to measure the effectiveness of this BMP	SLC Department of Sustainability	
x	x	x	x	X	<u><b>BMP 04:</b></u> Support the ”Call-2-Haul” bulky waste cleanup program for Salt Lake City residents.	To keep household refuse and debris from entering the MS4.	The amount of residential debris removed each year is the measurement used for this BMP	SLC Department of Sustainability	
x	x	x	x	x	<u><b>BMP 06:</b></u> Support City Curbside Recycling effort for SLC residents	To reduce or eliminate material that can be recycled from getting into curbs, storm drainage conveyances, and Waters of the State.	The amount of material recycled and kept out of the storm drain system and the landfill.	SLC Department of Sustainability	
x	x	x	x	x	<u><b>BMP 07:</b></u> Support resident clean-up days of selected waterways and natural areas.	To improve the aesthetics of selected waterways by removing debris and to promote citizen awareness and responsibility regarding the waterway.	The change in the amount of debris removed from the waterway and hauled to the landfill is one measurement of the success of this BMP.	SLC Department of Public Lands	

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x	x	x	x	x	<b>BMP 21:</b> Continue education program on the proper use of pesticides and fertilizers.	To have an education program available to educate residents, commercial applicators, and municipal agencies regarding the proper use of pesticides, fertilizers, and herbicides.	The measurement for this BMP is the education provided to the various groups applying pesticides, fertilizers, and herbicides. As these groups become educated, products are properly used and the pollutants from over application are mitigated.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 26:</b> Promote SLCoHD Household Hazardous Waste Facility and Collection Services.	To provide the residents of Salt Lake City with a location where they can properly dispose of household hazardous waste.	The measurement for this BMP is the fliers, inserts, and additional information provided by Salt Lake City to promote the Electronic and Household Hazardous Waste Collection at Salt Lake City-County Health Departments permanent facility.	SLCDPU, SLCDPU SWQ; SLCoHD
x	x	x	x	x	<b>BMP 35:</b> Continue program to promote public reporting of illicit discharges.	To have a program that promotes the interest of pollution prevention to the public, and provides information regarding illicit flows and reporting procedures.	The measurement for this BMP is the number of illicit flows reported and resolved.	SLCDPU, SLCDPU Water Quality (and SWQ)
x	x	x	x	x	<b>BMP 36:</b> Educate the public on nitrogen and phosphorus pollution sources, water quality impacts, and solutions/controls	To have a program educates the public on the impacts, sources, and solutions of Nitrogen and Phosphorus pollution; and to alter behaviors that have the potential to negatively impact water quality.	The measurement for this BMP is the number of water quality outreach efforts (events, mailers, ads, social media posts, etc.) that target Nitrogen and Phosphorus pollution.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 37:</b> Continue education for residential users on water quality issues, impacts, and solutions.	To have an education program aimed at residential audiences to promote the proper disposal of oil and household toxic materials.	The measurement for this BMP is the number of residents that are educated and properly disposing of material at the Household Hazardous Waste Facility.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 40:</b> Identify and Prioritize industrial and priority commercial groups for inspections and education.	To identify and prioritize industrial and priority commercial facilities based on sites/sources that pose the greatest threat to water quality; and to provide them with relevant educational materials to promote best practices to prevent storm water pollution.	The Measurement of this BMP will be the amount of facilities identified and listed in the industrial and priority commercial inventory, as well as the number of targeted groups that receive educational material about their roles in protecting water quality.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 42:</b> Distribute water quality education materials to Industrial and priority commercial facilities.	To provide information to target industrial groups with BMPs regarding water quality, including notifying the industrial facilities of the compliance requirements of the State General Industrial Storm Water Permit.	The measurement of this BMP is the number of target industrial groups that are provided with water quality materials and State/City Industrial Storm Water Permit.	SLCDPU SWQ Program

(x) Indicates year to be implemented or describes an on-going BMP

#### 4.0. PUBLIC INVOLVEMENT/PARTICIPATION (Permit §4.2.2.)

The City's *Public Involvement/Participation Program* is designed to involve the general public, stakeholders, and other potentially affected parties in the development and implementation of the SWMP, and encourage participation in activities that promote protection or improvement of water quality. Interaction between Salt Lake City and its residents/customers is an integral part of protecting storm water quality and fosters an environment where the public is engaged through stewardship and empowered through stakeholder comments and involvement.

#### 4.1. DESCRIPTIONS & BMPs

This program provides opportunities for participation and involvement by the public in various activities that protect water quality, either directly (through waste management and environmental stewardship), or indirectly (as with involvement in planning and program development). The City provides these opportunities for engagement to simultaneously involve and empower residents and businesses to take ownership of their role in protecting storm water quality. It is hoped that as residents become more involved, they will begin to engage other residents, either by inviting others to participate or by setting an example of environmental stewardship and waste management for others to follow and emulate.

##### 4.1.1. PUBLIC INVOLVEMENT/PARTICIPATION OPPORTUNITIES

Objective: Protect water quality by involving the public in storm water pollution prevention and SWQ program engagement in the promotion of the goals and policies of the SWQ Program.

Permit Requirement: Part 4.2.2., 4.2.2.1., 4.2.2.2., and 4.2.2.3. – Public Involvement /Participation

Description: The City's program for public involvement includes opportunities for public engagement through: (1) waste collection programs for the public to participate in; (2) public input opportunities for the development (and subsequent revisions) of the SWMP and other policy decisions; and (3) volunteer environmental stewardship and awareness activities. Additional opportunities for SMWP input by the public are provided through various stakeholder groups, advisory panels, and committees throughout the watershed(s). In addition, this program complements the *Public Education and Outreach* and *IDDE* Programs by encouraging public reporting of illicit discharges while providing opportunities for public involvement/participation activities that include educational elements. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

- BMP 03:** Support "Tan Can" yard waste pickup for Salt Lake City residents.
- BMP 04:** Support the "Call-2-Haul" bulky waste cleanup program for Salt Lake City residents.
- BMP 05:** Remove leaves from gutters and inlets during the fall leaf season.
- BMP 06:** Support the Curbside recycling effort for Salt Lake City residents.
- BMP 07:** Support resident clean-up days of selected waterways and natural areas.
- BMP 26:** Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
- BMP 35:** Continue program to promote public reporting of illicit discharges.
- BMP 37:** Continue education for residential users on water quality issues, impacts, and solutions.

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*Waste Collection & Disposal Programs:* Salt Lake City provides (or encourage participation in) multiple, progressive waste collections and disposal programs that are integral to protecting water quality through proper waste management, including the following:

- Tan Can Program (for disposal of organic waste from residential landscape maintenance activities);
- Recycling Program (for minimizing pressures on solid waste facilities and reducing potential floatable objects that become storm water pollution when improperly discarded);
- Call 2 Haul Program (for removal of bulky solid waste);
- The City Police Department's Pharmaceutical Collections & Disposal Program; and
- Promotion of the SLCoHD Household Hazardous Waste Program (for collection and proper disposal of solid and liquid wastes that are hazardous to public and environmental health).

Participation in these programs is voluntary, but through additional outreach and education, enforcement against improper disposal practices, and by providing smooth functioning programs designed to be easy to participate in and promote continued involvement, the programs provide a great service to maintaining waste management systems and protecting water quality. The City will continue to promote and support these integral programs by employing the following BMPs:

*Public Input for Program Development:* The City's SWQ Program requires participation and support from a wide range of stakeholders in the development and implementation of its SWMP. These stakeholders are encouraged to provide feedback regarding the SWQ program through a departmental email address ([stormwaterquality@slcgov.com](mailto:stormwaterquality@slcgov.com)) and hotline (801-483-6700), or by direct contact to the SWQ program manager (information provided on the SWQ website: <https://www.slc.gov/utilities/stormwater-and-flood-control/>). Additional opportunities are available through various stakeholder groups/meetings. Such feedback is taken into consideration as the program evolves and program elements are updated. As there is a permit requirement to conduct an annual assessment of the SWMP and associated BMPs, feedback from the public is considered. An additional opportunity for public involvement exists through a group of citizens appointed by the City mayor, called the Public Utilities Advisory Committee (PUAC), in which monthly meetings are held to review major policy decisions of the SLCDPU, of which storm water quality is a component.

*Environmental Stewardship & Clean-Up Programs:* The City Department of Sustainability's *SLC Green Program* creates multiple avenues and opportunities for residents to participate in stewardship and clean-up programs along area waterways, in neighborhoods, at storm inlets and gutters (as required by ordinance and in addition to an Adopt-A-Storm-Drain Program being developed in 2021) and public lands and open spaces. The City will continue to provide these opportunities and include pertinent data about them in the MS4 Annual Report.

## **4.2. STAFFING AND RESOURCE ALLOCATIONS**

*Public Involvement and Participation* is conducted by the SWQ Program, SLCDPU's Public Engagement Manager, and other City Departments in accordance with the SLC Green Program (a city-wide initiative comprised of environmental programs that continue to help the City conserve resources and reduce pollution) and with the assistance of the Salt Lake County Health Department (SLCoHD). The SLC Green Program is spearheaded by the City's Department of Sustainability, whose staff facilitates the implementation of the waste management and environmental stewardship programs. HHW collection is administered by the Salt Lake County Health Department (SLCoHD); the Storm Water Utility funds a portion of these public participation/involvement programs. Public input regarding program development is handled by the SWQ Program Manager.

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### 4.3. IMPLEMENTATION STATUS

Measurable goals for this program to be implemented and assessed during the permit term are presented in **Table 4.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

**Table 4.1 Implementation Status for Public Involvement/Participation Program**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 03:</b> Support “Tan Can” yard waste pickup for City residents.	Minimize fall leaves from getting in the gutters and storm drain system.	Tons of leaves composted and used to measure the effectiveness of this BMP	SLC Department of Sustainability
x	x	x	x	X	<b>BMP 04:</b> Support the “Call-2-Haul” bulky waste cleanup program for Salt Lake City residents.	To keep household refuse and debris from entering the MS4.	The amount of residential debris removed each year is the measurement used for this BMP	SLC Department of Sustainability
x	x	x	x	x	<b>BMP 05:</b> Remove leaves from gutters and inlets during the fall leaf season.	To clean leaves out of the gutters and drainage intakes before they get into the storm drain system. This minimizes organic material that may otherwise convey into the Waters of the State.	The tons of leaves that are removed and taken to various locations for composting will be used for measuring the success of this BMP.	SLCDPU Storm Sewer Maintenance Program, and Salt Lake Public Services
x	x	x	x	x	<b>BMP 06:</b> Support City Curbside Recycling effort for City residents	To reduce or eliminate material that can be recycled from getting into curbs, storm drainage conveyances, and Waters of the State.	The amount of material recycled and kept out of the storm drain system and the landfill.	SLC Department of Sustainability
x	x	x	x	x	<b>BMP 07:</b> Support resident clean-up days of selected waterways and natural areas.	To improve the aesthetics of selected waterways by removing debris and to promote citizen awareness and responsibility regarding the waterway.	The change in the amount of debris removed from the waterway and hauled to the landfill is one measurement of the success of this BMP.	SLC Department of Public Lands
x	x	x	x	x	<b>BMP 26:</b> Promote SLCoHD Household Hazardous Waste Facility and Collection Services.	To provide the residents of Salt Lake City with a location where they can properly dispose of household hazardous waste.	The measurement for this BMP is the fliers, inserts, and additional information provided by Salt Lake City to promote the Electronic and Household Hazardous Waste Collection at Salt Lake City-County Health Departments permanent facility.	SLCDPU, SLCDPU SWQ; SLCoHD
x	x	x	x	x	<b>BMP 35:</b> Continue program to promote public reporting of illicit discharges.	To have a program that promotes the interest of pollution prevention to the public, and provides information regarding illicit flows and reporting procedures.	The measurement for this BMP is the number of illicit flows reported and resolved.	SLCDPU, SLCDPU Water Quality (and SWQ)
x	x	x	x	x	<b>BMP 37:</b> Continue education for residential users on water quality issues, impacts, and solutions.	To have an education program aimed at residential audiences to promote the proper disposal of oil and household toxic materials.	The measurement for this BMP is the number of residents that are educated and properly disposing of material at the Household Hazardous Waste Facility.	SLCDPU SWQ Program; SLCo Stormwater Coalition

(x) Indicates year to be implemented or describes an on-going BMP



## 5.0. ILLICIT DISCHARGE DETECTION AND ELIMINATION (Permit §4.2.3.)

The *Illicit Discharge Detection and Elimination (IDDE) Program* is designed to address prohibited non-storm water discharges to the MS4. Through combined efforts to detect and eliminate illicit discharges, the City can minimize the impacts such discharges have on receiving waters.

### 5.1. DESCRIPTIONS & BMPs

The IDDE program will continue to protect water quality by systematically prohibiting, identifying, and eliminating sources of illicit non-storm water discharges to the MS4. Major components of this program include:

- MS4 Mapping (4.2.3.1.)
- IDDE Ordinances and Enforcement (4.2.3.2.)
- Written IDDE Plan (including Permit required SOPs and Screening) (4.2.3.3., 4.2.3.4., 4.2.3.5., & 4.2.3.6)
- IDDE Public Outreach, Education, Involvement and Participation (4.2.3.7., 4.2.3.8., & 4.2.3.9.)
- IDDE Program Evaluation and Assessment (4.2.3.10.)
- IDDE Training (4.2.3.11.)

This program integrates other SWMP programs such as *Public Education and Outreach* and *Public Involvement/Participation*. The City has an MOU with the SLCoHD (see **Appendix A**) and regularly coordinates efforts in response, identification, elimination, and enforcement of illicit discharges. Salt Lake City will continue to implement the BMPs outlined in this section aimed at reducing the impact of illicit discharges by addressing the following parameters: education and outreach, prevention, identification and prioritization, spill containment and response, employee training, documentation, legal authority, and enforcement. SOPs are included in **Appendix D** and progress towards the measurable goals will be documented in the Annual Report.

#### 5.1.1. MS4 MAPPING

**Objective:** To monitor and protect water quality by continuing to maintain a current storm sewer system map with locations of storm water infrastructure within the MS4.

**Permit Requirement:** Part 4.2.3.1. – Illicit Discharge Detection and Elimination

**Description:** In support of the *IDDE Program*, Maintain and update maps to assist in emergency response and the IDDE and monitoring programs. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 32:** Investigate dry weather flows.

*Storm Drain System Map:* The SLCDPU GIS division keeps an up-to-date map of the City's storm sewer system that identifies MS4 pipes, inlets, manholes, outfalls, ditches, canals, and other conveyance structures with information relevant to the storm sewer system. This map also shows the WOTS that receive discharges from the MS4. SWQ personnel has access to maps digitally on mobile devices to allow quick identification of the storm water system and layout while in the field. A paper map book is also in each SWQ vehicle for times when an internet connection is not possible. Accuracy of these maps and the ability to quickly access them play an integral part in identifying and mitigating IDDEs.

*Storm Water Quality GIS Map:* The SWQ Program has created a GIS overlay that is maintained and updated to show pertinent information regarding the program. This map shows where industrial and

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construction permit holders are located, including documentation of any inspections or permitting information at each site, provides locations and documentation of illicit discharge investigations, and provides other information like groundwater springs, sump discharges, and overlays of water distribution and waste water collections systems, etc.

*Fire Department Storm Water Emergency Response Maps:* The SLCDPU and City Fire Department HAZMAT have created emergency response maps depicting specific sections of the City showing detail of the storm water system including flow indicators. The maps have been compiled into booklets of maps to assist the City Fire Department HAZMAT crews in efficiently and effectively responding to and mitigating accidental discharges to the MS4 in emergency situations. Each book details an area of the City that relates to each fire station responsible for said area.

*Outfall Mapping and Screening:* The City will review, field-confirm, and screen a list of outfalls that were produced as part of a 2019 GIS analysis of the MS4. Additional outfalls not identified in the initial analysis (primarily due to the outfalls being the ends of ditches, as opposed to traditional outfalls at the ends of pipes) will be added as they are field-confirmed, and screened. This mapping will include confirmation of all outfall coordinates (by GPS), characteristics, and discharge quality within the permit cycle, with a goal of 20% of outfalls per year. The mapping of outfalls will be done in coordination with the dry weather screening program wherein the outfalls will be inspected and documented during dry weather periods to help identify any illicit connections or discharges.

*Priority Areas:* SLCDPU will continue to identify and monitor Priority Areas that are more likely to have illicit discharges. The basis for the selection of Priority Areas involves a scoring matrix based on 2021 Permit requirements and the identification of IDDE monitoring locations (manholes/outfalls) within each prioritized basin; the procedure for prioritization is provided in the “Water Quality – Priority Areas (IDDE) Assessment and Screening Program” SOP (**Appendix D**). The mapped areas (Drainage Basins) and scoring matrix are provided in **Appendix G**. The outfalls and other monitoring locations within each basin will then be targeted for additional Dry Weather Screening, with an annual assessment of whether to change monitoring locations or prioritize other basins.

### **5.1.2. IDDE ORDINANCE AND ENFORCEMENT**

**Objective:** To protect water quality by having legal authority to prohibit illicit discharges, including spills, illicit connections, illegal dumping, and sanitary sewer overflows into the MS4; as well as to enforce penalties and remediation (as necessary through ordinance) to eliminate such discharges.

**Permit Requirement:** 4.2.3.2. & 4.2.3.2.1 – Illicit Discharge Detection and Elimination

**Description:** Ordinance No. 29 of 2020 (**Appendix B**) of the Salt Lake City Code, relating to non-storm water discharges to the storm water sewer system and watercourses, effectively prohibits illicit discharges and authorizes escalating enforcement procedures, fines, and penalties for prohibited discharges and other prohibited conduct. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

*Ordinance:* Title 17, Chapter 17.84 of the ordinance addresses discharges into City storm water sewer system. Allowable discharges are enumerated in the ordinance, and prohibited discharges are made unlawful without a discharge permit, and only if the conditions of that permit are met and water quality is protected. Additionally, the ordinance makes it unlawful to construct, use, maintain, or allow an illicit connection to remain in place, and allows for the right of entry for inspections and investigations (including installation of monitoring and sampling equipment), requires the use of BMPs to address and remove discharges, protects watercourses from debris and contamination, and defines the legal authority for the City’s IDDE program.



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*Enforcement:* Title 17, Chapter 17.87 of the ordinance provides a variety of enforcement actions available for addressing prohibited discharges, which allows the SWQ program to effectively remove and prevent the recurrence of illicit discharges while considering the severity of the violation and the willingness to address the violation. The enforcement capabilities include: Notices of Violation, Consent Orders, Show Cause Hearings, Compliance Orders, Cease and Desist Orders, Administrative Fines (including an escalating fine schedule), and Emergency Suspensions of services, among others. An SOP for escalating enforcement actions has been developed to guide these enforcement efforts.

### 5.1.3. IDDE PLAN

**Objective:** To protect the integrity of the MS4 and quality of receiving waters by reducing pollutants in storm water runoff to the MEP through the development and implementation of a plan to detect and address non-storm water discharges to the MS4.

**Permit Requirement:** Part 4.2.3.3., 4.2.3.3.1, 4.2.3.3.2, 4.2.3.3.3., 4.2.3.3.4., 4.2.3.4, 4.2.3.5., 4.2.3.5.1, 4.2.3.6, 4.2.3.6.1, 4.2.3.6.3., 4.2.3.7., 4.2.3.9., 4.2.3.9.1 & 4.2.3.10. – Illicit Discharge Detection and Elimination

**Description:** The City will implement an *IDDE Plan* that includes SOPs or similar documents for:

- locating and listing priority areas where illicit discharges are more likely to occur (4.2.3.3.1.)
- field assessments of all MS4 outfalls and priority areas (4.2.3.3.2. & 4.2.3.3.3.)
- tracing the source of any illicit discharges (4.2.3.4.)
- characterization of the nature and potential impacts of illicit discharges, report documentation requirements, and steps for spill response, containment, and removal (4.2.3.5.)
- ceasing the discharges, including notification of appropriate authorities and responsible parties, and follow-up inspections to determine the outcome (4.2.3.6.)
- enforcement procedures (4.2.3.6.)
- interagency coordination for remediation and enforcement.

The following BMPs and procedures, which have been designed to meet 2021 Permit requirements for this program component, detail the *IDDE Plan* and will continue to be implemented:

- BMP 02:** Inspect the storm sewer system and detention basins within the permit cycle.
- BMP 10:** Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.
- BMP 26:** Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
- BMP 27:** Continue the program for investigating illicit flows and connections.
- BMP 28:** Implement Memorandum of Understanding (MOU) with SLCoHD.
- BMP 29:** Maintain staff to respond to reports of illicit discharges.
- BMP 30:** Continue interagency cooperation concerning illicit flows investigation.
- BMP 31:** Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.
- BMP 32:** Investigate dry weather flows.

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**BMP 34:** Maintain a list of certified suppliers and contractors to respond to containment and cleanup of spilled material.

**BMP 38:** Continue the procedure for reporting and investigating possible SSOs into the storm sewer system.

*Priority Areas:* SLCDPU assessed priority areas in previous iterations of the SWMP and determined that the highest concentration of potential illicit connections and discharges is along the Interstate 15 (I-15) corridor, in a basin known as the Northwest Drain (see **Appendix G**), which contains a mix of older industrial and commercial land uses, including rail yards, refineries, and quarries. The City foresees this area remaining a *priority area* into the future but will continue to annually assess the priority status of this area and determine whether to include additional areas. For the 2021 Permit cycle, the City utilized a GIS analysis of 29 major drainage basins within its jurisdiction which included a scoring matrix that was based on required priority consideration factors (see the “Water Quality – Priority Areas Assessment & Inspection” SOP in **Appendix D**). From that assessment, 8 major basins were selected as *Priority* for additional IDDE monitoring. (See **Appendix G** for the priority areas list and map.) Due to the large size of the basins, and the constantly flowing nature of many of the associated outfalls, there is a need for finer detail and more targeted inspection locations. The selected monitoring locations for each basin are provided in **Appendix G**; however it is anticipated that these locations may change as part of an annual assessment of priority areas and monitoring locations.

*Field Assessment Activities - Dry Weather Screening & Priority Inspections:* In accordance with the mapping section of the IDDE program outlined in section 5.1.1. of this SWMP, and in following 2021 Permit requirements for *Priority Area* inspections, the City will screen for illicit discharges/connection at all known MS4 outfalls within the permit cycle (with a goal of 20% of outfalls screened per year), with additional inspections of *Priority Areas* completed annually. All investigations will utilize an inspection form. All potential illicit discharges found during these screening activities will continue to be investigated to achieve full completion of the discharge cessation and removal process, utilizing any applicable education and enforcement capabilities to prevent recurrence of the discharge. Details of any field assessment activities will be documented using an inspection form, tracked internally in an IDDE tracking database, and reported annually. If it is discovered that a discharger may need a separate UPDES permit (such as Industrial, Construction, Dewatering, or Treated Groundwater general permits), the City will notify the director of DWQ. Additionally, in accordance with the City’s storm water ordinance, the SWQ team will initiate (and follow through on) the process of getting a City Discharge Permit, as required by state permit requirements.

*Investigating and Tracing Illicit Discharge Sources:* Salt Lake City will continue to investigate and trace illicit discharges immediately upon being alerted of a potential illicit discharge, either by public reports or screening observations. An SOP for this process will continue to be implemented (as shown in **Appendix D**), which includes procedures for responding to public referrals of illicit discharges, coordinating the response with appropriate workgroups/agencies, and any inspections, observations, water testing and analysis used to isolate and identify the source of a discharge. Detailed documentation of these efforts will be included in a report and maintained in the “IDDE Incidents” file of the City’s server.

*Characterizing and Addressing Illicit Discharges:* The City will implement a current SOP for characterizing the nature of (and the potential public or environmental threat posed by) observed illicit discharges. When the source of an illicit discharge is confirmed, the standard procedures further describe steps for determining what is needed for containment of the discharge, and the Permit-

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required information that must be recorded in an inspection report, including the decision process for utilizing analytical monitoring. Details and documentation requirements are outlined in that SOP in **Appendix D**.

*Eliminating Illicit Discharge and Notification:* Salt Lake City will implement a current SOP detailing the process used for ceasing that discharge and any contributing factors whereby effectively eliminating the discharge, notifying the appropriate parties, providing technical assistance for remediation and mitigation, follow-up inspections and timelines, and any applicable enforcement actions to minimize/eliminate the potential for recurrence of the discharge (**Appendix D**).

*Spill/Illicit Discharge Response Procedure:* As a component of the *IDDE Plan*, and to facilitate proper and timely communication among IDDE response staff, the SWQ Program will continue to update and provide the *Spill Incident Response Contact List* for internal use in the Department. This ensures that an appropriate staff member will initiate the response procedures and mobilize other parties to assist in the cessation and removal of illicit discharges and their contributing factors. In addition to the internal contacts list, the City maintains a list of certified contractors/suppliers that are able to respond to illicit discharge events for purposes of containment and cleanup.

*Interagency Coordination:* The SWQ Program coordinates with multiple agencies on a regular basis regarding the IDDE program including Fire, Hazmat, DWQ, stakeholders, and most commonly the SLCoHD. The relationship agreement between Salt Lake City and SLCoHD initially was explained in a letter of understanding created in 1993 and has now been further detailed in a MOU finalized in July of 2015.

#### **5.1.4. IDDE PUBLIC OUTREACH, EDUCATION, PARTICIPATION & INVOLVEMENT**

**Objective:** Reduce pollutants in storm water runoff to the MEP by developing and implementing a plan to educate the public about the prohibitions against (and potential impacts of) non-storm water discharges to the MS4, and to provide opportunities for the public to participate in the program by reporting suspected illicit discharges and other environmental concerns.

**Permit Requirement:** 4.2.3.7., 4.2.3.8, 4.2.3.9., 4.2.3.9.1 & 4.2.3.10 – Illicit Discharge Detection and Elimination

Part 4.2.1 – Public Education and Outreach

Part 4.2.2 – Public Involvement/Participation

**Description:** This program works in tandem with the *Public Outreach & Education*, *Public Involvement/Participation*, and *Industrial & High-Risk Runoff* Programs, and is designed to provide opportunities to educate and engage the public (and regulated communities) in the prevention and reporting of illicit discharges. Receiving reports from the public is integral to rapid identification, elimination, and impact reduction of illicit discharges. Furthermore, the cooperation of the regulated community and general public in preventing illicit discharges provides substantial water quality protections. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 21:** Continue education program on the proper use of pesticides and fertilizers.

**BMP 23:** Coordinate with POTW pretreatment program.

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- BMP 24:** Maintain records of all illicit connection investigations and enforcement.
- BMP 25:** Review all new development and re-developments plans for compliance and illicit connections.
- BMP 26:** Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
- BMP 33:** Continue to implement a storm sewer spill response plan.
- BMP 35:** Continue program to promote public reporting of illicit discharges.
- BMP 36:** Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.
- BMP 37:** Continue education for residential users on water quality issues, impacts, and solutions.
- BMP 39:** Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.
- BMP 42:** Distribute water quality education materials to Industrial and priority commercial facilities.

*IDDE Education:* Salt Lake City will include information regarding the hazards associated with illicit discharges and improper disposal of waste in the education program to residents, businesses, and institutions, as identified in the Public Education and Outreach section (3.0) of this SWMP. This includes content on proper management of waste oil, toxic materials, and other household hazardous wastes. The following BMPs will continue to be implemented as part of both programs.

*IDDE Prevention and Public Involvement (Waste Collection):* Salt Lake City integrates its *IDDE Program* with multiple other programs, including the *Industrial & High-Risk Runoff Program* to develop and maintain relationships with the industrial and business communities, whereby those communities are educated and empowered to manage facilities and operations in a manner that prevents illicit discharges from occurring. The intent of this prevention program is to provide consistent guidance and direction to the regulated community and residents of Salt Lake City. Pollution prevention at the source is a key element of the program; this includes providing guidance and options/services for proper waste disposal. The following BMPs and procedures shall continue to be implemented to help achieve the goals of the program:

*IDDE Prevention and Public Involvement (Reporting):* Salt Lake City will continue to provide the public with a hotline for reporting spills and illicit discharges. Reports may be called into SLCDPU 24-hour dispatch, 801-483-6700. Calls can also be made to the State Department of Environmental Quality (UDEQ), 801-536-4100; Salt Lake County, 801-313-6600; to the National Response Center (Major Chemical Release, 1-800-536-4123); or to 911. In addition, the City has an app for mobile phones available at ([www.slcgov.com/slcmobile](http://www.slcgov.com/slcmobile)) that can be used to identify and report incidents. SWQ will retain a written record of calls received, follow-up actions taken, and public feedback.

### 5.1.5. PROGRAM EVALUATION AND ASSESSMENT

**Objective:** Evaluate and assess the IDDE program for effectiveness and determine any necessary modifications.

**Permit Requirement:** 4.2.3.5.1, 4.2.3.6.1, & 4.2.3.10. – Illicit Discharge Detection and Elimination

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**Description:** Salt Lake City currently maintains documents on the City’s intranet and the City’s server. Regardless of the software the City elects to use, it will continue to maintain a database for mapping and tracking the number and type of spills or illicit discharges identified and all inspections conducted. Program details will be documented in the Annual Report and an annual evaluation of the system will be conducted whereby the program can be regularly enhanced, as needed, to meet the needs of the City and its permit obligations. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 24:** Maintain records of all illicit connection/discharge investigations and enforcement.

*IDDE Documentation:* The City will continue to generate IDDE reports using the “ComplianceGO” software application. These reports will be filed on the city’s server, and all IDDE incidents are to be plotted on the SWQ GIS map. In addition to the reports and mapping, all IDDEs will continue to be tracked in the IDDE tracking spreadsheet and documented in the Annual Report.

### 5.1.6. IDDE TRAINING

**Objective:** Provide IDDE training for appropriate personnel to facilitate adherence to established procedures for timely and effective detection and elimination of illicit discharges.

**Permit Requirement:** Part 4.2.3.11 – Illicit Discharge Detection and Elimination

**Description:** The City will provide annual training to applicable employees on the IDDE program, including field personnel who may encounter an illicit discharge or connection, and office personnel who may receive reports or questions about illicit discharges. The training will include identification, investigation, termination, clean up, and reporting of illicit discharges, and will be tracked by SWQ staff. New hire training for office (and certain field) staff will be the responsibility of the hiring manager, with the support of the SWQ program. The following BMPs have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 09:** Conduct annual training for drainage system maintenance personnel.

**BMP 38:** Continue the procedure for reporting and investigating possible SSOs into the storm sewer system.

## 5.2. STAFFING AND RESOURCE ALLOCATIONS

The *Illicit Discharge Detection and Elimination* program is implemented by the SLCDPU SWQ team, along with the SLCoHD. SWQ personnel are trained to respond and assist with spills and illegal discharges. In some instances, SWQ personnel work with Salt Lake City Fire and Hazmat crews when responding to IDDEs. In addition, the Salt Lake County Health Department also responds to reported illicit discharges and works with SWQ personnel on a case by case basis concerning types of enforcement actions to be taken against violators (e.g., Warning Letter, Notices of Violation, and Cease and Desist Orders); other decisions include who will take the lead and perform follow up if necessary for cases that involve remediation.

The SLCoHD and the City finalized a Memorandum of Understanding (MOU, exhibited as **Appendix A**) in 2015 formally defining the working relationship and cooperative efforts regarding illicit discharges within the City’s boundary.

**BMP 41:** Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.

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### 5.3. IMPLEMENTATION STATUS

Measurable goals for BMPs to be implemented during the permit term are presented in **Table 5.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule.

**Table 5.1 Implementation Status for Illicit Discharge Detection and Elimination Program**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 02:</b> Inspect the storm sewer system and detention basins within the permit cycle.	To keep all of the major storm drains and detention basins in repair and clean of any debris or sediment that may keep them from efficient operation.	The Cityworks® Work Order System will be used for keeping track of all of the major storm drains and detention basins inspected and document any repairs or cleanup.	SLCDPU Storm Sewer Maintenance Program
x	x	x	x	x	<b>BMP 09:</b> Conduct annual training for drainage system maintenance personnel.	To ensure that storm drainage maintenance personnel are aware of their responsibility in maintaining SWQ as work is performed.	The measurement for this BMP is the training provided for maintenance personnel. The quality of the training and topics discussed should focus on BMPs that can be implemented to maintain SWQ while performing maintenance activities. Another aspect of the training will focus on illicit discharge identification.	SLCDPU Storm Sewer Maintenance Program, and SWQ Program
x	x	x	x	x	<b>BMP 10:</b> Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.	To ensure proper disposal of sediments from storm drain cleaning in an efficient and environmentally sound manner.	The measurement for this BMP is the number of loads and volume that are properly de-watered and hauled to the landfill for disposal. This disposal method is used to dispose of the sediment in an environmentally sound manner.	SLCDPU Storm Sewer Maintenance Program
x	x	x	x	x	<b>BMP 21:</b> Continue education program on the proper use of pesticides and fertilizers.	To have an education program available to educate residents, commercial applicators, and municipal agencies regarding the proper use of pesticides, fertilizers, and herbicides.	The measurement for this BMP is the education provided to the various groups applying pesticides, fertilizers, and herbicides. As these groups become educated, products are properly used and the pollutants from over application are mitigated.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 23:</b> Coordinate with POTW pretreatment program.	To work in conjunction with the POTW’s pretreatment program working in partnership with the industrial and business community to provide consistent guidance and direction.	The measurement for this BMP is the dissemination of information and consistent guidance given to the regulated business community. The number of illicit connections or illegal discharges found and resolved is another important measurement.	SLCDPU Pretreatment Program, and SWQ Program
x	x	x	x	x	<b>BMP 24:</b> Maintain records of all illicit connection investigations and enforcement.	The goal of this BMP is to have records and a database of all illicit connections, their enforcement, and resolution for future reference.	The measurement of this BMP is the number of illicit connection investigations and their resolutions.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 25:</b> Review all new development and re-developments plans for compliance and illicit connections.	The goal of this BMP is to ensure that all new commercial and industrial development plans comply and that illicit connections to the storm drain are not constructed.	The measurement for this BMP is the number of plans reviewed.	SLCDPU Engineering Division, and Development Review Services

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x	x	x	x	x	<b>BMP 26:</b> Promote SLCoHD Household Hazardous Waste Facility and Collection Services.	To provide the residents of Salt Lake City with a location where they can properly dispose of household hazardous waste.	The measurement for this BMP is the fliers, inserts, and additional information provided by Salt Lake City to promote the Electronic and Household Hazardous Waste Collection at Salt Lake City-County Health Departments permanent facility.	SLCDPU, SLCDPU SWQ; SLCoHD
x	x	x	x	x	<b>BMP 27:</b> Continue program for investigating illicit flows and connections.	To conduct on-going field screening in the MS4 to resolve any illicit connections or flows.	The measurement for this BMP is the data collected from the area screened during the life of the permit and the illicit flows removed from the MS4.	SLCDPU SWQ Program, and Storm Sewer Maintenance
x	x	x	x	x	<b>BMP 28:</b> Implement Memorandum of Understanding (MOU) with SLCoHD.	To have a MOU between Salt Lake City Public Utilities and the Salt Lake County Health Department regarding enforcement of state health laws, rules, regulations, and standards applying to the municipal separate storm sewer system.	The measurement for this BMP is the number of illicit discharges and illegal connections that are resolved as a result of this MOU between the two agencies.	SLCDPU SWQ Program; SLCoHD
x	x	x	x	x	<b>BMP 29:</b> Maintain staff to respond to reports of illicit discharges.	To have staff available to respond to any illicit discharges and resolve the problem with clean up, and/or Cease and Desist order and or Notice of Violations issued by SLC and or SLCHD.	The measurement for this BMP is the number of illicit discharges that have required response and correction. An additional measurement is the number of trained personnel within the City.	SLCDPU; SLC Fire & HAZMAT
x	x	x	x	x	<b>BMP 30:</b> Continue interagency cooperation concerning illicit flows investigation.	To work together in a cooperative effort with other Regulatory agencies to resolve illicit and or illegal discharges.	The measurement for this BMP is the number of illicit flows investigated and corrected and cooperation between agencies and stakeholders.	SLCDPU SWQ Division
x	x	X	x	x	<b>BMP 31:</b> Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.	To resolve significant contamination problems that may require court orders and prosecutions.	The measurement used for this BMP is the number of prosecutions and court ordered solutions that resolve significant contamination problems.	SLCDPU, SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 32:</b> Investigate dry weather flows.	To Dry Weather Screen the MS4 flows to systematically investigate and remove illicit flows.	The measurement used for this BMP is the portion of the MS4 monitored, and the illicit discharges removed.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 34:</b> Maintain a list of certified suppliers and contractors to respond to containment and cleanup of spilled material.	To have a list of contractors for remediation and mitigation when a spill or illicit discharge occurs.	The measure for this BMP is the maintained list and the number of times it is utilized/shared for intended purposes.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 35:</b> Continue program to promote public reporting of illicit discharges.	To have a program that promotes the interest of pollution prevention to the public, and provides information regarding illicit flows and reporting procedures.	The measurement for this BMP is the number of illicit flows reported and resolved.	SLCDPU, SLCDPU Water Quality (and SWQ)



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x	x	x	x	x	<b>BMP 36:</b> Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.	To have a program that educates the public on the impacts, sources, and solutions of Nitrogen and Phosphorus pollution; and to alter behaviors that have the potential to negatively impact water quality.	The measurement for this BMP is the number of water quality outreach efforts (events, mailers, ads, social media posts, etc.) that target Nitrogen and Phosphorus pollution.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 37:</b> Continue education for residential users on water quality issues, impacts, and solutions.	To have an education program aimed at residential audiences to promote the proper disposal of oil and household toxic materials.	The measurement for this BMP is the number of residents that are educated and properly disposing of material at the Household Hazardous Waste Facility.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 38:</b> Continue procedure for reporting and investigating possible SSOs into the storm sewer system.	To eliminate infiltration from the sanitary sewer into the storm drain system.	The measurement for this BMP is the number or problems resolved regarding infiltration of sanitary sewage to the storm drain system. The aggregate portion of the collection system investigated is another measurement.	SLCDPU Water Quality and Sanitary Sewer Collections & Maintenance Crews
x	x	x	x	x	<b>BMP 39:</b> Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.	To have an industrial users database available with Section 313 of Title III of the 1986 (SARA) chemicals or heavy polluters for tracking purposes.	The measurement for this database is an updated database record that is available when a pollutant is detected and traced back to the source as a result of the database	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 41:</b> Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.	To have a full-time position available to work with the public and industries to minimize the pollutants released to the Salt Lake City storm sewer system.	The measurement for this BMP is staffing the positions	SLCDPU
x	x	x	x	x	<b>BMP 42:</b> Distribute water quality education materials to Industrial and priority commercial facilities.	To provide information to target industrial groups with BMPs regarding water quality, including notifying the industrial facilities of the compliance requirements of the State General Industrial Storm Water Permit.	The measurement of this BMP is the number of target industrial groups that are provided with water quality materials and State/City Industrial Storm Water Permit.	SLCDPU SWQ Program

(x) Indicates year to be implemented or describes an on-going BMP

## 6.0. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL (Permit §4.2.4.)

Salt Lake City will continue to implement a *Construction Site Storm Water Runoff Program* to reduce pollutants to the MEP in any storm water runoff to the MS4 from construction sites with a land disturbance of greater than or equal to 1-acre, including projects less than 1-acre that are part of a larger common plan of development or sale.

### 6.1. DESCRIPTIONS & BMPs

This construction regulatory program includes the following major components:

- Ordinances for requiring permits, BMPs, watercourse and public right-of-way (ROW) protections, and compulsory compliance (4.2.4.1. & 4.2.4.2.)
- Permitting system requiring pre-construction plan and SWPPP reviews by qualified staff (4.2.4.3.)
- Inspections, and enforcement procedures (4.2.4.4.)
- Training program for inspections and plans review staff (4.2.4.5.)
- System for records retention (4.2.4.6.)

It will also continue to be integrated with the *Public Education and Outreach* and *Long-term Storm Water Management Programs* to provide storm water information and permit compliance information to the public, contractors and developers. The following BMPs describe tasks to be completed by Salt Lake City for the *Construction Site Storm Water Runoff Control Program*. Progress towards the measurable goals will be documented in the Annual Report.

#### 6.1.1. CONSTRUCTION SITE STORM WATER RUNOFF & POLLUTION CONTROL ORDINANCES

**Objective:** To have the legal authority to regulate and enforce construction activities with the intent to reduce pollutants from storm water runoff.

**Permit Requirement:** Part 4.2.4.1., 4.2.4.1.1., 4.2.4.1.2., and 4.2.4.1.3.

**Description:** Salt Lake City Storm Water Ordinance (29-20, Title 17, Chapters 84 and 87) defines primary regulations for construction site storm water runoff controls including requirements for erosion, sediment, and pollution control BMPs; the development and implementation of a SWPPP; right of entry for inspections (by qualified personnel); escalating enforcement capabilities, to ensure compliance; and state and local storm water permitting requirements at construction sites disturbing at least 1-acre of land, including projects disturbing less than 1-acre that are part of a common plan of development or sale which collective disturbs at least 1-acre of land. The Ordinance further requires that construction sites with a City Discharge Permit must meet the requirements of the most current version of the UPDES Construction General Permit (U-CGP) for storm water discharges from construction activities, which provides the structure for storm water management and compliance which is no less stringent than the UPDES program.

An essential ordinance that supports the further protection of the MS4 and receiving waters from construction-related pollution is Salt Lake City Code Chapter 18.20.210 (Cleanup and Protection of Public Rights of Way). The ordinance includes requirements for: clean-wheel practices to prevent off-site tracking of sediment and debris, prohibition of practices that would block the flow of storm water runoff in the ROW (with requirements for access ramps to be constructed of non-erodible materials), implementation and maintenance of erosion and sediment controls to prevent discharge onto the ROW, prohibition against stockpiling of dirt/debris on sidewalks or on the curb/gutter, and immediate cleanup of sediment/debris that has been deposited in the ROW (with a clause for cost recovery by the City from

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permit-holders if the City's street crews have to clean up the ROW). The following BMPs have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 12:** Enforce the requirements of Salt Lake City Ordinances.

**BMP 30:** Continue interagency cooperation concerning illicit flows investigation.

**BMP 31:** Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.

**BMP 35:** Continue program to promote public reporting of illicit discharges.

### **6.1.2. PRE-CONSTRUCTION SWPPP AND PLAN REVIEW**

**Objective:** Conduct pre-construction reviews of SWPPP and plans to ensure BMPs are included which minimize impacts to the MS4 and receiving water quality.

**Permit Requirement:** 4.2.4.3., 4.2.4.3.2., 4.2.4.3.3., & 4.2.4.3.4. – Construction Site Storm Water Runoff Control

**Description:** The City will continue to implement a SWPPP and plans review process that is consistent with the requirements of the current UPDES Construction General Permit (CGP) and state water quality standards. This process includes requirements for evaluation and inclusion of opportunities for the use of LID and GI (where feasible) and consideration of potential water quality impacts from proposed projects with a land disturbance of greater than or equal to 1-acre, including projects less than 1-acre that are part of a larger common plan of development or sale. In addition, small (less than 1-acre) projects that are located in sensitive areas (such as along waterways), projects that are owned by the City, and projects whose operator has a history of non-compliance with storm water regulations, are required to obtain City Discharge Permit coverage, which requires a SWPPP. These will also be reviewed by plans review staff. The following BMPs have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 13:** Provide Standard BMPs for site development (active and post-construction) to developers and engineers.

**BMP 44:** Continue to obtain and review SWPPPs for construction projects and industrial facilities.

*Pre-construction Plans & SWPPP Reviews:* City Engineers and Planners will continue to review construction plans for proposed projects. This review entails consideration of potential water quality impacts from the project, evaluation of whether those impacts are sufficiently mitigated, and confirmation that the project meets City design standards (which are being revised in 2021 to meet 2021 MS4 Permit requirements for long-term storm water management). If a project is greater than or equal to 1-acre of land disturbance, or part of a common plan of development or sale which collectively disturbs at least 1-acre of land, then the project will be required to meet storm water retention and treatment standards as set forth in the Salt Lake City *Building Process & Design Manual*; such projects will also be required to develop and submit a SWPPP for review, prior to construction. This process of SWPPP reviews by City Engineers and qualified SWQ staff is consistent with the requirements of the current UPDES CGP.

In addition to projects that meet the disturbance threshold for U-CGP coverage, a City Discharge Permit is required if projects are located in a sensitive area (such as along waterways), if the project is city-owned, or if the operator has a history of non-compliance with storm water regulations. Per

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ordinance, projects applying for a City Discharge Permit are also required to submit a SWPPP which will be reviewed for compliance with the U-CGP and City ordinances.

*SWPPP Review Checklist:* Salt Lake City will continue to maintain a SWPPP review checklist that has been developed to meet the requirements of the most recent U-CGP. The checklist is revised when permit conditions change, or when City priorities evolve but is no less stringent than the standards of applicable UPDES permits. The City will continue to implement the use of this checklist during pre-construction SWPPP reviews to ensure storm water quality issues are addressed and projects remain in compliance (See **Appendix D** for current copy of the checklist).

*Plan Reviews for Inclusion of Low Impact Development & Green Infrastructure:* Salt Lake City will continue to implement a plan review program that is consistent with *Long-Term Storm Water Management Program* requirements of the MS4 Permit for new and redevelopment projects that disturb an acre of land, or more, including those that are part of a common plan of development or sale which will ultimately disturb at least 1-acre of land. This review program is being updated in 2021 to achieve compliance with the 2021 MS4 Permit by requiring evaluation of opportunities to implement LID and GI technologies, where feasible, and to include those technologies in the site design plans. If infeasible, the applicants will be required to demonstrate, in their City-required Technical Drainage Study, that LID and GI have been used to their full extent practicable.

### 6.1.3. CONSTRUCTION SITE INSPECTIONS AND ENFORCEMENT

**Objective:** Minimize the discharge of pollutants in storm water runoff from construction activities through compliance inspections and enforcement actions.

**Permit Requirements:** Part 4.2.4.2., 4.2.4.2.1., 4.2.4.2.2., 4.2.4.3.1., 4.2.4.3.5., 4.2.4.4., 4.2.4.4.1., 4.2.4.4.2., 4.2.4.4.3., 4.2.4.4.5., and 4.2.4.6. – Construction Site Storm Water Runoff Control

**Description:** The *Construction Storm Water Runoff Control Program* involves site inspections for SWPPP compliance, prioritization of certain projects for increased inspections, enforcement procedures to ensure compliance, and tracking of all program actions and documentation. The following BMPs have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 17:** Continue procedures for monitoring storm water management on Public construction projects.

**BMP 29:** Maintain staff to respond to reports of illicit discharges.

**BMP 41:** Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.

**BMP 45:** Continue to enforce against SWPPP violations.

**BMP 46:** For City projects, identify erosion control measures as a specific bid item.

*Construction Site Inspections:* The City will continue to inspect construction sites at all phases of development, including prior to land disturbance, during active construction, and following active construction. These inspections for permit compliance are conducted on a monthly basis for UPDES permitted and/or City-owned projects, and bi-monthly for *Priority Sites* (per the 2021MS4 Permit, details in next subsection). Inspections include a review of the SWPPP, verification of compliance to permit requirements, and inspection of the implementation of erosion and sediment controls along

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with any other BMPs in place to prevent pollution to the MS4. An SOP has been developed, and will continue to be implemented, which details the construction inspections program (see “Water Quality – Construction Site Oversight” SOP in **Appendix D**). These inspections are conducted using a third-party software application for preparing reports in the field, which includes a checklist and enforcement capabilities, and then added to an internal tracking database that was created to manage documentation and scheduling of all permits, inspections, and enforcement actions. All documentation is added to an online GIS map and saved on the City’s server, as well as being tracked for City employee time and asset use management for each inspection (helpful in determining cost recovery amounts as an enforcement option). All City staff conducting inspections are required to be RSI certified to demonstrate their qualifications for conducting inspections.

*Prioritizing Construction Sites:* The City will continue to prioritize sites for increased (at least bi-weekly) inspections based on the project’s size, slope, and receiving waters. Sites that are greater than 10 acres of disturbance are prioritized until the site meets the criteria for returning to the standard monthly inspections schedule, which is when all groundwork has been completed in terms of paving, curbing, sidewalks, and the building has moved to the vertical phase of construction. Very few areas within the City’s MS4 jurisdiction with active construction are steep sloped, but any projects that are identified as being >10% slope will be prioritized for increased inspections. With regard to receiving waters, sites that discharge directly into or immediately upstream of waters that the State recognizes as impaired are also identified as *Priority Construction Sites* requiring increased inspections through the life of the project. Additionally, projects whose operators have a history of non-compliance are prioritized; this is based on history of SEV fines issued and any administrative enforcement actions (per City Ordinance 17.87) issued in the last 5-years. Inspections of these sites shall be conducted every two weeks using an approved inspection form checklist and fully documented, including any enforcement actions.

*Construction Site Enforcement:* Salt Lake City will continue to enforce construction site non-compliance through ordinance, a Single Event Violations (SEV) Fines Schedule, and escalating enforcement procedures to obtain compliance with State and City permit requirements. The SOP for enforcement will continue to be implemented and meets 2021 Permit requirements for escalating enforcement. (See “Water Quality – Escalating Enforcement (Regulatory)” SOP in **Appendix D**.) An appeals process is provided, by ordinance, for all enforcement actions against violations of the storm water ordinance. Any SEV fines issued are also able to be appealed, as shown on the SEV Fines Schedule, which is provided with the Notice of Intent form for City storm water discharge permit, and again through the pre-construction meeting welcome packet. If an illicit discharge is discovered during a construction inspection, an IDDE investigation is conducted in tandem with the construction inspection. Such discharges are enforced against in accordance with the *IDDE Program* but with appropriate escalations to eliminate the discharge and minimize the recurrence of the violation.

#### **6.1.4. CONSTRUCTION SITE STORM WATER TRAINING**

**Objective:** Provide applicable training to personnel and their roles regarding the Construction Site Storm Water Runoff Control Program.

**Permit Requirements:** 4.2.4.5 – Construction Site Storm Water Runoff Control

**Description:** The City will provide construction-related training for applicable personnel, including program components for permitting, plans review, construction site inspections, and enforcement. Training shall extend to third-party inspectors, contractors, and plan reviewers as well. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

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**BMP 43:** Continue a storm water quality-training program for development and plans review personnel.

**BMP 47:** Participate in education training and seminars conducted by the State of Utah and other agencies.

*Construction Storm Water Training Strategy:* New hires within the SWQ program are trained within 60-days on current SOPs and the dynamics of storm water quality management in all aspects of the construction program for which that position is responsible (or will be assisting with the implementation thereof). Due to the size of the City, relative to the size of the SWQ Program, all other new-hire employees in the City are to be trained within 60-days of hire by their respective supervisors on SOPs that were developed (and continue to be maintained/updated) to minimize pollution during their construction-related work, or through the proper inspections, permitting, and plans review tasks. City Inspectors that conduct regulatory storm water inspections at construction sites are required to obtain and maintain RSI certification, which has requirements for continuing education and professional development. Annual trainings and refreshers will be provided to applicable City staff, as required by Permit, through various training mechanisms including in-person training sessions, field exercises, on-line video and tutorial sessions, and through email communications of changes in program dynamics (if determined a training session is not needed for a particular topic). Contractors conducting work for the city are required, by contract, to adhere to City standards and procedures; online training is available for those contractors, and the project managers and supervisors of those contractors are required to ensure that all parties conducting construction-related work for the City are properly trained and qualified to complete all necessary tasks.

#### 6.1.5. RECORDS KEEPING

**Objective:** To maintain records of all documentation related to construction sites that disturb greater than or equal to 1-acre, including projects less than 1-acre that are part of a common plan of development or sale.

**Permit Requirements:** Part 4.2.4.2.2 & 4.2.4.6 – Construction Site Storm Water Runoff Control

**Description:** Salt Lake City will continue to update and maintain tracking and documentation of all required and relevant construction sites that disturb greater than or equal to 1-acre, including projects less than 1-acre that are part of a common plan of development or sale. Those records are stored on the City's server, the online GIS map for the SWQ Program, and work order system for tracking employee times and asset management. The records include site plan reviews, SWPPPs, inspections, enforcement actions, and training will continue to be maintained. Records will be kept for at least five years after the completion of the project or other program-related task.

#### 6.2. STAFFING AND RESOURCE ALLOCATIONS

The *Construction Site Storm Water Runoff Program* is primarily implemented by SWQ staff, which has 3 FTEs that oversee the program: a designated program Coordinator and two Technicians, all conducting inspections, enforcement, and documentation. In addition, several other SLCDPU employees (including Utility Engineering Inspectors) are Registered Storm Water Inspectors (RSI) certified and assist with program implementation, as needed. SWQ staff oversees all phases of the construction storm water program, with support from six SLCDPU engineers in the plans/SWPPP review process.

#### 6.3. IMPLEMENTATION STATUS

Measurable goals for this BMP to be implemented and assessed during the permit term are presented in **Table 6.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

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**Table 6.1 Implementation Status for Construction Site Storm Water Runoff Control**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 12:</b> Enforce the requirements of Salt Lake City Ordinances.	To provide protection, preservation, proper maintenance, and use of Salt Lake City’s water courses, lakes, ponds, floodplain, and wetland areas to include downstream drainage areas for present and future residents of Salt Lake City.	The measurement for this BMP is the approval of required plans, and enforcement of the ordinance. Soils reports identifying soil stability, drainage control plans, and site grading and excavation plans must be submitted and approved prior to any work being done.	SLCDPU SWQ, GIS, and Engineering Divisions, and SLC Community And Neighborhoods Engineering
x	x	x	x	x	<b>BMP 13:</b> Provide Standard BMPs for site development (active and post-construction) to developers and engineers.	To have a set of standard construction BMPs that are available to developers and engineering consultants that may be used to enhance SWQ.	The measurement of this BMP is the quality of the guidance document and the BMPs that are implemented during site development as a result of this document.	SLCDPU, SLCDPU Capital Improvement Program, and SLCDPU Development Review Services
x	x	x	x	x	<b>BMP 17:</b> Continue procedures for monitoring storm water management on Public construction projects.	The goal of this BMP is to meet Storm Water conditions by identifying and controlling problems with erosion, sedimentation, or other pollutants that may enter the drainage system on CED Projects.	The measurement for this BMP is the UPDES construction permits, SWPPPs, and erosion and sediment controls implemented on Public Service Projects.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 29:</b> Maintain staff to respond to reports of illicit discharges.	To have a staff available to respond to any illicit discharges and resolve the problem with clean up, and/or Cease and Desist order and or Notice of Violations issued by SLC and or SLCHD.	The measurement for this BMP is the number of illicit discharges that have required response and correction. An additional measurement is the number of trained personnel within the City.	SLCDPU; SLC Fire & HAZMAT
x	x	x	x	x	<b>BMP 30:</b> Continue interagency cooperation concerning illicit flows investigation.	To work together in a cooperative effort with other Regulatory agencies to resolve illicit and or illegal discharges.	The measurement for this BMP is the number of illicit flows investigated and corrected and cooperation between agencies and stakeholders.	SLCDPU SWQ Division
x	x	X	x	x	<b>BMP 31:</b> Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.	To resolve significant contamination problems that may require court orders and prosecutions.	The measurement used for this BMP is the number of prosecutions and court ordered solutions that resolve significant contamination problems.	SLCDPU, SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 35:</b> Continue program to promote public reporting of illicit discharges.	To have a program that promotes the interest of pollution prevention to the public, and provides information regarding illicit flows and reporting procedures.	The measurement for this BMP is the number of illicit flows reported and resolved.	SLCDPU, SLCDPU Water Quality (and SWQ)
x	x	x	x	x	<b>BMP 41:</b> Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.	To have a full-time position available to work with the public and industries to minimize the pollutants released to the Salt Lake City storm sewer system.	The measurement for this BMP is staffing the positions	SLCDPU



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x	x	x	x	x	<b>BMP 43:</b> Continue a SWQ-training program for development and plans review personnel.	To expand the knowledge of site development review personnel regarding storm water pollution prevention techniques and practices.	The measurement for this BMP is the training provided to the development review personnel. The quality of the training and topics discussed should focus on SWQ techniques and practices for site development.	SLCDPU Storm Water Quality, and Engineering Division (Development Review Services)
x	x	x	x	x	<b>BMP 44:</b> Continue to obtain and review SWPPPs for construction projects and industrial facilities.	To obtain SWPPPs prepared by operators on all permitted sites in Salt Lake City.	The measurement for this BMP is the number of construction sites which meet the greater than 1-acre criteria, and or part of a common plan of development or sale that have developed and implemented a SWPPP.	SLCDPU Storm Water Quality, and Engineering Division (Development Review Services)
x	x	x	x	x	<b>BMP 45:</b> Continue to enforce against SWPPP violations.	To have an interdepartmental understanding of addressing the enforcement of construction and industrial activity SWPPPs.	The measurement for this BMP is an SOP/SOI that clearly defines the procedures for enforcement of the SWPPP, and the number of enforcement actions taken.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 46:</b> For City projects, identify erosion control measures as a specific bid item.	To have consistent erosion control measures for City projects.	The measurement for this BMP is the City projects that have erosion control measures as specific bid items.	SLCDPU Engineering Division, and Community and Neighborhoods Engineering
x	x	x	x	x	<b>BMP 47:</b> Participate in education training and seminars conducted by the State of Utah and other agencies.	To share information and new techniques through storm water seminars.	The measurement of this BMP is the training and dissemination of information made available to Salt Lake City storm water and development/plans review personnel.	SLCDPU SWQ Program, and Development Review Services

(x) Indicates year to be implemented or describes an on-going BMP

## 7.0. LONG-TERM (POST-CONSTRUCTION) STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT (Permit §4.2.5.)

The *Long-Term (Post-Construction) Storm Water Management in New Development and Redevelopment Program* addresses post-construction storm water runoff to the MS4 from construction sites disturbing greater than or equal to 1-acre, including projects less than 1-acre that are part of a common plan of development or sale which collectively disturbs at least 1-acre of land. New development and redevelopment areas can impact storm water quality by changing the landscape which can cause increased runoff volumes and resulting in higher flow velocities in receiving waters. These higher flows can increase erosion and affect stream health and channel stability. Also, first-flush contaminant discharges from developed areas can have a large impact on receiving water quality. The intent of this program is to manage runoff flows and improve water quality by requiring post-construction storm water controls to limit the discharge rate, increase retention, target specific pollutants, and improve discharge quality.

### 7.1. DESCRIPTIONS & BMPs

Salt Lake City will address long-term storm water management in accordance with the *Construction Site Storm Water Runoff Control Program* by employing the following major components:

- an ordinance and other regulatory mechanisms requiring post-construction controls (4.2.5.1. & 4.2.5.2.)
- plan review for new development and redevelopment sites, with requirements for detention, retention, and use of GI and LID practices, where able (4.2.5.3.)
- an inspection and enforcement program to ensure proper installation and ongoing maintenance, which includes an incentive program for proper maintenance (4.2.5.2. & 4.2.5.4.)
- an inventory and mapping of post-construction storm water controls (4.2.5.4.)
- and a training program for applicable personnel (4.2.5.5.)

Progress towards measurable goals will be detailed in the Annual Report.

#### 7.1.1. POST-CONSTRUCTION ORDINANCES & REGULATORY MECHANISMS

**Objective:** Reduce pollutants in storm water runoff from post-construction sites.

**Permit Requirement:** Part 4.2.5.1., 4.2.5.1.1., 4.2.5.1.2., 4.2.5.1.3., 4.2.5.1.4., 4.2.5.2., 4.2.5.2.1., 4.2.5.2.3., 4.2.5.2.4, 4.2.5.2.5., 4.2.5.2.6. – Long-Term (Post-Construction) Storm Water Management in Development and Redevelopment

**Description:** Implement and enforce City ordinance and regulatory mechanisms in regard to post-construction storm water controls. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 12:** Enforce the requirements of Salt Lake City Ordinances.

**Ordinances:** The following Salt Lake City Ordinances give legal authority to enforce requirements intended to reduce impacts to storm water quantity and quality from new development and redevelopment projects.

- Salt Lake City Ordinance 29 of 2020, Chapter 17.84: Sections of this ordinance include requirements that any person required to obtain a UPDES permit will comply with all provisions of said permit (17.84.100.), allow access for inspections (17.84.500), require the use and ongoing maintenance (including inspections) of post-construction control measures (17.84.600.B.), submit

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annual certifications of inspection and maintenance (17.84.600.D.), and comply with any enforcement actions against violations of the ordinance (17.84.600.E).

- Salt Lake City Zoning Ordinance Chapter 21A.34.130 (Riparian Corridor Overlay District): The ordinance establishes a special overlay district for all lands near and adjacent to watercourses, lakes, ponds, flood plains, and wetland areas. One of the stated purposes of the overlay zone is to improve water quality, both by filtering and storing sediments and attached pollutants, nutrients, and compounds before they drain into streams or wetlands, and by maintaining the natural pollutant assimilating capacities of stream, flood plains, and wetlands.

*Regulatory Mechanisms:* Salt Lake City's *Building Process & Design Manual* (written in 2012 but under revision in 2021) provides guidance for meeting long-term storm water management requirements; these must be met in order for a plan to be approved. Deviations from the manual are not allowed without approval; this ensures that all development and redevelopment projects adhere to City adopted design standards and will meet 2021 Permit requirements for post-construction BMPs.

*Enforcement Strategy and SOP:* The City will continue to implement enforcement policies outlined in Salt Lake City Ordinance 29-20, Title 17, Chapter 17.84 and 17.87. An SOP has been developed that further details the escalating enforcement process (**Appendix D**).

### 7.1.2. SITE PLAN REVIEW FOR POST-CONSTRUCTION CONTROLS

**Objective:** Review all plans of applicable new development and redevelopment projects that will disturb greater than or equal to 1-acre, including projects less than 1-acre that are part of a common plan of development or sale, for inclusion of Long-Term/Post-Construction storm water BMPs to meet detention, retention and treatment standards.

**Permit Requirement:** Part 4.2.5.1., 4.2.5.1.1., 4.2.5.1.2., 4.2.5.1.3, 4.2.5.1.4., 4.2.5.2.2., 4.2.5.3., 4.2.5.3.1. & 4.2.5.3.2 – Long-Term (Post-Construction) Storm Water Management in Development and Redevelopment

**Description:** Require and implement Long-Term Post-Construction BMPs during the plan review process. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 11:** Continue requirements for on-site detention for developments.

**BMP 12:** Enforce the requirements of Salt Lake City Ordinances.

**BMP 13:** Provide Standard BMPs for site development (active and post-construction) to developers and engineers.

**BMP 14:** Continue inspection and enforcement program for private long-term storm water BMPs.

**BMP 18:** Review proposed street projects for applicability of structural water quality BMPs.

**BMP 19:** Review all proposed storm water projects for the applicability of structural water quality BMPs.

**BMP 20:** Review detention basins for feasibility of retrofitting for water quality enhancements.

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**BMP 22:** Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.

**BMP 25:** Review all new development and re-developments plans for compliance and illicit connections.

*Structural and Non-structural BMPs:* The City will continue to implement requirements for non-structural BMPs as part of the review process for construction permits. Examples of **non-structural** BMPs include the following:

- Minimize development in areas susceptible to erosion and sediment loss.
- Minimize the disturbance of native soils and vegetation.
- Preserve areas that provide important water quality benefits.
- Implement measures for flood control.
- Protect the integrity of natural resources and sensitive areas.

Salt Lake City will implement requirements for **structural** BMPs for on-site detention, retention, and water quality improvement, where applicable, as part of the construction review process. Where-ever possible, water quality treatment devices will be required to target pollutants anticipated to be discharged from a site.

*Preferred Design Specifications:* In 2012, the City developed a *Design Standards and Processes Manual*; the manual is currently under revision for an update in conjunction with the storm water master plan. Section 2.2.2 of the 2012 manual (4.13 of the new) addresses storm water controls, including additional options and requirements for flood control (detention), volume reduction (retention), and storm water quality (controls). The City requires the evaluation and inclusion of GI or LID control BMPs to meet these goals, where feasible. When used in conjunction with the DWQ LID guidance manual (*A Guide to Low Impact Development in Utah*), the SLC *Design Standards and Process Manual* provides specific guidance on how to meet requirements for: assessment of each site for applicability of LID/GI controls, quantifying the 80<sup>th</sup> percentile storm volume and site runoff rates, selection of BMPs that are appropriate for the site's hydrologic/geologic characteristics and the potential pollutants that are expected to discharge from the site, and documentation of, and alternative design criteria for, any infeasibility of inclusion of LID/GI controls. In addition, the Engineering Division of SLCDPU is completing a "LID Toolbox" which outlines which storm water BMPs are allowed for use in the City. The toolbox summarizes requirements, guidelines, and best practices.

*Restrictive Discharge Policy:* The City will maintain existing requirements for all commercial, industrial, and residential developments with impervious areas greater than 15,000 square feet to provide onsite detention facilities to limit the discharge of runoff to a pre-development rate of 0.2 cubic feet per second per acre during the 100-year storm; this regulation has been in place since 1978.

*Development and Redevelopment Retention Policy:* The City will implement requirements for retention, where feasible, of the 80<sup>th</sup> percentile storm event at new development sites with a total disturbance greater than or equal to 1-acre, or projects which are part of a common plan of development or sale that collectively disturbs at least 1-acre of land. Redevelopment sites meeting the same threshold will be required to submit a site and project-specific plan at a net gain to onsite retention or a reduction of the size of impervious surface. If the redevelopment project increases the impervious area by more than 10%, the project will be required to manage rainfall on-site and retain the net increase in volume associated with the precipitation from all rainfall events less than or equal to the 80<sup>th</sup> percentile storm event.

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*Require Low Impact Development and Green Infrastructure:* When reviewing plans for applicable new development and redevelopment projects (both public and private), Salt Lake City will require the use of LID and GI practices, where feasible, to meet retention and treatment standards. If infeasible, this will be documented with a rationale for using alternative design criteria and quantification that infiltration, evapotranspiration, and rainwater harvesting have been used to the maximum extent feasible due to constraints. Where possible, these BMPs will be selected to protect water quality, or water quality protections will be achieved through other control measures. The City allows for the use of any suitable BMP from the DWQ LID guidance manual (*A Guide to Low Impact Development in Utah*). Regardless of retention feasibility, all new applicable development and redevelopment projects will be required to install some form of storm

*Calculating Runoff, Water Quality Volume & 80<sup>th</sup> Percentile Storm Volumes:* The SLC Design and Process Manual provides specific hydrologic methods (Rational Method for <1-acre projects and SCS Curve Number for all others) for calculating runoff volumes, and for determining the 80<sup>th</sup> Percentile Storm depth and associated water quality volume. The datapoints are verified during plan reviews. For meeting 2021 Permit requirements for retention, the city requires site-specific calculations of the design storm runoff volumes for the 80<sup>th</sup> percentile storm event depth.

*SWPPP Review for Long-Term Storm Water Management Measures:* Salt Lake City will review SWPPPs of applicable New Development and Redevelopment sites for an evaluation of potential water quality impacts and inclusion of long-term control measures. This will include requirements for ensuring plans contain comprehensive long-term BMP operations and maintenance plans.

### 7.1.3. LONG-TERM STORM WATER MANAGEMENT INSPECTION AND ENFORCEMENT

**Objective:** Inspect long-term storm water management measures to ensure adequate long-term operation and maintenance.

**Description:** Continue to inspect post-construction storm water management measures, enforce against violations of ordinance, and implementation of SOPs. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**Permit Requirement:** Part 4.2.5.2., 4.2.5.2.3., 4.2.5.2.4., 4.2.5.2.5., 4.2.5.2.6., & 4.2.5.4.2. – Long-term Storm water Management in New Development and Redevelopment

*Long-term Storm Water Management Inspections (Permit Requirement 4.2.5.2., 4.2.5.2.3., 4.2.5.2.4., 4.2.5.2.5. & 4.2.5.2.6.):* The City shall continue to inspect all applicable permanent structural BMPs at least once during installation and once after completion, then once every five years thereafter. Inspections and records will continue to be documented and maintained. Inspections shall include the following documentation:

- Inspection Date;
- Name and signature of inspector;
- Project location;
- Current ownership information;
- A description of the condition of the storm water control measure including the quality of: vegetation and soils; inlet and outlet channel structures; catch basins; spillways; weirs, and other control structures; and sediment and debris accumulation in storage as well as in and around inlet and outlet structures; and

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- Specific maintenance issues or violations found that need to be corrected by the property owner or operator along with deadlines and reinspection dates.

*Ordinance Provision for Inspections on Private Property (Permit Requirement 4.2.5.2., 4.2.5.2.4):* Title 17, Chapter 17.84.500 – Inspection Right of Entry, grants legal authority for the City to be allowed access to applicable sites during construction and post-construction phases for inspections of long-term storm water BMPs as outlined in the ordinance.

*Long-Term Storm Water Management Enforcement (Permit Requirement 4.2.5.2.1., 4.2.5.2.3., 4.2.5.2.4., 4.2.5.2.5. & 4.2.5.2.6.):* Title 17, Chapter 17.87, addresses violations in the ordinance to any long-term water management issues that may adversely affect storm water quality. Enforcement of violations may also include the removal of any storm water impact fee discount the owner/operator may be receiving as part of the post-construction incentive program.

*Inspection and Enforcement SOPs (Permit Requirement 4.2.5.5):* Salt Lake City will continue to revise and implement an SOP that details the inspection and enforcement process for Long-Term Storm Water Management.

#### **7.1.4. LONG-TERM STORM WATER BMP INVENTORY**

Objective: Maintain an inventory of post-construction structural storm water control measures.

Permit Requirement: Part 4.2.5.4., 4.2.5.4.1. & 4.2.5.4.2. – Long-term Storm water Management in New Development and Redevelopment

Description: Salt Lake City will continue to maintain an inventory of all public and private long-term storm water control measures installed and implemented at sites that disturb greater than or equal to 1-acre, including projects less than 1-acre that are part of a common plan of development or sale disturbing at least 1-acre of land. The City will update this inventory as necessary, per inspections. The inventory will include the following information:

- Project name;
- Owner name and contact information;
- Location;
- Start and end date;
- Description of each storm water control measure/BMP (type, number, design or performance specifications);
- Description of inspection and maintenance requirements (frequency of required maintenance and inspections); and
- Inspection information (date, findings, follow-up activities, prioritization of follow-up activities, compliance status).

#### **7.1.5. POST-CONSTRUCTION STORM WATER MANAGEMENT EMPLOYEE TRAINING**

Objective: Provide adequate training for personnel involved in post-construction storm water management.

Permit Requirement: Part 4.2.5.5. – Long-term Storm water Management in New Development and Redevelopment

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**Description:** When the opportunity provides itself, Salt Lake City will provide training for applicable personnel with regards to storm water management, LID/GI technologies, plan review, inspections and enforcement. Training records shall be documented and maintained. The following BMP will continue to be implemented for training:

**BMP 43:** Continue a storm water quality-training program for development and plans review personnel.

## 7.2. STAFFING AND RESOURCE ALLOCATIONS

The Post-Construction Program is implemented by various work groups within SLCDPU. Site Plan Review is done by SLCDPU Engineering Division, which reviews the initial plans submitted for new development or redevelopment projects. Once post-construction controls are approved, such BMPs are inspected during construction by Engineering Division staff with support of the GIS Division, and again after construction to confirm that all controls are properly installed and functional. The GIS Division staff then adds these BMPs to the City's inventory and GIS map of post-construction controls. The inventoried sites are inspected every 5-years to confirm ongoing maintenance and will continue to be overseen by SLCDPU, who has one dedicated FTE to inspect these sites, conduct enforcement actions to ensure compliance, and maintain an updated database.

## 7.3. IMPLEMENTATION STATUS

Measurable goals for this BMP to be implemented and assessed during the permit term are presented in **Table 7.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

**Table 7.1 Implementation Status for Long-Term Storm water Management Program**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 11:</b> Continue requirements for on-site detention for developments.	To improve water quality by engineering on-site detention facilities, which are designed to improve water quality and allow a more controlled runoff discharge through storm drain piping or groundwater recharge.	The measurement for this BMP is the number of drainage plans approved.	SLCDPU Water Quality, GIS, and Engineering Divisions
x	x	x	x	x	<b>BMP 12:</b> Enforce the requirements of Salt Lake City Ordinances.	To provide protection, preservation, proper maintenance, and use of Salt Lake City’s water courses, lakes, ponds, floodplain, and wetland areas to include downstream drainage areas for present and future residents of Salt Lake City.	The measurement for this BMP is the approval of required plans, and enforcement of the ordinance. Soils reports identifying soil stability, drainage control plans, and site grading and excavation plans must be submitted and approved prior to any work being done.	SLCDPU SWQ, GIS, and Engineering Divisions, and SLC Community and Neighborhoods (CAN) Engineering
x	x	x	x	x	<b>BMP 13:</b> Provide Standard BMPs for site development (active and post-construction) to developers and engineers.	To have a set of standard construction BMPs that are available to developers and engineering consultants that may be used to enhance SWQ.	The measurement of this BMP is the quality of the guidance document and the BMPs that are implemented during site development as a result of this document.	SLCDPU, SLCDPU Capital Improvement Program, and SLCDPU Development Review Services
x	x	x	x	x	<b>BMP 14:</b> Continue inspection and enforcement program	To ensure that control structures are in place and functioning properly on private property in accordance with	The measurement for this BMP is the inspections on the private detention basins to ensure control structures	SLCDPU SWQ, GIS, and Engineering Programs



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					for private long-term storm water BMPs.	detention, retention, and water quality protective requirements.	are in place and functioning properly.	
x	x	x	x	x	<b>BMP 18:</b> Review proposed street projects for applicability of structural water quality BMPs.	The goal of this BMP is to review all street maintenance projects for applicability of installation of structural BMPs such as grass swales and detention basins to reduce pollutants.	The measurement of this BMP is that 100% of all street maintenance projects are reviewed and inspected with structural BMPs installed. As these structural BMPs are installed, the key measurement is the reduction of pollutants transported into the rivers and streams.	SLCDPU Capital Improvements Program, Engineering Division, and Public Services
x	x	x	x	x	<b>BMP 19:</b> Review all proposed storm water projects for applicability of structural water quality BMPs.	The goal of this BMP is to develop the best methodology for evaluating and improving water quality on all storm water capital projects.	The measurement of this BMP is the number of storm water projects reviewed and the impact the capital improvements have on improving water quality discharging to the receiving water bodies	SLCDPU Capital Improvements Program, and Engineering Division
x	x	x	x	x	<b>BMP 20:</b> Review detention basins for feasibility of retrofitting for water quality enhancements.	To review and develop a plan regarding the feasibility of retrofitting existing detention basins for water quality enhancements.	The measurement for this BMP is the review process of existing structural controls and implementation of retrofits to the structures to enhance SWQ.	SLCDPU, Capital Improvements program, and Engineering Division
x	x	x	x	x	<b>BMP 22:</b> Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.	To minimize the off-site discharge of storm water runoff in protection of receiving water quality, by requiring retention of the 80th percentile storm depth for new development projects disturbing at least one-acre of land (or common plan of development or sale of at least one-acre); redevelopment projects disturbing at least one-acre that increase impervious surface by 10% will be required to retain the net increase of the 80th percentile storm depth.	The measurement for this BMP is the number of post-construction BMPs installed to meet the city's new retention standards.	SLDPU CIP, Development Review Services, and CAN Dept Engineering
x	x	x	x	x	<b>BMP 25:</b> Review all new development and re-developments plans for compliance and illicit connections.	The goal of this BMP is to ensure that all new commercial and industrial development plans comply and that illicit connections to the storm drain are not constructed.	The measurement for this BMP is the number of plans reviewed.	SLCDPU Engineering Division, and Development Review Services
x	x	x	x	x	<b>BMP 43:</b> Continue a SWQ-training program for development and plans review personnel.	To expand the knowledge of site development review personnel regarding storm water pollution prevention techniques and practices.	The measurement for this BMP is the training provided to the development review personnel. The quality of the training and topics discussed should focus on SWQ techniques and practices for site development.	SLCDPU Storm Water Quality, and Engineering Division (Development Review Services)

(x) Indicates year to be implemented or describes an on-going BMP

## 8.0. POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS (Permit §4.2.6.)

Salt Lake City's *Pollution Prevention and Good Housekeeping for Municipal Operations* ("O&M") Program will address storm water pollution prevention at City-owned and operated facilities and infrastructure, including City operations and maintenance activities which have the potential to discharge pollutants into the MS4 and receiving waters. The goal of this program is to prevent or reduce the discharge of pollutants in storm water runoff and protect downstream water quality.

### 8.1. DESCRIPTIONS & BMPs

The *Pollution Prevention (O&M) Program* includes the following major components:

- Written inventory of City-owned and operated facilities and storm water controls, including an assessment of the common pollutants at each facility, and how to prevent them from entering the MS4 (4.2.6.1. & 4.2.6.2.).
- Prioritization of potential *High Priority* facilities based on permit-required criteria (4.2.6.3.).
- Implementation and maintenance of water quality control measures and BMPs at *High Priority* facilities, including development and implementation of SOPs and SWPPPs for each *High Priority* facility (4.2.6.4. & 4.2.6.5.).
- Inspections and storm water discharge monitoring program for those *High Priority* facilities (4.2.6.6.).
- SOP development and implementation program that addresses potential storm water pollution in O&M activities, including a system for contractually requiring third party contractors conducting O&M activities for the City to follow City standards that protect water quality, including site visits and inspections (4.2.6.7. & 4.2.7.7.).
- Assessment of any water quality impacts from existing or new/proposed flood management structural controls, including standards for retrofitting structures that are found to have the potential to adversely impact water quality (4.2.7.8. & 4.2.6.9.).
- Annual training program for all employees, contracted staff, and other responsible entities whose job functions are likely to impact storm water quality (4.2.6.10.).

Through the implementation of this program, the City seeks to prevent or reduce the discharge of pollution from O&M activities and long-term storm water management to the MS4 and waters of the state, to the maximum extent practicable.

#### 8.1.1. FACILITY INVENTORY

**Objective:** To maintain an inventory of all City-owned and/or operated facilities, including the common potential pollutants and how to control them.

**Permit Requirement:** Part 4.2.6.1. & 4.2.6.2.

**Description:** Salt Lake City will maintain an updated inventory of all City-owned or operated facilities and storm water controls, including those types of facilities listed in section 4.2.6.1 of the 2021 permit, where applicable; the current facilities inventory can be found in **Appendix E**. These facilities have been assessed for the common pollutants found at each, which is also provided in the facilities inventory in **Appendix E**. Storm water controls (including BMPs, SOPs, and SWPPPs) have been developed to reduce or prevent the discharges of those pollutants in storm water runoff. The City will review and update the inventory annually. The process for assessment of the facilities for storm water pollution potential is

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detailed in an SOP (“Water Quality – Priority Facilities – Operations and Maintenance Inspection Program”) and will continue to be implemented annually as new facilities are built or purchased, or as existing facilities change.

### 8.1.2. IDENTIFYING PRIORITY FACILITIES

**Objective:** To identify priority City-owned or operated facilities and operations, and to implement facility-specific SOPs to prevent the discharge of pollutants.

**Permit Requirement:** Part 4.2.6.3. – Pollution Prevention & Good Housekeeping for Municipal Operations

**Description:** The City has identified and will continue to update a list of “Priority Facilities” whose potential for discharge of storm water pollutants warrants additional procedures or measures to reduce or eliminate impacts to storm water quality. This process took the inventory of all facilities, and a subsequent assessment by Salt Lake City MS4 personnel and identified facilities that have the highest potential to generate storm water pollutants; these were selected for “Priority” considerations. The detailed procedure for this assessment is provided in an SOP (“Water Quality - Priority Facility – Operations and Maintenance Inspection Program”), which can be found in **Appendix D**, and the final *Priority Facilities* list can be found at the end of the *Facilities Inventory* in **Appendix E**.

### 8.1.3. PRIORITY FACILITIES BMPs, SOPs, AND SWPPPs

**Objective:** To maintain and implement water quality control BMPs, SOPs, and SWPPPs at City-owned or operated Priority Facilities to prevent the discharge of pollutants in storm water runoff from O&M activities.

**Permit Requirement:** Part 4.2.6.4. and 4.2.6.5. – Pollution Prevention & Good Housekeeping for Municipal Operations

**Description:** The City will continue to maintain and implement water quality control measures, BMPs, SOPs, and SWPPPs designed to target specific pollutants generated onsite at Priority Facilities, while taking into consideration any impaired receiving waters. Those measures will be monitored and implemented in accordance with SOPs for inspections and SWPPP implementation to verify that all controls and BMPs are functioning. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

*Priority Facility Controls and BMPs:* During the prioritization of facilities, an assessment of the potential pollutants and associated pollution control measures was completed, as shown in **Appendix E**. To address those identified potential pollutants, priority facilities have water quality controls and BMPs such as, but not limited to: washing bays (for vehicle and equipment washing) tied to sanitary sewer, oil/water separators, concrete washout areas, spill kits and response procedures, chemical and automotive fluids storage areas (inside or covered by structures), vehicle and equipment maintenance areas and protocols, contained material storage areas/bins, and good housekeeping practices that maintain storm water quality. These practices and controls are detailed in SWPPPs and SOPs for the respective facilities and maintained/implemented in accordance with those plans and procedures, which include inspections procedures.

*Priority Facility-specific SOPs:* Site-specific SOPs have been developed for Priority Facilities that address storm water pollution prevention (see **Appendix D**). In addition, Priority Facility-specific guidance SOPs (see **Appendix E**) have been developed as reference documents for insertion in Priority Facility SWPPPs and serve to identify pollutants and the respective operations and activities that target the prevention of discharges of those pollutants. In addition, these reference sheets identify

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the site-specific SOPs that are pertinent to each facility. With regard to long-term storm water management at Priority facilities, LID techniques shall be considered for all new and redeveloped City-owned or operated facilities.

*Priority Facility SWPPPs:* SWPPPs for these High Priority facilities have been developed and will continue to be implemented. These SWPPPs outline measures to prevent pollution from entering the MS4 and include inspections schedules and site maps that provide 2021 Permit required elements for locating all pertinent storm water and pollution prevention information. The SWPPPs are managed by the respective facility's SWPPP coordinator and compliance with those plans is verified during comprehensive inspections at a semi-annual frequency.

#### **8.1.4. HIGH PRIORITY FACILITY INSPECTION PROGRAM**

**Objective:** Reduce or prevent the discharge of pollutants from City-owned or operated high priority facilities.

**Permit Requirement:** 4.2.6.6, 4.2.6.6.1, 4.2.6.6.2, & 4.2.6.6.3 – Pollution Prevention and Good Housekeeping for Municipal Operations

**Description:** High-Priority facilities will have dedicated personnel familiar with their facilities and operations to conduct inspections and discharge monitoring at the following frequencies:

*Monthly Visual Inspections:* Monthly visual inspections of high-priority facilities and related storm water controls will be conducted in accordance with inspection SOPs to verify the performance of the BMPs and any other systems designed to eliminate pollution discharge. Records of these inspections will be maintained electronically and with the SWPPP for each facility. Any deficiencies identified will be tracked in the inspection log along with any corrective actions taken to correct those deficiencies.

*Semi-Annual Comprehensive Inspections:* Comprehensive inspections of high-priority facilities and related storm water controls will be conducted in accordance with inspection SOPs on a semi-annual basis. These inspections will include specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar pollutant-generating areas. Records of these inspections will be maintained electronically and with the SWPPP for each facility. Any deficiencies identified will be tracked in the inspection log along with any corrective actions taken to correct those deficiencies.

*Annual Visual Observation of Storm Water Discharges:* Annual visual observations of the quality of storm water discharges will be conducted during the wet season at the high-priority facilities in accordance with inspections SOPs. Observations of problems (e.g.: color, foam, sheen, turbidity) in runoff quality will be documented as deficiencies, and efforts will be made to remedy any observed problems, as appropriate and as quickly as possible. Reports of these observations will be maintained electronically and with the SWPPP for each facility. Any deficiencies identified will be detailed in the inspection report along with any corrective actions taken to correct those deficiencies.

#### **8.1.5. OPERATIONS AND MAINTENANCE SOPS AND BMPs**

**Objective:** Reduce or prevent the discharge of pollutants from City-owned or operated facilities, including the operations and maintenance work done in the field by regular staff and contracted employees.

**Permit Requirement:** 4.2.6.7., 4.2.6.7.1., 4.2.6.7.2., 4.2.6.7.3., 4.2.6.7.4., 4.2.6.7.5., 4.2.6.7.6., 4.2.6.7.6.1., and 4.2.7.7. – Pollution Prevention and Good Housekeeping for Municipal Operations

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**Description:** Salt Lake City has developed (and will continue to update and implement) SOPs to protect water quality through the operations and maintenance of facilities and field activities. The SOPs address practices that have the potential to impact water quality (as identified in 4.2.6.7.1. and 4.2.6.7.2. of the 2021 Permit) and ensure that those impacts are prevented or minimized to the maximum extent practicable. These SOPs are presented in an SOP Manual that is revised regularly to meet program changes and incorporate new procedures; the manual is presented in **Appendix D**. All SOPs will be implemented by the respective workgroups responsible for those locations and activities. Contractors conducting work for the City are required by contract to follow all City standards and procedures in the protection of water quality and will be confirmed through site visits. The following BMPs and standard procedures for various City-owned facilities, areas, and practices have been designed to address pollution prevention and meet 2021 Permit requirements for this program component.

- BMP 01:** Clean the entire storm sewer system every 5 years.
- BMP 02:** Inspect the storm sewer system and detention basins within the permit cycle.
- BMP 05:** Remove leaves from gutters and inlets during the fall leaf season.
- BMP 06:** Support the Curbside recycling effort for Salt Lake City residents.
- BMP 07:** Support resident clean-up days of selected waterways and natural areas.
- BMP 08:** Track drainage system maintenance using Cityworks® system.
- BMP 10:** Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.
- BMP 15:** Support the existing Salt Lake City Street Sweeping program.
- BMP 16:** Inspect salt/deicing materiel storage areas for proper storm water control measures.
- BMP 17:** Continue procedures for monitoring storm water management on Public construction projects.
- BMP 18:** Review proposed street projects for applicability of structural water quality BMPs.
- BMP 38:** Continue the procedure for reporting and investigating possible SSOs into the storm sewer system.

*Buildings and Facilities:* Salt Lake City will continue to implement SOPs for building and facility operations and maintenance which were designed to protect water quality. These SOPs include but are not limited to: operations; good housekeeping practices; maintenance; waste management – including thoughtful placement of dumpsters and cans with labels for the type of waste – disposal, container covers, inspections for leaks; facility and container leak and spill management/prevention; concrete waste management; painting; human and pet waste management and power-washing procedures.

*Materials Storage Areas:* The City maintains storage areas for materials in a manner to prevent the discharge of pollutants from those areas into the MS4. SOPs for these efforts have been developed and will continue to be implemented which provide for proper containment or cover for dissolvable or

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loose materials; storage away from storm sewer inlets, watercourses, and waterways; proper chemical labeling, handling, disposal, and storage in areas with secondary containment; spill kits; inspections and spill response procedures; and general good housekeeping.

*Heavy Equipment Storage and Maintenance Areas:* Salt Lake City has developed and will continue to update and implement SOPs for facilities/areas in which heavy equipment is stored and maintained, which include spill kits, procedures for using drip pans or absorbents for leaking equipment until repaired, timely repairs of leaks, routine and controlled maintenance in designated buildings with floor drains that discharge to sanitary sewer, clean-up procedures for leaks utilizing dry absorbent that are swept up and not washed down with water, equipment wash stations and procedures, and general good housekeeping.

*Parks and Open Space:* SOPs have been developed and will continue to be implemented with the intent to address the prevention of discharging pollutants to the MS4 during operations and maintenance of Parks and Open Space areas. These SOPs include proper application of pesticides, herbicides and fertilizers (in line with Integrated Pest Management principles), noxious and invasive plant management, planting of vegetation, fueling, good housekeeping practices, proper waste disposal, management of trash containers, equipment maintenance, building exteriors washdown and painting, pet waste management, landscaping debris management, irrigation system maintenance, waterline flushing, procedures for reporting and responding to illicit discharge observations, equipment cleaning.

*Vehicle and Equipment:* The City has developed and will continue to update and implement SOPs for facilities or activities in which vehicles and equipment are maintained, repaired and washed. This includes spill kits, procedures for using drip pans or absorbents for leaking assets until repaired, timely repairs of leaks, controlled maintenance in designated buildings with floor drains that discharge to sanitary sewer, clean-up procedures for leaks utilizing dry absorbent that is swept up and not washed down with water, equipment wash stations and procedures, and general good housekeeping. Procedures for transporting equipment have also been developed, which include methods for proper selection of transportation vehicles, pre-inspections of equipment, rigging and tie-off point inspections, safe and secure loading on the transport vehicle (including fuel containers in a manner to avoid spillage, offloading and storage of equipment once transported and a post-trip inspection. BMPs for vehicle and equipment maintenance, as described in facility-specific SOPs, are designed to ensure that the storage of maintenance materials, and the waste associated with those activities, are managed in a way that prevents the discharge of pollutants to the MS4. The BMPs for washing of equipment and vehicles discharge to the sanitary sewer and are not tied to the storm sewer system, ensuring proper disposal of those wash waters.

*Roads, Highways and Parking Lots:* The City has developed and will continue to update and implement SOPs to address pollution prevention from City-owned roads, rights-of-way, highways and parking lots, and any other activities or maintenance associated with these facilities that may affect water quality. This program includes pavement maintenance procedures for chip and crack sealing, overlays and patching, slurry sealing, snow removal through deicing applications, and street sweeping. The City's Fall leaf removal program is an essential effort to reduce organic matter discharge into the MS4 during the Fall months. The City's Department of Public Service operates a fleet of street sweepers which are assigned to routine, scheduled sweeping industrial, commercial and residential areas. The areas are swept year-round, weather permitting, on a pre-determined rotation so that the entire City is swept approximately nine times per year, with the downtown central business district swept once every two weeks. Additional sweepers are assigned to the Streets Division's Asphalt Surface Treatment Program to support those maintenance activities. The City's Storm Water Utility pays 13% of the cost for street sweeping. The Public Services - Streets Operation Manager

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tracks and schedules the street sweeping. This includes a schedule for sweeping and cleaning which is prioritized for higher frequency in areas with a higher pollutant load. Additionally, City facility parking lots, sidewalks, plazas, and other impervious areas are cleaned monthly, with additional cleaning done by request, as needed.

*Storm Water Collection and Conveyance System:* SOPs have been developed and will continue to be implemented which address inspections, cleaning, and repairs of the storm water system including catch basins, pipes, ditches and canals, culverts, and structural BMPs. Structural BMPs will be inspected on an annual basis. More frequent inspections and maintenance will occur in those areas deemed as higher priority based on water quality concerns and the amount and type of material that typically accumulates in an area. The City will continue to document disposal of all debris removed from the storm water conveyance system.

*Facilities Floor Drain Inventory and Discharge Confirmation:* The City will continue to maintain an inventory of floor drains at all city-owned or operated facilities. The inventory will be updated with new information so that a complete inventory is available on request. For purposes of confirming the discharge locations for these floor drains, the City has already confirmed the locations receiving discharges from floor drains at High-Priority facilities, with a plan to assess the discharge locations of floor drains through the City's facilities inventory at a rate of 10% of floor drains assessed, per year. This plan was submitted to DWQ on February 22, 2022, and approval letter was received February 28, 2022. The plan extends through all 5 years of the current MS4 Permit cycle and into the next such that all floor drains will be assessed within 10-years of the issuance of the 2021 Permit. (See **Appendix I** for details of the approved plan. Progress towards this permit requirement will be reported annually.)

#### **8.1.6. WATER QUALITY ASSESSMENT AND RETROFITS OF FLOOD CONTROL PROJECTS**

**Objective:** Continue to review new flood management structural controls, and the consideration of potential retrofits for existing controls with the intent to reduce pollutants in storm water runoff.

**Permit Requirement:** Part 4.2.7.8., 4.2.6.8.1., and 4.2.6.9 – Pollution Prevention and Good Housekeeping for Municipal Operations

**Description:** This section is integrated with the Long-term Storm water Management Program (Section 7.1.2 – Site Plan Review) for private projects and will complement the management of long-term structural BMPs owned/operated by the City. The City will continue to employ a process that considers potential impacts to water quality and hydrology when assessing new flood management projects and considering the potential for retrofitting existing structural controls. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

- BMP 19:** Review all proposed storm water projects for the applicability of structural water quality BMPs.
- BMP 20:** Review detention basins for feasibility of retrofitting for water quality enhancements.
- BMP 22:** Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.

*New Flood Management Project Assessment & Design:* Through the Capitol Assets Program (CAP) and associated Engineering plan reviews of all new flood management structural controls, projects will be assessed for the potential water quality impacts that can be anticipated from discharges from



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those controls. In addition, the project will include consideration of controls that can be used to minimize the impacts to water quality and hydrology.

*Existing Structural Control Evaluation for Potential Retrofit:* SLCDPU is conducting a complete basin and master planning effort as part of the Storm Water Master Plan. The master plan is ongoing and it is anticipated that this will be completed in 2022. The use of structural components to enhance storm water quality will be considered during the selection of recommended flood control improvements and will be designed.

#### 8.1.7. EMPLOYEE TRAINING

**Objective:** Provide training for Salt Lake City employees who have primary construction, operation, or maintenance job functions that are likely to impact storm water quality.

**Permit Requirement:** Part 4.2.6.9. – Pollution Prevention and Good Housekeeping for Municipal Operations

**Description:** The City will continue to provide training for employees whose primary roles are likely to impact storm water quality. The training requirements of the 2021 Permit for the O&M Program are met through a system that requires all employees, contracted staff, and other responsible entities whose job functions are likely to impact storm water quality. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 09:** Conduct annual training for drainage system maintenance personnel.

*O&M Training Program:* The City is developing a training guide to meet all MS4 permit requirements for training; this will be completed in year 1 of the 2021 Permit cycle. In the interim: New hires within the SWQ program are trained within 60-days on current SOPs and the dynamics of storm water quality management in all aspects of the program for which that position is responsible (or will be assisting with the implementation thereof). Due to the size of the City, relative to the size of the SWQ Program, all other new-hire employees in the City are to be trained within 60-days of hire by their respective supervisors on SOPs that were developed (and continue to be maintained/updated) to minimize pollution during their work. Annual training and refreshers will be provided to applicable City staff, as required by Permit, through various training mechanisms including in-person training sessions, field exercises, online video and tutorial sessions, and through email communications of changes in program dynamics (if determined a training session is not needed for a particular issue). Contractors conducting work for the city are required, by contract, to adhere to City standards and procedures; online training is available for those contractors, and the project managers and supervisors of those contractors are required to ensure that all parties conducting O&M work for the City are properly trained and qualified to complete all necessary tasks.

#### 8.2. STAFFING AND RESOURCE ALLOCATIONS

The City has various departments and facilities that are covered under the *Pollution Prevention and Good Housekeeping for Municipal Operations (O&M) Program*. Staff at Facilities that are designated “high priority” will be responsible for their respective facilities and portion of the O&M Program. The prioritization of facilities will be conducted by SWQ, but the implementation of best practices will be done by designated City employees within their respective priority facilities; those employees shall be accountable for addressing pollution prevention and good housekeeping, including implementation of the SWPPP, SOPs, inspections, training, and documentation. The SWQ Program will conduct storm water discharge monitoring and will continue to oversee and assist the program as needed, in addition to ensuring responsible parties are adequately trained.

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### 8.3. IMPLEMENTATION STATUS

Measurable goals for this BMP to be implemented and assessed during the permit term are presented in **Table 8.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the scheduled identified.

**Table 8.1 Implementation Status for Pollution Prevention/Good Housekeeping Program**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 01:</b> Clean the entire storm sewer system every 5 years.	To keep the storm drainage conveyances clean and clear of debris, and minimize organic matter and litter from entering into the storm drainage system and Waters of the State	The Cityworks® Work Order System is used to track system maintenance. Each system feature such as pipes, manholes, and detention basins, have been assigned a unique record in the data- base. Maintenance activity on each structural feature of the Salt Lake City system is tracked. The number of complaints is also tracked.	SLCDPU Storm Sewer Maintenance Program
x	x	x	x	x	<b>BMP 02:</b> Inspect the storm sewer system and detention basins within the permit cycle.	To keep all of the major storm drains and detention basins in repair and clean of any debris or sediment that may keep them from efficient operation.	The Cityworks® Work Order System will be used for keeping track of all of the major storm drains and detention basins inspected, and document any repairs or cleanup.	SLCDPU Storm Sewer Maintenance Program
x	x	x	x	x	<b>BMP 05:</b> Remove leaves from gutters and inlets during the fall leaf season.	To clean leaves out of the gutters and drainage intakes before they get into the storm drain system. This minimizes organic material that may otherwise convey into the Waters of the State.	The tons of leaves that are removed and taken to various locations for composting will be used for measuring the success of this BMP.	SLCDPU Storm Sewer Maintenance Program, and Salt Lake Public Services
x	x	x	x	x	<b>BMP 06:</b> Support City Curbside Recycling effort for City residents	To reduce or eliminate material that can be recycled from getting into curbs, storm drainage conveyances, and Waters of the State.	The amount of material recycled and kept out of the storm drain system and the landfill.	SLC Department of Sustainability
x	x	x	x	x	<b>BMP 07:</b> Support resident clean-up days of selected waterways and natural areas.	To improve the aesthetics of selected waterways by removing debris and to promote citizen awareness and responsibility regarding the waterway.	The change in the amount of debris removed from the waterway and hauled to the landfill is one measurement of the success of this BMP.	SLC Department of Public Lands
x	x	x	x	x	<b>BMP 08:</b> Track drainage system maintenance using Cityworks® system.	To document and track system maintenance, with the computerized work order system. (Cityworks®). This documentation will be used to keep track of maintenance activity on each structural feature of the Salt Lake City system and provide information for future maintenance activities	The measurement for this BMP is the work performed on the storm drainage system. The number of work orders assigned and the repairs and/or replacements to portions of the drainage system to ensure the systems are clean and function properly.	SLCDPU Storm Sewer Maintenance Program, and GIS
x	x	x	x	x	<b>BMP 09:</b> Conduct annual training for drainage system maintenance personnel.	To ensure that storm drainage maintenance personnel are aware of their responsibility in maintaining SWQ as work is performed.	The measurement for this BMP is the training provided for maintenance personnel. The quality of the training and topics discussed should focus on BMPs that can be implemented to maintain SWQ while performing maintenance activities. Another aspect of the training will focus on illicit discharge identification.	SLCDPU Storm Sewer Maintenance Program, and SWQ Program

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x	x	x	x	x	<b>BMP 10:</b> Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.	To ensure proper disposal of sediments from storm drain cleaning in an efficient and environmentally sound manner.	The measurement for this BMP is the number of loads and volume that are properly de-watered and hauled to the landfill for disposal. This disposal method is used to dispose of the sediment in an environmentally sound manner.	SLCDPU Storm Sewer Maintenance Program
x	x	x	x	x	<b>BMP 15:</b> Support the existing Salt Lake City Street Sweeping program.	The goal of this BMP is to reduce the impact on receiving waters from pollutants and debris accumulating on the streets from residential, industrial, and commercial use.	The measurement of this BMP is the miles of street swept and debris removed from the streets.	SLCDPU Storm Water Utility Program
x	x	x	x	x	<b>BMP 16:</b> Inspect salt/deicing material storage areas for proper storm water control measures.	To have an environmentally sound storm water management plan implemented around street deicing salt piles.	The measurement for this BMP is the prevention of the salt, and brine solution from leaving the containment area and migrating to storm drainage systems or leaching into the groundwater.	SLCDPU SWQ Program, SLC Public Services and Facilities
x	x	x	x	x	<b>BMP 17:</b> Continue procedures for monitoring storm water management on Public construction projects.	The goal of this BMP is to meet Storm Water conditions by identifying and controlling problems with erosion, sedimentation, or other pollutants that may enter the drainage system on CED Projects.	The measurement for this BMP is the UPDES construction permits, SWPPPs, and erosion and sediment controls implemented on Public Service Projects.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 18:</b> Review proposed street projects for applicability of structural water quality BMPs.	The goal of this BMP is to review all street maintenance projects for applicability of installation of structural BMPs such as grass swales and detention basins to reduce pollutants.	The measurement of this BMP is that 100% of all street maintenance projects are reviewed and inspected with structural BMPs installed. As these structural BMPs are installed, the key measurement is the reduction of pollutants transported into the rivers and streams.	SLCDPU Capital Improvements Program, Engineering Division, and Public Services
x	x	x	x	x	<b>BMP 19:</b> Review all proposed storm water projects for applicability of structural water quality BMPs.	The goal of this BMP is to develop the best methodology for evaluating and improving water quality on all storm water capital projects.	The measurement of this BMP is the number of storm water projects reviewed and the impact the capital improvements have on improving water quality discharging to the receiving water bodies	SLCDPU Capital Improvements Program, and Engineering Division
x	x	x	x	x	<b>BMP 20:</b> Review detention basins for feasibility of retrofitting for water quality enhancements.	To review and develop a plan regarding the feasibility of retrofitting existing detention basins for water quality enhancements.	The measurement for this BMP is the review process of existing structural controls and implementation of retrofits to the structures to enhance SWQ.	SLCDPU, Capital Improvements program, and Engineering Division
x	x	x	x	x	<b>BMP 22:</b> Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.	To minimize the off-site discharge of storm water runoff in protection of receiving water quality, by requiring retention of the 80th percentile storm depth for new development projects disturbing at least one-acre of land (or common plan of development or sale of at least one-acre); redevelopment projects disturbing at least one-acre that increase impervious surface by 10% will be required to retain the net increase of the 80th percentile storm depth.	The measurement for this BMP is the number of post-construction BMPs installed to meet the city's new retention standards.	SLDPU CIP, Development Review Services, and CAN Dept Engineering
x	x	x	x	x	<b>BMP 33:</b> Continue to implement a storm sewer spill response plan.	To have a storm drain spill response plan that is consistently used when a spill occurs.	The measurement for this BMP is the number of storm drain spill responses.	SLCDPU SWQ Program, and Storm Sewer Maintenance Program

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x	x	x	x	x	<b>BMP 38:</b> Continue procedure for reporting and investigating possible SSOs into the storm sewer system.	To eliminate infiltration from the sanitary sewer into the storm drain system.	The measurement for this BMP is the number or problems resolved regarding the infiltration of sanitary sewage to the storm drain system. The aggregate portion of the collection system investigated is another measurement.	SLCDPU Water Quality and Sanitary Sewer Collections & Maintenance Crews
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(x) Indicates year to be implemented or describes an on-going BMP

## 9.0. INDUSTRIAL AND HIGH-RISK RUNOFF (Permit §4.3.)

The *Industrial and High-Risk Runoff Program* addresses the discharge of pollutants to the City’s MS4 from industrial and priority commercial facilities, with the primary goal of controlling those discharges and minimizing impacts to water quality from those discharges.

### 9.1. DESCRIPTIONS & BMPs

The major components of this Industrial Program, which are designed to meet 2021 Permit requirements, include ongoing efforts for:

- maintaining inventory and prioritization of industrial and high-risk facilities (4.3.1.)
- public education and outreach to high priority commercial facilities (4.3.2.)
- conducting inspections at industrial facilities with requirements for appropriate control measures (4.3.3. & 4.3.4.)
- enforcement of storm water quality permit requirements (4.3.5.)
- training of employees (4.3.6.)

#### 9.1.1. INDUSTRIAL AND HIGH-RISK FACILITY INVENTORY AND PRIORITIZATION

**Objective:** An inventory of (UPDES and SLDPU) permitted Industrial facilities, as well as non-permitted “Priority” Commercial facilities that pose the greatest potential to discharge pollutants into the MS4.

**Permit Requirements:** 4.3.1., 4.3.1.1., 4.3.1.2., 4.3.1.3., 4.3.1.4., 4.3.1.5., 4.3.3., 4.3.3.1., 4.3.3.2., 4.3.3.3. and 4.3.3.3.1. - Industrial and High-Risk Runoff

**Description:** Salt Lake City will continue to update and maintain an inventory of industrial facilities. In addition, the City will maintain a priority commercial facilities inventory for targeted outreach and education. The prioritization of Industrial and High-Risk (“priority” commercial) facilities will assist in identifying those facilities and tracking any inspections or targeted outreach. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 36:** Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.

**BMP 39:** Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.

**BMP 40:** Identify and Prioritize industrial and priority commercial groups for inspections and education.

**BMP 41:** Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.

**BMP 42:** Distribute water quality education materials to Industrial and priority commercial facilities.

**Industrial and High-Risk Facility Inventories:** Salt Lake City will continue to identify and inventory permitted and non-permitted industrial/commercial sites through various means, including use of the City’s current database in conjunction with the State of Utah’s MSGP database, monitoring of business licenses issued within the City, and receipt and assessment of a Commercial/Industrial User Questionnaire (CIUQ) form required for new businesses. The UPDES MSGP program identifies

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target industrial groups which are required to obtain both State, and by ordinance, City issued Storm water permits. The City's Industrial permittees database will be updated regularly (but at a minimum: annually) to reconcile with the State's database in order to ensure any new MSGP holders are captured, at which time requirements for City permitting (and any necessary storm water control measures) are conveyed to those facilities until they have achieved City permit coverage and overall site compliance. The business licenses list will be updated every 5-years to identify (for purposes of targeted education and outreach) any new commercial sources whose discharges might affect water quality. To further that effort and ensure more timely capture of potential priority commercial sites, the CIUQ form is required to be submitted by new Public Utilities commercial/industrial customers and will be reviewed for responses to questions pertaining to potential storm water quality concerns. Furthermore, the type of business, SIC/NAICS codes, and descriptions of products and services will be assessed for potential to discharge pollutants and the possible requirements for industrial permit coverage, as applicable.

The City's industrial and high-risk inventory database will include applicable sites/sources that are identified as Industrial Facilities [as defined at 40 CFR 122.26(b)(4), including MSGP facilities], those subject to Title III of the Superfund Amendments and Reauthorization Act (SARA), those that are hazardous waste treatment, disposal, storage, and recovery facilities, and those identified by details provided by the CIUQ form, or other research, for inclusion in the inventory. In addition, data from UPDES pretreatment programs within the MS4 boundary on significant industrial users (SIUs) will be used to identify and prioritize industrial sites. The Industrial and High-Risk inventory shall include the following information for each site:

- Name;
- Address;
- Physical location of storm drain receiving the discharge;
- Name of receiving water;
- Pollutants potentially generated by the site/source;
- Identification of whether the site/source is (1) tributary to an impaired water body segment (i.e., whether it is listed under Section 303(d) of the Clean Water Act) and (2) whether it generates pollutants for which the water body segment is impaired;
- A narrative description including the NAICS; and
- System (NAICS) codes, which best reflect the principal products or services provided by each facility.

*Industrial and High-Risk Commercial Facility Prioritization:* Industrial and High-Risk commercial facilities will be prioritized for increased inspections (industrial) and public education and outreach (commercial/industrial). While commercial facilities will be identified and prioritized based on the type of activities associated with the business which show the greatest risk to discharge pollutants into the MS4; other factors will be taken into account, such as: IDDE history in accordance with SLCoHD records; those sites/sources that are tributary to an impaired water body segment (where the site/source generates the pollutants of concern for which the waterbody is impaired); and by general proximity to a waterbody. The City has developed a procedure for listing priority commercial sites and a plan to target these sites/sources with public outreach and education to at least two priority categories per year; see **Appendix D** for the SOP and program details. The following commercial sites/sources will be evaluated for inclusion in the high-risk inventory. The categories/sources will be re-evaluated on an annual basis to reflect current priorities and concerns, which may require additional categories for inclusion, as deemed necessary:

- Automobile (and other vehicle) body repair or painting

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- Automobile (or other vehicle) parking lots and storage facilities
- Automobile repair, maintenance, fueling, or cleaning
- Cement mixing or cutting
- Eating or drinking establishments (e.g. restaurants)
- Equipment repair, maintenance, fueling, or cleaning
- Golf courses, parks, and other recreational areas/facilities
- Landscaping
- Masonry
- Mobile automobile or other vehicle washing
- Mobile carpet, drape, or furniture cleaning
- Nurseries and greenhouses
- Painting and coating
- Pest control services
- Pool and fountain cleaning
- Portable sanitary services
- Power washing services
- Retail or wholesale fueling

#### **9.1.2. INDUSTRIAL FACILITY INSPECTIONS AND ENFORCEMENT**

Objective: To minimize impacts from industrial storm water discharges by inspecting and enforcing the implementation and ongoing compliance with required storm water control measures.

Permit Requirements: 4.3.3., 4.3.3.1., 4.3.3.2., 4.3.4., 4.3.4.1., 4.3.3.4.2., 4.3.5., & 4.3.6. - Industrial and High-Risk Runoff

Description: Salt Lake City will continue to conduct inspections of industrial facilities to ensure all MSGP requirements are being completed, with appropriate enforcement procedures for permittees non-compliance. The following BMPs and procedures have been designed to meet 2021 Permit requirements for this program component, and will continue to be implemented:

**BMP 44:** Continue to obtain and review SWPPPs for construction projects and industrial facilities.

*Industrial Facility Inspections:* Salt Lake City will continue to track and inspect all MSGP/NEC industrial facilities to ensure that they are inspected at least once during the permit term, if MSGP, or monitored at least once during the permit cycle to confirm the no exposure status has not changed, if an NEC. High priority facilities may be inspected more frequently as needed. Inspections are scheduled, tracked, and updated in a database that is maintained by the SWQ Program. Priority inspections may be prompted by expired and new State MSGP permits, or as a result of the prioritization process for industrial facilities.

As per Section 4.3.4.2. of the 2021 Permit, industrial regulatory inspections shall include, at a minimum:

- Evaluation of the facility's compliance with 4.3.2. of the 2021 Permit requirements to select, design, install, and implement storm water control measures.
- Conducting a visual observation for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to storm water.
- Verification of whether the facility is required to be authorized under the UPDES MSGP for Storm water Discharges Associated with Industrial Activities and whether the facility has in fact obtained such permit coverage.



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- Require the facilities to select, install, implement, and maintain storm water control measures as necessary to minimize storm water pollution. (Industrial and commercial facilities that discharge into impaired water bodies may need to implement additional controls as necessary to prevent the discharge of pollutants of concern.)
- Evaluation of the facility's compliance with any other relevant local storm water requirements.

Inspections will be documented and tracked to identify problem areas and to ensure these activities are conducted at the proper frequency. As per the 2021 permit, documentation will include the following information when applicable:

- The inspection date and time;
- The name(s) and signature(s) of the inspectors;
- Weather information and a description of any discharges occurring at the time of the inspection;
- Any previously unidentified discharges of pollutants from the site;
- Any control measures needing maintenance or repairs;
- Any failed control measures that need replacement;
- Any incidents of noncompliance observed; and
- Any additional control measures needed to comply with the permit

*Follow up Inspections and Enforcement:* Salt Lake City will conduct follow up inspections and enforcement activities as necessary to ensure storm water quality control measures are implemented and permit requirements are met. These records will be documented and maintained by the City. Escalating enforcement capabilities that will be implemented, include: Single Event Violation (SEV) Fines for non-compliance, which provides for an increasing fine for each additional offense of a given SEV code, and escalating administrative enforcement actions in accordance with Salt Lake City Ordinances and the Utah Water Quality Act Civil Penalty Determination Flowchart for continued non-compliance or egregious violations.

### **9.1.3. EMPLOYEE TRAINING**

Objective: Provide training to applicable employees to ensure inspections are conducted and documented properly and permit requirements are met.

Permit Requirements: 4.3.7 – Industrial and High-Risk Runoff

Description: Salt Lake City will provide training opportunities to personnel whose job duties include implementation of the *Industrial and High-Risk Runoff* Program. Training shall include requirements of the MSGP for discharges associated with industrial activities or other local requirements, site inspection and documentation protocols, and enforcement procedures. New Hire employees will be trained within 60-days of hire, and will receive annual refreshers and program updates, as well as on-the-job training, and will attend other training opportunities as available. All applicable training records shall be documented.

## **9.2. STAFFING AND RESOURCE ALLOCATIONS**

This program is implemented by SWQ staff. SWQ Program Coordinators manage the database of industrial facilities and permits, and document compliance through inspection of UPDES permitted facilities. In addition to the Industrial Runoff program, the coordinators will implement a program to educate targeted “High-Risk Commercial” businesses. A business licenses list is provided by the Business Licensing Division of the Finance Department and is used to identify businesses that may be prioritized for targeted education. The SLCDPU GIS division has a dedicated FTE who manages a database of

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private post-construction controls within the City. The database includes parcel ownership information for many of the industrial and high-risk facilities which are helpful in site assessments and providing contact information at a particular site. The SLCDPU Pretreatment Program monitors similar Industrial and High-Risk facilities and is a valuable resource in assisting in identifying potential High-Risk commercial or industrial facilities which may apply to this program. With assistance from the GIS and Pretreatment programs, the City maintains several databases of Industrial and Commercial businesses within Salt Lake City. Also, SLCoHD Food Inspectors check food-related establishments for potential storm water quality issues and report these to the City's SWQ Coordinators for the Industrial and High-Risk program.

### 9.3. IMPLEMENTATION STATUS

The implementation status for these BMPs is to be implemented and assessed during the permit term and are presented in **Table 9.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

**Table 9.1 Implementation Status for Industrial/High-Risk Runoff Program**

Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 36:</b> Educate the public on nitrogen and phosphorus pollution sources, water quality impacts, and solutions/controls.	To have a program educates the public on the impacts, sources, and solutions of Nitrogen and Phosphorus pollution; and to alter behaviors that have the potential to negatively impact water quality.	The measurement for this BMP is the number of water quality outreach efforts (events, mailers, ads, social media posts, etc.) that target Nitrogen and Phosphorus pollution.	SLCDPU SWQ Program; SLCo Stormwater Coalition
x	x	x	x	x	<b>BMP 39:</b> Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.	To have an industrial users database available with Section 313 of Title III of the 1986 (SARA) chemicals or heavy polluters for tracking purposes.	The measurement for this database is an updated database record that is available when a pollutant is detected and traced back to the source as a result of the database	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 40:</b> Identify and Prioritize industrial and priority commercial groups for inspections and education.	To identify and prioritize industrial and priority commercial facilities based on sites/sources that pose the greatest threat to water quality, and to provide them with relevant educational materials to promote best practices to prevent storm water pollution.	The Measurement of this BMP will be the amount of facilities identified and listed in the industrial and priority commercial inventory, as well as the number of targeted groups that receive educational material about their roles in protecting water quality.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 41:</b> Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.	To have a full time position available to work with the public and industries to minimize the pollutants released to the Salt Lake City storm sewer system.	The measurement for this BMP is staffing the positions	SLCDPU
x	x	x	x	x	<b>BMP 42:</b> Distribute water quality education materials to Industrial and priority commercial facilities.	To provide information to target industrial groups with BMPs regarding water quality, including notifying the industrial facilities of the compliance requirements of the State General Industrial Storm Water Permit.	The measurement of this BMP is the number of target industrial groups that are provided with water quality materials and State/City Industrial Storm Water Permit.	SLCDPU SWQ Program

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x	x	x	x	x	<b>BMP 44:</b> Continue to obtain and review SWPPPs for construction projects and industrial facilities.	To obtain SWPPPs prepared by operators on all permitted sites in Salt Lake City.	The measurement for this BMP is the number of construction sites which meet the greater than 1-acre criteria, and or part of a common plan of development or sale that have developed and implemented a SWPPP.	SLCDPU Storm Water Quality, and Engineering Division (Development Review Services)
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(x) Indicates year to be implemented or describes an on-going BMP

## 10.0. MONITORING, RECORDKEEPING, AND REPORTING (Permit §5.0.)

Monitoring is an integral part of storm water management, as the findings and data can be used to assess the City's MS4 and the effectiveness of the program, as well as potentially serve to identify trends and priority areas. Recordkeeping and documentation of the SWMP and storm water management will continue to be implemented and the Annual Report will serve to assess and report yearly findings and activities of the storm water program. Monitoring, recordkeeping, and reporting will be done in accordance with the 2021 Permit.

### 10.1. DESCRIPTIONS & BMPs

The City will continue to implement wet weather monitoring and dry weather screening. Wet weather monitoring serves to identify pollutants and their concentrations during qualified storm events. The dry weather screening program will complement the IDDE program and serves to identify outfalls, as well as illicit connections and discharges during dry weather periods. Recordkeeping will be integrated with all aspects of the SWMP as required by the 2021 Permit, as well as the Annual Report. This section will detail those programs and BMPs to be implemented by Salt Lake City. Progress towards the measurable goals will be documented in the Annual Report.

#### 10.1.1. MONITORING (Permit §5.2.)

**Objective:** To gather data that are representative of Salt Lake City's storm water quality and to identify outfalls and any illicit connections and discharges.

**Permit Requirement:** Part 5.2.1., 5.2.1.1., 5.2.1.2., 5.2.1.3., 5.2.1.4., 5.2.1.5., 5.2.2., 5.2.2.1., 5.2.2.2., 5.2.2.3., 5.2.2.4., 5.2.2.5., 5.2.2.6., 5.2.2.6.1., 5.2.2.6.2., 5.2.2.6.3., 5.2.2.6.4., 5.2.2.7., 5.2.2.8., 5.2.3., and 5.2.3.1 – Monitoring, Recordkeeping, and Reporting

**Description:** Continue wet weather monitoring, dry weather screening, and provide employee training for monitoring programs. The following

**BMP 32:** Investigate dry weather flows.

*Wet Weather Monitoring:* Sampling of discharges during wet weather is done in accordance with the Wet Weather Monitoring SOP that is provided in **Appendix D** of this SWMP. Sampling is conducted twice per year – once in the spring and once in the fall – at three representative monitoring locations. Each location represents specific land use categories that reflect the diversity of land-uses in Salt Lake City, are as follows (See **Figures 3, 4, and 5** for maps of these contributing drainage areas):

- JOR 8.32: Located at 900 South at Gale Street represents mixed land use (commercial, residential, and light industrial).
- MIL 2.60: Located at the Forest Dale golf course represents residential land use.
- LED 1.87: Located at 5500 West on the Lee Drain represents industrial land use.

To accomplish this monitoring plan, the City maintains monitoring equipment for measuring flow, level, and rain, as well as automatic samplers that collect samples through the duration of the storm event. This equipment is deployed during the Spring and Fall seasons approximately 24 hours prior to forecasted qualifying storm events. The monitoring units are programmed to track changes in flow, rain, and level, and then to trigger an alert system that is designed to ensure that staff is able to capture the most representative characteristics of the rain event, through telemetry and continuous data logging, as well as ensuring that staff arrives on-time to collect a grab sample

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within 30 minutes of the beginning of the runoff period of the forecasted rain event, which is representative of the “first flush” of any pollutants that are present on the landscape or in surface water detention/retention areas. As soon as the programmed trigger point occurs, the automatic sampling units then begin sampling runoff for water quality at specified volume intervals to capture the duration of the storm.

Grab samples are taken at each station on the rising limb of the hydrograph and analyzed for pH, Dissolved Organic Carbon, Total Organic Carbon, Total Suspended Solids, Volatile Suspended Solids, Oil and Grease, and Total Cyanide. An automatic sampler continues to sample at each location throughout the storm event. When the runoff ceases, or when flow returns to approximate normal base flow, the sample bottles are collected. This sample is then composited based on flow rate and total volume and taken to a certified laboratory for analysis of the samples collected. The composite sample is analyzed for the following parameters:

- pH
- Biochemical Oxygen Demand (BOD)
- Total Hardness
- Total Nitrogen
- Dissolved Nitrogen
- Dissolved Kjeldahl Nitrogen
- Nitrate as N
- Nitrite as N
- Dissolved Phosphorus
- Total Phosphorus
- Total Dissolved Solids
- Total Suspended Solids
- Metals:
  - Total Cadmium
  - Total Calcium
  - Total Lead
  - Total Magnesium
  - Total Mercury
  - Total Selenium
  - Total Zinc

During the storm event, field measurements of pH and temperature are taken at each sampling site. In addition, general observations such as rain gauge reading, flow level and rate reading, and status of equipment are recorded by the automatic sampler. Data collected from Wet Weather Monitoring is used to estimate annual cumulative pollutant loadings from the MS4, event mean concentrations of pollutants in discharges from major outfalls, identification and prioritization of portions of the MS4 requiring additional controls, and identifying water quality improvements or degradation. Storm event data is recorded in accordance with 5.2.2.7. of the 2021 MS4 Permit and includes: the date and duration (hours) of the storm event, the duration between the storm event sampled and the end of the previous measurable (>0.2 inch) rain event, and an estimate of the total volume (in gallons) of the discharge sampled. These are reported in the Annual Report. If the City is unable to collect samples for a given discharge, or no qualifying storm materializes, a description of the contributing factors is summarized and submitted in the Annual Report.

*Dry Weather Screening:* Dry weather screening will be complemented by the IDDE program (Section 5.1.3. of the SWMP) and will serve to identify and map known outfalls while looking to recognize any illicit discharges during dry weather periods. Salt Lake City will screen all known

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outfalls at least once during the permit term, with additional monitoring of Priority Areas, in accordance with part 4.2.3.3.1 and 4.2.3.3.2. of the 2021 Permit.

Any modifications to the dry or wet weather monitoring programs will be submitted to DWQ for approval.

*Employee Training:* Salt Lake City will ensure personnel responsible for conducting wet weather monitoring and dry weather screening are adequately trained. Training will include proper sampling techniques and completion of Chain-of-Custody forms and will be tracked, documented, and reported in the Annual Report.

#### **10.1.2. RECORDKEEPING (Permit §5.3.)**

**Objective:** To document and record all applicable activities in the SWMP and Storm Water Quality Program.

**Permit Requirement:** Part 5.3.1, 5.3.2., 5.3.3., 5.3.4., 5.3.5. – Monitoring, Recordkeeping and Reporting

**Description:** Recordkeeping is a significant component of the SWMP and the Storm Water Quality Program. The City will record and retain all required documents set forth in the 2021 Permit, including: plans, records of all programs, and all records of all monitoring information. These records shall be retained for at least five years.

**BMP 08:** Track drainage system maintenance using Cityworks® system.

**BMP 24:** Maintain records of all illicit connection investigations and enforcement.

**BMP 39:** Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.

**BMP 44:** Continue to obtain and review SWPPPs for construction projects and industrial facilities.

#### **10.1.3. REPORTING (Permit §5.4.)**

**Objective:** Provide reporting to summarize and evaluate information to improve the SWMP and Storm Water Quality Program as necessary.

**Permit Requirement:** Part 5.4.1, 5.4.2., 5.4.3., 5.4.4., and 5.4.5. – Monitoring, Recordkeeping and Reporting  
Part 4.5 – Reviewing and Updating Storm Water Management Programs

**Description:** Salt Lake City will continue to provide annual reporting, and comprehensive wet weather monitoring data analysis, as required by the 2021 Permit. The SWMP shall be reviewed and updated as necessary and all modifications made with approval of DWQ.

*Annual Report:* Salt Lake City shall submit an annual report to DWQ by October 1 every year within the permit term detailing the activities from July 1- June 30 related to the SWMP and the 2021 Permit. This report will be signed in accordance with Part 6.8 of the 2021 Permit.

*Comprehensive Water Quality Report:* Salt Lake City will submit a comprehensive wet weather monitoring report, which includes historic data, identified trends, and conclusions; this report will

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be submitted with the MS4 Permit renewal application 180 days prior to the expiration of the permit, as required in part 2.0. of the 2021 Permit.

*SWMP Update, Review, and Modifications (§5.4.2.1):* Salt Lake City shall conduct a review of the SWMP annually during the development of the Annual Report. The SWMP is meant to be a dynamic document and may change during the permit cycle; any modifications to the SWMP will be submitted to DWQ in accordance with Part 4.5 of the 2021 Permit.

## 10.2. STAFFING AND RESOURCE ALLOCATIONS

*Monitoring, Recordkeeping, and Reporting* are mainly conducted by the SWQ Program and are overseen by the SWQ Program Manager. Other City departments, divisions, and entities play an important role in the City's SWQ Program, and they provide documentation that is reported in the Annual Report which is compiled by SWQ staff.

## 10.3. IMPLEMENTATION STATUS

Measurable goals for these BMPs are to be implemented and assessed during the permit term are presented in **Table 10.1**. The purpose of measurable goals is to gauge permit compliance and program effectiveness following the schedule identified.

**Table 10.1 Implementation Status for Storm Water Monitoring, Recordkeeping, & Reporting Program**

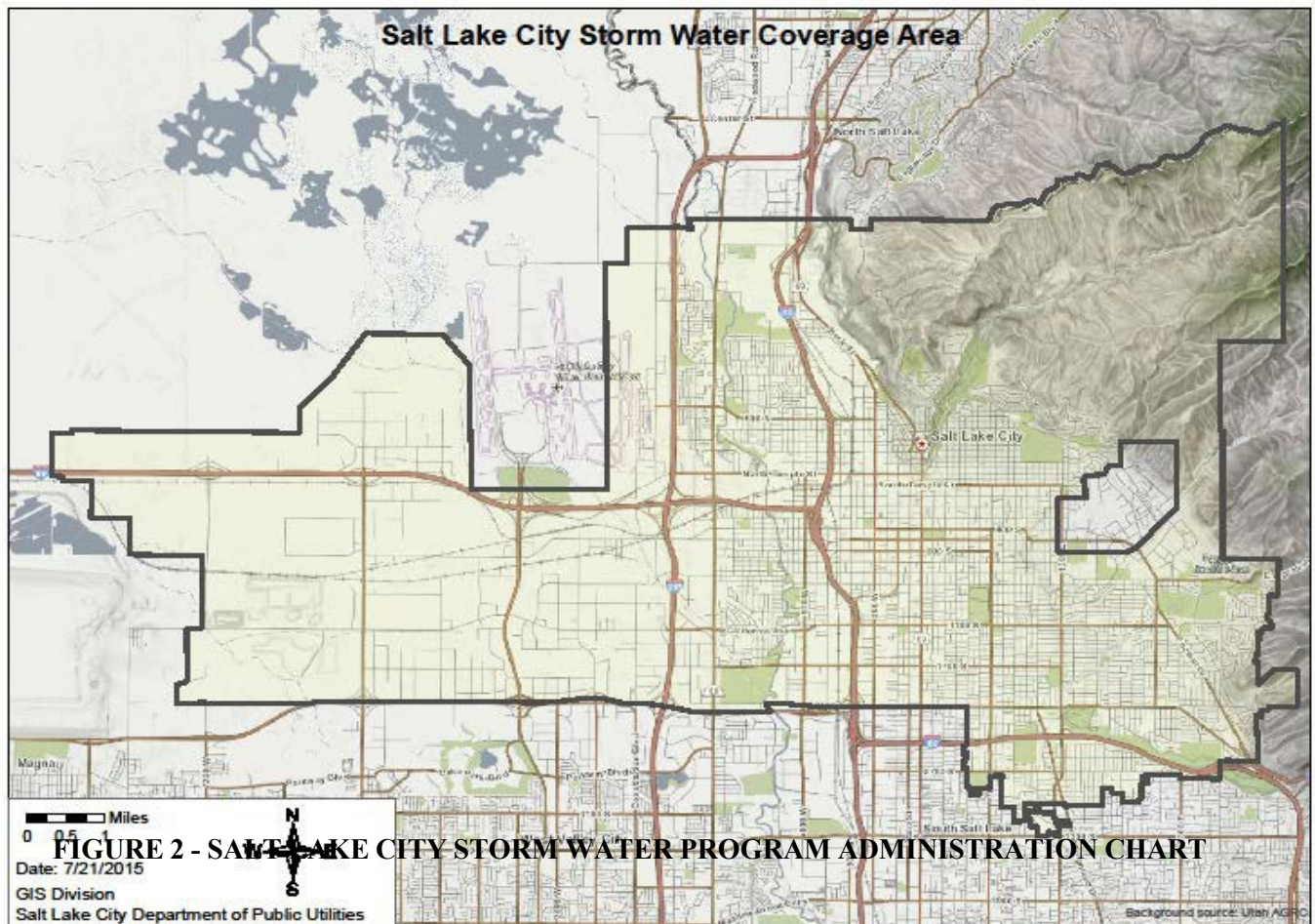
Schedule					BMP	Goal	Measurement	Responsibility
Permit Year								
1	2	3	4	5				
x	x	x	x	x	<b>BMP 08:</b> Track drainage system maintenance using Cityworks® system.	To document and track system maintenance, with the computerized work order system. (Cityworks®). This documentation will be used to keep track of maintenance activity on each structural feature of the Salt Lake City system and provide information for future maintenance activities	The measurement for this BMP is the work performed on the storm drainage system. The number of work orders assigned and the repairs and/or replacements to portions of the drainage system to ensure the systems are clean and function properly.	SLCDPU Storm Sewer Maintenance Program, and GIS
x	x	x	x	x	<b>BMP 24:</b> Maintain records of all illicit connection investigations and enforcement.	The goal of this BMP is to have records and a database of all illicit connections, their enforcement, and resolution for future reference.	The measurement of this BMP is the number of illicit connection investigations and their resolutions.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 32:</b> Investigate dry weather flows.	To Dry Weather Screen the MS4 flows to systematically investigate and remove illicit flows.	The measurement used for this BMP is the portion of the MS4 monitored, and the illicit discharges removed.	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 39:</b> Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.	To have an industrial users database available with Section 313 of Title III of the 1986 (SARA) chemicals or heavy pollutants for tracking purposes.	The measurement for this database is an updated database record that is available when a pollutant is detected and traced back to the source as a result of the database	SLCDPU SWQ Program
x	x	x	x	x	<b>BMP 44:</b> Continue to obtain and review SWPPPs for construction projects and industrial facilities.	To obtain SWPPPs prepared by operators on all permitted sites in Salt Lake City.	The measurement for this BMP is the number of construction sites that meet the greater than 1-acre criteria, and or part of a common plan of development or sale that have developed and implemented an SWPPP.	SLCDPU Storm Water Quality, and Engineering Division (Development Review Services)

(x) Indicates year to be implemented or describes an on-going BMP



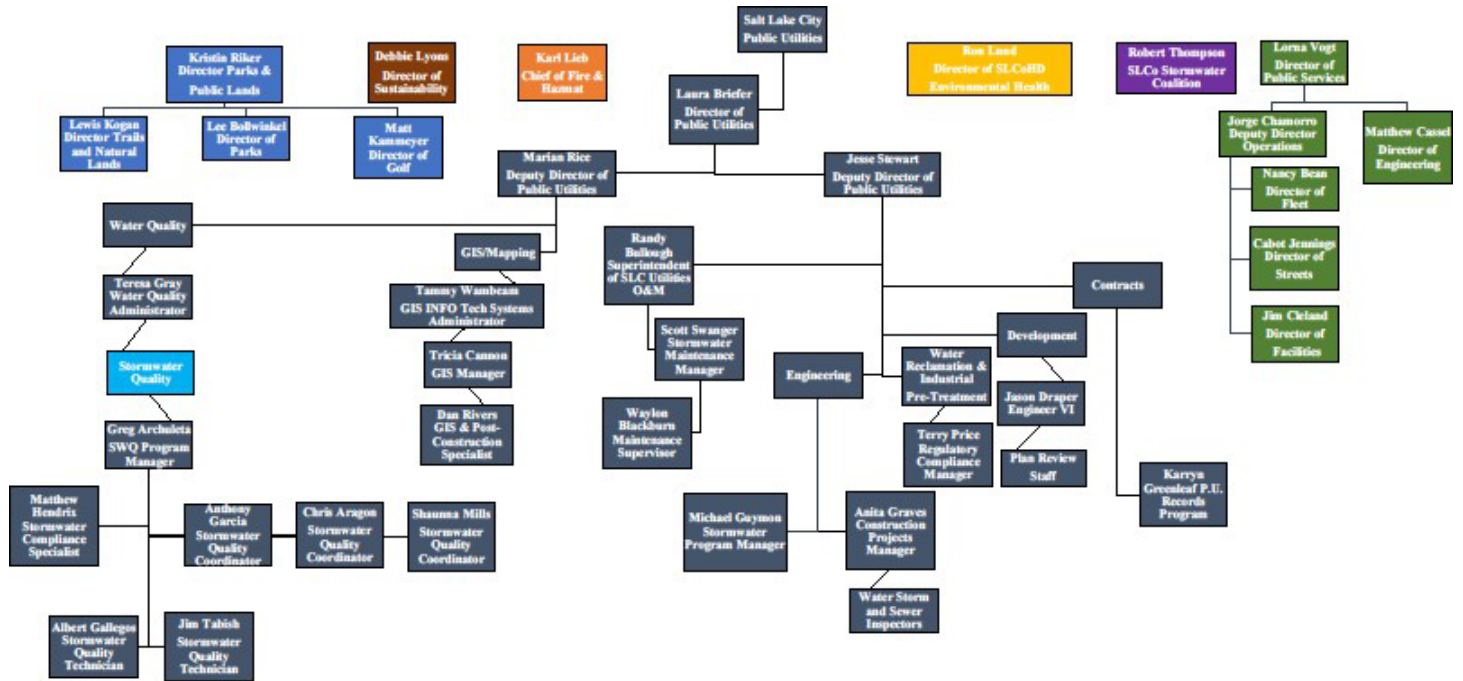
SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**FIGURE 1- Vicinity Map**



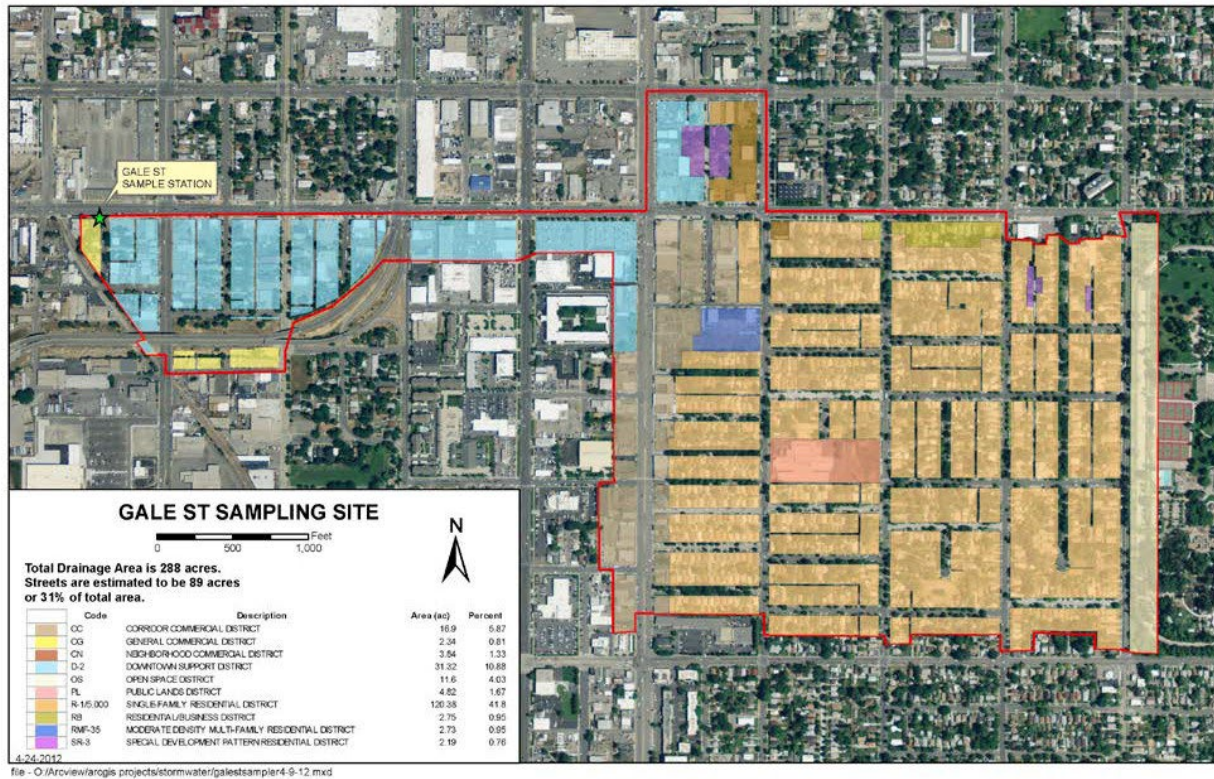
SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
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**FIGURE 2 - CITY STORM WATER PROGRAM ORGANIZATION CHART**



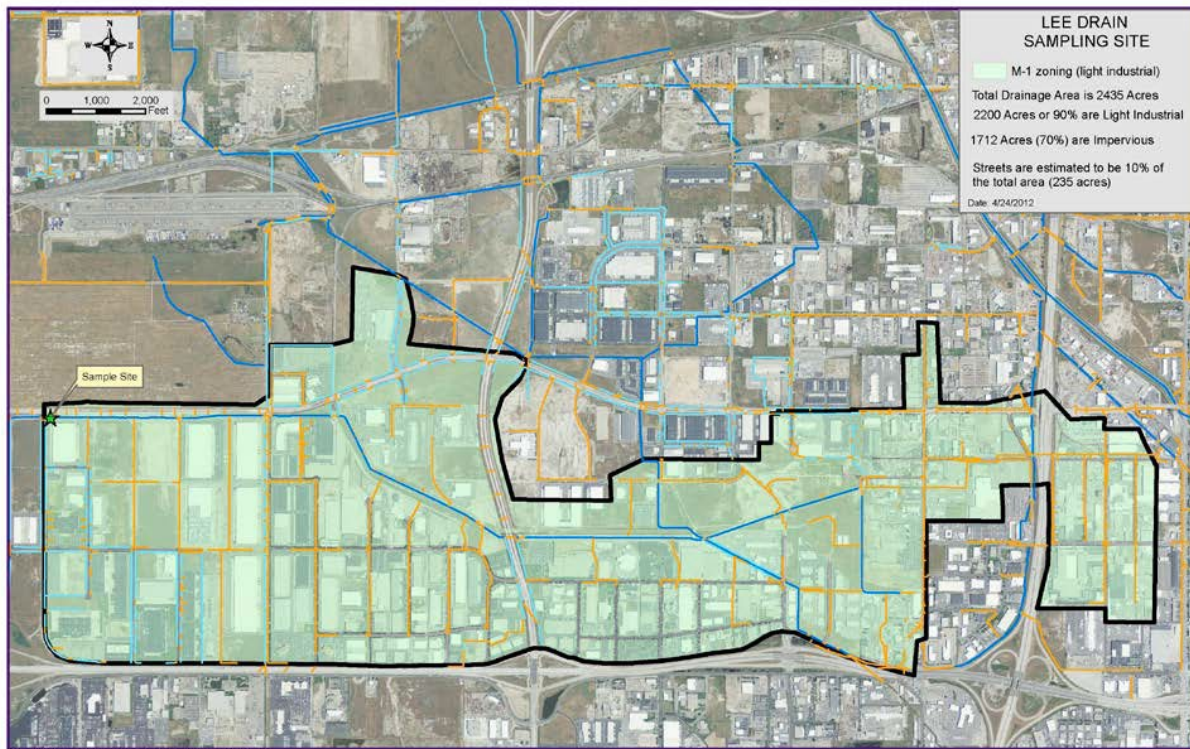
SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**FIGURE 3 - WET WEATHER MONITORING: GALE STREET DRAINAGE BASIN MAP (JOR 8.32)**



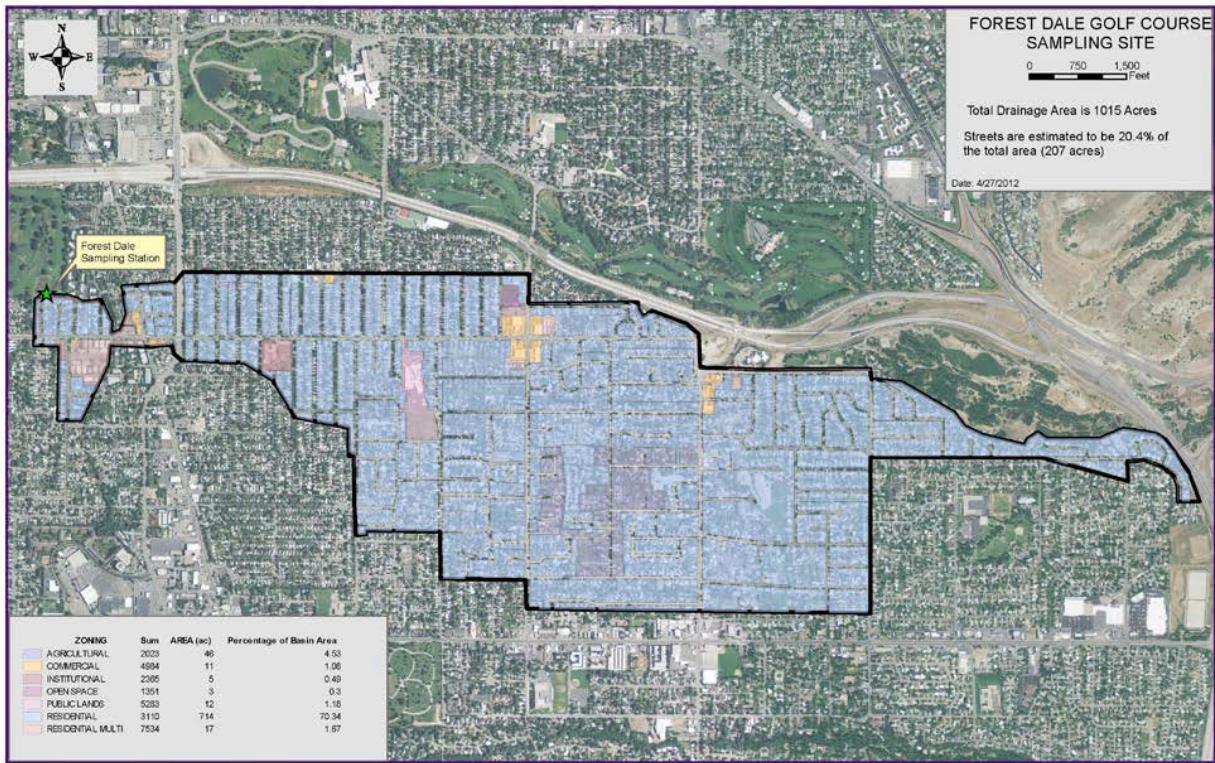


**FIGURE 4 - WET WEATHER MONITORING: LEE DRAIN DRAINAGE BASIN MAP (LED 1.87)**



SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
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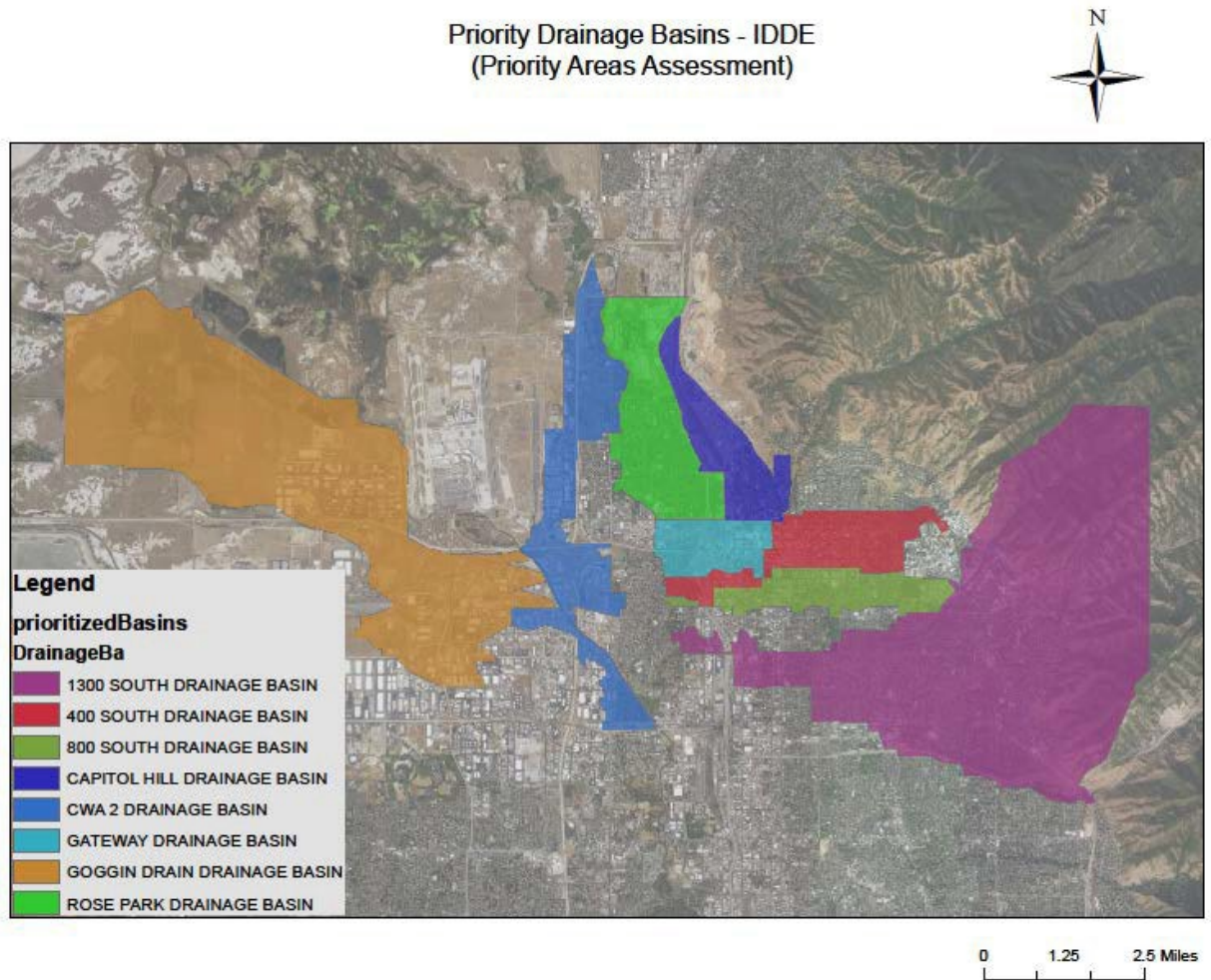
**FIGURE 5 - WET WEATHER MONITORING: FOREST DALE BASIN MAP (MIL 2.60)**





SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

FIGURE 6 – PRIORITY AREAS (DRAINAGE BASINS) MAP



## **APPENDIX A – MOU Between Salt Lake City and Salt Lake County Health Department**



**MEMORANDUM OF UNDERSTANDING**  
**between**  
**SALT LAKE COUNTY**  
**on behalf of its Salt Lake County Health Department**  
**and**  
**SALT LAKE CITY**  
**on behalf of its Public Utilities Department**

**RECORDED**  
NOV 09 2015  
CRRY RECORDER

This Memorandum of Understanding ("MOU") is entered into this 10<sup>th</sup> day of October, 2015 between Salt Lake County ("County") on behalf of its Salt Lake County Health Department ("SLCoHD") and Salt Lake City ("City") on behalf of its Department of Public Utilities ("Public Utilities"). The County and City are sometimes jointly referred to hereinafter as the "Parties." The purpose of the MOU is to memorialize, clarify, define and describe the cooperative efforts of the Parties as described below.

**RECITALS:**

Whereas, the Parties are both governmental entities as defined under the Utah Interlocal Cooperation Act, (the "Act") Utah Code Ann. §§ 11-13-101 et seq. and are authorized under the Act to enter into this MOU; and

WHEREAS, the Salt Lake County Health Department is organized as a "county" health department and exists pursuant to Utah Code Ann. §26A-1-103, and Chapter 9.04 of the Salt Lake County Code of Ordinances; and

WHEREAS, the SLCoHD is responsible for enforcing state laws, administrative rules, local ordinances, standards and regulations relating to public health, sanitation, safety, and environmental quality as provided for in the Utah Local Health Department Act, Utah Code Ann. §26A-1-114; and

WHEREAS, pursuant to §26A-1-114(1), the SLCoHD may enforce state laws, local ordinances, department rules and local health department standards and regulations in all incorporated and unincorporated areas of Salt Lake County; and

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WHEREAS, the SLCoHD has adopted health regulations including Health Regulation #13, "Wastewater Disposal Regulation" which prohibits the discharge or release of pollutants or contaminants into storm sewers, drains, gutters or waters of the state; and

WHEREAS, Health Regulation #13 is incorporated by reference in Section 9.32.010 of the Salt Lake County Code of Ordinances; and

WHEREAS, Utah Code Ann. §17-8-5 provides that the county legislative body may promulgate regulations to protect channels, storm sewers, and drains, and may provide for the enforcement of those regulations; and

WHEREAS, Salt Lake City has adopted Section 17.84.100 of the Salt Lake City Code of Ordinances which makes it unlawful to: A. Make any discharge for which a discharge permit is required, without first obtaining a discharge permit; B. Make any discharge under a discharge permit in violation of the terms and conditions of such discharge permit, or otherwise violate the terms and conditions of a discharge permit; or C. Construct, use, maintain or allow to remain in place an illicit connection, whether or not the connection was permissible under law or practices applicable or prevailing at the time of connection; and

WHEREAS, Salt Lake City has enacted Section 17.84.200 of the Salt Lake City Code of Ordinances which requires: Any person conducting an activity which can reasonably be anticipated to create the risk of a prohibited discharge shall provide adequate protection against accidental discharge through the use of structural and nonstructural Best Management Practices ("BMPs"). Such BMPs include, but are not limited to: a) Implementing procedures or practices which tend to reduce the likelihood of an accidental discharge, and b) Installing structures or facilities designed to prevent such accidental discharge. BMPs to prevent an accidental discharge shall be provided and maintained at the person's own cost and expense. Failure to provide or maintain such BMPs, or any discharge resulting from such failure, shall be considered a violation of this chapter; and

WHEREAS, Section 1.12.050 of the Salt Lake County Code of Ordinances provides that the violation of any provisions of an ordinance constitutes a Class B Misdemeanor; and

WHEREAS, Utah Code Ann. §26A-1-120(3)(a) of the Utah Local Health Department Act provides that the district attorney shall prosecute criminal violations of the public health laws and rules of the departments of health and environmental quality; and

WHEREAS, the Parties wish to enter into this MOU to formalize the procedure for the enforcement of the applicable statutes, ordinances and health regulations to protect water quality.

**NOW**, THEREFORE, in consideration of the following mutual promises, terms and conditions, it is agreed by the Parties as follows:

1. RESPONSIBILITIES OF THE SLCoHD.

1.1 The SLCoHD's Environmental Health Division is responsible for investigating incidents involving spills, releases or the discharge of pollutants, contaminants, or wastes into waterways and drainage systems.

1.2 The SLCoHD will respond to any reports from Public Utilities regarding spills, releases or the discharge of pollutants, contaminants or wastes in gutters, storm drains and flood control facilities. The SLCoHD will also report to Public Utilities any complaints received or violations discovered by the SLCoHD's personnel.

1.3 The SLCoHD will provide an annual report to Public Utilities that includes the status of the complaints and actions taken in response to complaints in the unincorporated county.

1.4 The health regulations adopted by the Salt Lake County Board of Health, pursuant to Section 9.04.060 of the Salt Lake County Code of Ordinances, contain procedures to

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enforce violations through civil administrative or criminal proceedings depending upon the severity of the violation.

1.5 Based on the foregoing legal authority, the SLCoHD will initiate appropriate enforcement actions to compel compliance with the regulations or pursue sanctions for violations as required by the City's UPDES storm water discharge permit.

1.6 Copies of Warning Letters and Notices of Violations issued for stormwater discharges in Salt Lake City will be sent to the attention of the Water Quality and Treatment Administrator, Salt Lake City Public Utilities at 1530 South West Temple, Salt Lake City, Utah 84105.

1.7 The SLCoHD provides household hazardous waste facilities to all citizens of incorporated and unincorporated Salt Lake County. Services may also include mailers, ads, and collection events. Businesses are allowed to dispose of certain hazardous wastes at these facilities for a fee. To the extent possible, such facilities will be provided within the boundaries of the City.

## 2. RESPONSIBILITIES OF PUBLIC UTILITIES.

2.1 Public Utilities will report to the SLCoHD incidents involving spills, releases or the discharge of pollutants, contaminants, or wastes into gutters and storm drains covered by the UPDES storm water permit. Incidents will be reported as soon as practicable by telephone to the SLCoHD 24-hour hotline at (801) 580-6681 or during business hours to SLCoHD's Bureau of Water Quality office at (385) 468-3862.

2.2 Public Utilities will cooperate with the SLCoHD in any investigation or enforcement action initiated by SLCoHD. Cooperation that Public Utilities may provide include, but is not limited to, information regarding permits, storm water system maps, dye testing, and recommendations for the extent of clean-up in the storm water system.

2.3 Public Utilities will handle Storm Water Pollution Prevention Permit approvals and enforcement related to violations of the approved permit. The SLCoHD will investigate illicit discharges entering the storm drain system.

2.4 Public Utilities will carry out the construction and post construction regulatory activities related to storm water engineering controls. Regulatory activities related to this include, but not limited to, plan approvals, installation inspections, post construction inspections, management -expectations and maintenance of required engineered controls.

2.5 Public Utilities will report to the SLCoHD any spills, illicit connections, releases or the discharge of pollutants, contaminants, or wastes into waterways and drainage systems that are identified through dry weather and wet weather screenings.

3. COORDINATION. Representatives of the Parties will participate in the investigation and enforcement of alleged violations of health regulations, rules and ordinances to protect storm sewers and drains as required by the City's UPDES storm water discharge permit. In addition, the Parties will confer to determine an appropriate legal remedy on a case-by-case basis, including administrative, civil and criminal actions.
4. TRAINING. The Parties agree to pursue training resources with the goal of improving water quality, environmental enforcement, public awareness, and compliance.
5. REPRESENTATIVES. The parties designate the following representatives (and their successors) to administer this MOU and for the purposes of written notice:

SLCoHD:  
Gary L. Edwards, Executive Director  
Salt Lake County Health Department  
2001 South State Street #S2500  
Salt Lake City, Utah 84190  
(385) 468-4117

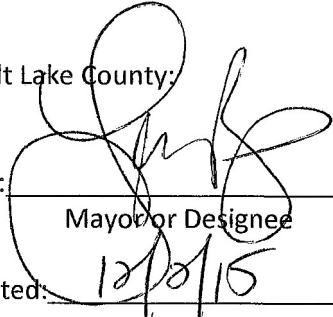
Public Utilities:  
Jeffrey T. Niermeyer, Director  
Salt Lake City Public Utilities  
1530 South West Temple  
Salt Lake City, Utah 84105  
(801) 483-6900

6. EFFECTIVE DATE. The effective date shall be the date the Parties sign the MOU and shall continue in effect until terminated by either party giving six months written notice to the designated representative of the other party.
7. NOTICES. Any notice required hereunder shall be deemed given, if in writing to the Parties designated representatives identified in paragraph 5 herein.
8. AMENDMENT. The parties may amend this MOU by a writing executed by the parties. No amendment shall be effective if it is not in writing or if it is not executed by all the Parties.
9. ENTIRE AGREEMENT. This MOU contains the entire agreement between the Parties and no statements, promises or inducements not contained in this MOU shall be binding or valid.
10. NO AGENCY. The Officers, employees, representatives or agents of each Party shall not be deemed to be the agents of the other Party.
11. GOVERNMENTAL IMMUNITY. County and City are both governmental entities subject to the Utah Governmental Immunity Act ("Act"), Utah Code Ann. §§ 63G-7-101, et. seq. (1953, as amended). Consistent with the waivers and retentions of immunity found in the Act which apply to all functions of government, no matter how labeled, the parties agree that each party is responsible for, and shall indemnify the other party from, its own acts which it commits or which are committed by its own officers, employees or agents. By entering into this MOU, neither party waives any defenses otherwise available under the provisions of the Act.

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P.O. BOX 145515  
SALT LAKE CITY, UTAH 84111-0515



IN WITNESS WHEREOF, the Parties execute this Memorandum of Understanding the day and year recited above.

Salt Lake County:  
By:   
Mayor or Designee  
Dated: 12/20/15

APPROVED BY:

Salt Lake County Health Department

•  
\_\_\_\_\_  
Executive Director

Dated: 7/15/15

APPROVED AS TO FORM:

■

■

\_\_\_\_\_  
Melanie F. Mitchell  
Deputy District Attorney

Dated: 12/20/15 ic&c 12/20/15

Salt Lake City:

**BY:** \_\_\_\_\_  
Mayor or Designee

**rv**

Dated: **11/03/2015**

APPROVED BY:

**Jeff T. Niermeyer**  
Jeff T. Niermeyer  
Salt Lake City Public Works Department

Dated: \_\_\_\_\_

Salt Lake City Attorney's Office

By: **E. Russell Vetter**  
E. Russell Vetter  
Senior City Attorney

Dated: **11/3/2015**

ATTEST:  
**Julie M. Ward**  
CITY CLERK

RECORDED  
NOV 09 2015  
CITY RECORDER



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SALT LAKE CITY, UTAH 84114M5515

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX B – Salt Lake City Storm Water and Riparian Ordinance**

## DIVISION III. STORMWATER SEWER SYSTEM

### CHAPTER 17.75

#### GENERAL PROVISIONS

##### SECTION:

##### **17.75.100: Short Title**

##### **17.75.200: Findings And Purposes**

##### **17.75.300: Authority**

##### **17.75.400: Responsibility For Administration**

##### **17.75.100: SHORT TITLE:**

This division shall be known collectively as the *SALT LAKE CITY STORMWATER CONTROL ORDINANCE*. (Ord. 53-07 § 4, 2007)

##### **17.75.200: FINDINGS AND PURPOSES:**

A. Findings On Stormwater Runoff Harm: The city council finds that stormwater runoff has the potential for causing property damage and erosion; carrying concentrations of nutrients, chemicals, heavy metals, oil and toxic materials into receiving waters and ground water; degrading the integrity of city streets, curbs, gutters and other infrastructure; reducing residents' access to emergency services; and imposing other hazards to both life and property. For these and other reasons, stormwater runoff has the potential for adversely impacting the health, safety, property, recreational opportunities and general welfare of the community. The city council has determined that the potential for such negative impacts will increase as the amount of stormwater runoff increases due to the city's physical growth and urban development.

B. State And Federal Regulation: The federal government has established, through the clean water act, regulations regarding stormwater runoff for the protection of receiving waters. The state of Utah has also enacted the water quality act, together with related regulations. These federal and state laws and regulations are administered through the Utah department of environmental quality and include requirements that the city obtain, and abide by the provisions of, a UPDES permit for the city's discharge of stormwater runoff into receiving waters.

C. Purposes And Objectives: In view of the foregoing, the purposes and objectives of this chapter through chapter 17.91, inclusive, of this title are to:

1. Provide for and maintain a stormwater sewer system for collecting and disposing of stormwater runoff;
2. Establish the inspection, surveillance and monitoring procedures, and all related rules and regulations, necessary to regulate discharges into the stormwater sewer system, and to establish the legal authority to enforce compliance with such rules and regulations; and
3. Provide fair, equitable and nondiscriminatory rates and charges which will generate sufficient revenues to construct, operate, improve and maintain the stormwater sewer system at a level commensurate with stormwater sewer management needs. It shall be the policy of the city that present and future costs of operating the stormwater sewer system shall be fairly allocated among the various users of the stormwater sewer system through the establishment of rates and charges based upon such factors as the intensity of development of the parcel; the types of development on the parcel; the amount of impervious surface on the parcel; the cost of maintenance, operation, repair and improvements of the various parts of the system; the quantity and quality of the runoff generated; and other factors which present a reasonable basis for distinction, and which will allow for management of the stormwater sewer system in a manner that protects the public health, safety and welfare. (Ord. 53-07 § 5, 2007)

##### **17.75.300: AUTHORITY:**

This chapter through chapter 17.91, inclusive, of this title is adopted under the authority of the Utah water quality act, the federal clean water act and the rules and regulations promulgated thereunder relating to stormwater discharges, as well as certain requirements set forth in the city's UPDES permit for stormwater discharges, issued by the Utah department of environmental quality. Specifically, section 19-5-115(10), Utah Code Annotated, authorizes the city to enact and enforce rules and ordinances for the implementation of the water quality act, including stormwater discharges. (Ord. 53-07 § 6, 2007)

##### **17.75.400: RESPONSIBILITY FOR ADMINISTRATION:**

The director shall be responsible for administering, implementing, and enforcing the provisions of this chapter through chapter 17.91, inclusive, of this title. Any powers granted or duties imposed upon the director may be delegated by the director to persons in the employ of the city and under the supervision of the director. (Ord. 53-07 § 7, 2007)

### CHAPTER 17.78

#### DEFINITIONS

##### SECTION:

##### **17.78.100: Terms Defined**

**17.78.100: TERMS DEFINED:**

For purposes of chapters 17.81 through 17.91, inclusive, of this title, the following words, terms and phrases shall have the following meanings:

BEST MANAGEMENT PRACTICES OR BMPs:	Schedules of activities, prohibitions of practices, maintenance procedures, treatment requirements, operating practices, techniques, methodologies or other management practices that, through experience and research, have proven reliable to prevent or reduce pollutants from entering the storm sewer system, and that are recognized, required, or accepted as BMPs under the clean water act, the water quality act, and related rules, regulations, guidance documents and storm water permits issued thereunder. All BMPs shall be designed and installed to allow for necessary maintenance as specified in its design manual for each BMP. BMPs shall be an integral part of an SWPPP as necessary for compliance with a UPDES permit, or a city discharge permit under chapter 17.84 of this title.
CITY:	Salt Lake City Corporation, a municipal corporation of the state.
CITY DISCHARGE PERMIT:	A permit to discharge storm water into the city's storm sewer system, issued pursuant to section 17.84.400 of this title.
CLEAN WATER ACT:	The federal water pollution control act, 33 U.S.C. section 1251 et seq., as amended, including all related rules and regulations.
CONSTRUCTION ACTIVITY:	Activities for which a UPDES general construction storm water permit, as defined in the rules promulgated under the clean water act, must be obtained. These include construction activities such as clearing and grubbing, grading, excavating and demolition that disturb one acre of land or more, including projects less than one acre that are part of a larger common plan of development.
COUNCIL:	The Salt Lake City council.
COUNTY:	Salt Lake County, Utah.
DEPARTMENT:	The city's department of public utilities.
DEVELOPED PARCEL:	Any parcel which has been altered by grading or filling of the ground surface, or by construction of any improvements or other impervious surface area that affects the hydraulic properties of the parcel.
DIRECTOR:	The director of the department, or the director's duly authorized designee.
DISCHARGE:	Any addition, injection, pumping, spilling, dumping, emitting, emptying, leaching, or introduction of any material so that such material, directly or indirectly, enters into the storm sewer system or any watercourse. Discharge includes any storm water runoff.
DISCHARGE PERMIT:	Means and includes any permit regulating discharges into the storm sewer system, including a UPDES permit, and a city discharge permit.
EPA:	The U.S. environmental protection agency.
EQUIVALENT RESIDENTIAL UNIT OR ERU:	The unit of measurement of the magnitude of use of the storm sewer system attributable to a developed parcel. One ERU is equal to the storm water runoff from a developed parcel containing two thousand five hundred (2,500) square feet of combined impervious surface area, in any configuration, which is the estimated contribution of storm water runoff from the average single-family residential dwelling unit and accompanying parcel of land.
ILLICIT CONNECTION:	An illicit connection is defined as either of the following: (1) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm sewer system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm sewer system and any connections to the storm sewer system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency; or (2) Any drain or conveyance connected from any land use to the storm sewer system and that has not been documented in plans, maps or equivalent records and approved by an authorized agency.

ILLEGAL DISCHARGE:	Any direct or indirect discharge to the municipal separate storm sewer system that is not composed entirely of storm water, except for discharges allowed under a city discharge permit, a UPDES permit, or waters used for emergency firefighting operations.
IMPERVIOUS SURFACE:	That hard surface area of a developed parcel that either prevents or retards the entry of water into the soil mantle and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that which would be present under natural conditions. Impervious surfaces may include, but are not limited to, rooftops, concrete or asphalt paving, walkways, patios, driveways, parking lots or storage areas, trafficked gravel, or other surfaces which similarly impede the natural infiltration into the ground of runoff of storm and surface water.
INDUSTRIAL ACTIVITY:	Generally, activity for which a UPDES permit is required. Industrial activity is more particularly defined in 40 CFR section 122.26(b)(14) and Utah administrative rule R.317-8-2.5, which definitions are incorporated herein by reference. Such activities include, by way of example, manufacturing, processing or raw materials storage at an industrial plant, and most construction activity on parcels of one acre and greater or part of a larger common plan of development.
NON-STORM WATER DISCHARGE:	Any discharge to the storm sewer system that is not composed entirely of storm water.
ON PARCEL MITIGATION OR MITIGATION:	Post-construction storm water control facilities designed to city standards located on the parcel, which either hold runoff for a short period of time and release it to the storm sewer system, or hold water for a considerable length of time and disperse it by evaporation or infiltration into the ground.
OPERATOR:	With respect to any industrial activity or construction activity, the person or persons who either individually or taken together meet the following two (2) criteria: a) they have operational control over the site specifications (including the ability to make modifications in specifications); and b) they have the day to day operational control of those activities at the site necessary to ensure compliance with SWPPP requirements and any permit conditions.
PARCEL:	The smallest separately segregated unit or plot of land which is documented and given a property serial number by the county.
PERSON:	Any individual, partnership, co-partnership, firm, limited liability company, corporation, association, joint stock company, trust, estate, government entity or any other entity recognized by law, and any offices, departments, institutions, bureaus or agencies thereof, or any other entity recognized by law and acting as either the owner or as the owner's agent.
POLLUTANT:	Anything that causes or contributes to pollution. Pollutant includes, without limitation, dredged soil, solid waste, salt piles, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, toxic materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, petroleum products, and industrial, municipal, recreational and agricultural waste.
POLLUTION:	Means any man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of any waters of the State, unless such alteration is necessary for the public health and safety. Alterations which are not consistent with the requirements of the Clean Water Act and implementing regulations shall not be deemed to be alterations necessary for the public health and safety. A discharge not in accordance with Utah Water Quality Standards, stream classification, and UPDES permit requirements, including technology-based standards shall be deemed to be pollution.
PREMISES:	Any building lot, parcel, or portion of land whether improved or unimproved, including adjacent sidewalks and parking strips.
PROHIBITED DISCHARGE:	Any discharge prohibited by section 17.84.100 of this title.

RESPONSIBLE PARTY:	A. An operator; B. A person or entity who discharges to the storm sewer system or any watercourse, whether or not pursuant to a discharge permit; or C. A person or entity responsible for emergency response for a facility or operation.
SINGLE-FAMILY RESIDENTIAL PARCEL:	Any parcel of land which is improved with a ""dwelling unit"" as defined by subsection 17.72.030B3 of this title.
STATE:	The state of Utah.
STORM WATER:	Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.
STORM WATER POLLUTION PREVENTION PLAN OR SWPPP:	A plan that describes and ensures the implementation of the best management practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site, and the actions to eliminate or reduce pollutant discharges to storm water, the storm sewer system and/or receiving waters to the maximum extent practicable.
STORM WATER RULES:	The rules promulgated by the state relating to storm water discharges, and set forth in Utah administrative rule R.317-8-3.9.
STORM SEWER FACILITIES:	Any facilities comprising part of the storm water sewer system.
STORM SEWER SYSTEM:	The city-owned and operated system of conveyances designed or used for collecting, storing, controlling, treating and/or conveying storm water. This system includes, but is not limited to, sidewalks, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade or altered channels, reservoirs or piped storm drains. This system does not include any part of the sanitary sewer system.
STORM SEWER UTILITY:	The utility created in section 2.08.100 of this code, which operates, maintains, regulates and improves storm water facilities and programs within the city.
UPDES PERMIT:	A permit issued by the Utah Department of Environmental Quality that authorizes the discharge of pollutants to waters of the state, whether the permit is applicable on an individual, group or general area-wide basis.
UNDEVELOPED PARCEL:	Any parcel which is not a developed parcel.
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM OR UPDES PROGRAM:	The program delegated to the state by the EPA pursuant to 33 USC section 1342(b) and sections 19-5-101 to 123 of the Utah code.
VIOLATION:	A violation of any provision of any storm water discharge permit, chapters 17.81 through 17.91, inclusive, of this title or any order, rule or regulation issued or promulgated hereunder.
WASTEWATER:	Wastewater means any water or other liquid, other than uncontaminated storm water or allowable non-storm water, discharged from a facility.
WATER QUALITY ACT:	The statute codified at section 19-5-101 et seq., Utah Code, as amended, including all related rules and regulations.
WATERCOURSE:	Aqueducts, pipelines, natural or artificial streams or channels through or in which water at any time flows. (Ord. 29-20, 2020: Ord. 53-07 § 8, 2007)

## CHAPTER 17.81

### STORMWATER SEWER UTILITY ESTABLISHMENT AND FUNDING

#### SECTION:

**17.81.100: Establishment Of Stormwater Sewer Utility And Administration Of Stormwater Sewer Facilities**

**17.81.200: System Of Rates And Charges**

**17.81.300: Billing And Collection**

**17.81.400: Stormwater Impact Fee**

## **17.81.500: Appeal Of Charges**

### **17.81.100: ESTABLISHMENT OF STORMWATER SEWER UTILITY AND ADMINISTRATION OF STORMWATER SEWER FACILITIES:**

The stormwater sewer utility has been established pursuant to section 2.08.100 of this code, and is operated as a separate enterprise fund within the department of public utilities. All portions of the stormwater sewer system (other than streets, curbs, gutters and sidewalks) shall be operated, managed and administered by the director within the stormwater sewer utility. (Ord. 53-07 § 11, 2007)

### **17.81.200: SYSTEM OF RATES AND CHARGES:**

A. Generally: There are hereby imposed stormwater sewer service fees, rates and charges, effective for all billing periods after and including July 1, 2011, and thereafter until further amended, on the owner of each developed parcel within the city, except: 1) governmentally owned streets, and 2) parcels on which are located stormwater sewer facilities operated and maintained by, or for, the county. The charges shall fund the administration, planning, design, construction, water quality programming, operation, maintenance and repair of existing and future stormwater sewer facilities.

B. Residential Service Charges: Residential service charges for use of the stormwater sewer system shall be as shown on the Salt Lake City consolidated fee schedule.

C. Undeveloped Parcels: Undeveloped parcels shall not be assessed a stormwater service charge.

D. Other Parcels: The charge for all other parcels shall be based upon the total square footage of measured impervious surface, divided by two thousand five hundred (2,500) square feet, or one ERU, and rounded to the nearest whole number. The actual total monthly service charge shall be computed by multiplying the total ERUs for a parcel by the monthly rate shown on the Salt Lake City consolidated fee schedule

E. Credit For On Parcel Mitigation: Nonresidential parcels with on site stormwater detention or retention facilities are eligible for a service charge credit upon application to the director by the person owning the parcel, or such person's agent. The amount of credit, if any, for on site detention or retention facilities is based on the following formula:

$$P = 0.25 + 0.70 (\text{factor}) + 0.05 (\text{permit})$$

The foregoing symbols have the following meanings:

P	Percentage of total service charge to be applied to each parcel.
0.25	Represents 10 percent for department administration cost plus 15 percent for utility operation and maintenance costs (half of the estimated total cost for utility operation and maintenance).
0.70	Represents 15 percent for utility operation and maintenance (half of the estimated total cost for utility operation and maintenance) plus 55 percent for a utility capital improvement program.
Factor	Restricted discharge (Qr) from a developed parcel divided by the peak discharge (Qp) from the same developed parcel which would result if the flow restriction facilities were not in place.
0.05	Represents 5 percent for NPDES stormwater permit for the parcel.
Permit	The rate adjustment, which applies when the parcel has an NPDES discharge permit from the state, will be equal to 0. When the parcel is included in the city NPDES permit, this rate adjustment is equal to 1.

1. Mitigation credit is available only for those nonresidential parcels whose stormwater facilities meet the city's design and maintenance standards.

2. If the stormwater facilities are not properly maintained or if related structures are modified from an approved design, the mitigation credit may be modified or terminated by the city.

3. The director shall provide a complete on site mitigation evaluation at the request and expense of the person owning the parcel, or the owner's duly authorized agent.

F. Low Income Abatement: A person who owns a single-family residential parcel and is qualified for an abatement of the minimum monthly water charge pursuant to section 17.16.670 of this title shall be eligible for a fifty percent (50%) reduction of the service charge for such parcel.

G. Nonservice Abatement: A parcel which is not directly or indirectly benefited by the stormwater sewer utility shall be entitled to an abatement of the service charge for said parcel. In order to receive such abatement, the owner, or the owner's agent, shall apply, in writing, to the director pursuant to section 17.81.500 of this chapter. (Ord. 40-11, 2011)

### **17.81.300: BILLING AND COLLECTION:**

A. Billing: In the case of developed parcels, the department shall cause billings for stormwater sewer utility services to be mailed periodically to the person who has signed for water and sanitary sewer service to the parcel. The amounts to be billed shall be included on the existing department bill as a separate line item. In the case of undeveloped parcels, a stormwater only billing will be sent to the owner of the parcel, as shown on the records of the county recorder.

B. Collection:



1. In the event partial payment is made on a combined bill, the payment shall be applied first to franchise fees due, and then to each service on a pro rata basis.

2. In the event of delinquency, fees and charges levied in accordance herewith shall be a debt due the city. If this debt is not paid within thirty (30) days after billing, it shall be deemed delinquent. The department shall have the right to terminate water, sewer and other city services to the premises to enforce payment. Any uncollected amount due from the person or persons who own the parcel on any inactive, terminated or discontinued account may be transferred to any active account under the same person or persons' name(s) and, upon failure to pay such bill after at least five (5) days' prior written notice, water and other city services to that account and parcel may be discontinued.

3. Water, sewer, garbage and storm sewer service shall not be restored until all charges have been paid in full.

C. Stormwater Sewer Utility Enterprise Fund: All funds received from storm sewer service charges shall be placed in the stormwater sewer enterprise fund and kept separate and apart from all other city funds. The collection, accounting and expenditure of all stormwater sewer utility funds shall be in accordance with existing fiscal policy of the city. (Ord. 53-07 § 14, 2007)

#### **17.81.400: STORMWATER IMPACT FEE:**

A. The fee shown on the Salt Lake City consolidated fee schedule for each one-fourth ( $\frac{1}{4}$ ) acre or portion thereof shall be imposed on all new development within city boundaries for stormwater improvements.

B. Such fee shall be paid prior to city issuance of a building permit.

C. All stormwater improvements to be maintained by the city shall be installed in the public right of way, or on other property owned by the city or with respect to which the city has all necessary easements, shall be subject to approval by the director as to materials, design and construction, and shall be under the director's exclusive control. All excavation and other permits necessary shall be obtained at the expense of the applicant. All facilities not accepted by the city as part of the stormwater sewer system shall be maintained by the property owners.

D. All stormwater sewer facilities shall be constructed at the expense of the person, persons or corporation seeking the building permit, without special taxes being levied to pay for the same. All stormwater sewer facilities shall be extended, at minimum, to the far end of the lot being serviced. All roads shall be subgraded prior to installation of the stormwater sewer facilities. (Ord. 24-11, 2011)

#### **17.81.500: APPEAL OF CHARGES:**

A. Those single-family and duplex parcels larger than 0.25 gross acre, but having less than three thousand (3,000) square feet of impervious surface, may request a reduction of the charge to the tier 1 level.

B. Any owner or person who considers the city's stormwater charge as applied to a parcel owned by such person to be inaccurate, or who otherwise disagrees with the utility rate determination, may apply to the director for a service charge adjustment. Such a request shall be in writing and state the grounds for such an appeal. The director shall review the case file and determine whether an error was made in the calculation or application of the charge and make an adjustment to the charge, if necessary, to provide for proper application of the city's rates and charges pursuant hereto. In all cases, the decision of the director shall be final unless appealed.

C. Any appeal of the amount billed under this chapter shall be filed in writing with the director no later than twenty (20) days after the billing. Any subsequent appeal shall be brought within twenty (20) days after the date of the appealed decision.

D. Appeal of decisions made by the director may be brought before the public utilities advisory committee (PUAC), which may reevaluate the issue raised in the appeal. Decisions of the PUAC shall be final and conclusive.

E. Nothing in this chapter shall be construed to grant a right to judicial review which does not otherwise exist at law. (Ord. 40-11, 2011; Ord. 24-11, 2011)

## **CHAPTER 17.84**

### **DISCHARGES INTO CITY STORMWATER SEWER SYSTEM**

#### **SECTION:**

**17.84.100: Prohibited Discharges And Connections**

**17.84.200: Preventing Accidental Discharge**

**17.84.300: City Discharge Permit**

**17.84.400: City Discharge Permit Application Process**

**17.84.500: Inspection Right Of Entry**

**17.84.600: Requirement For Use Of Best Management Practices**

**17.84.700: Watercourse Protection**

**17.84.800: Accidental Discharges**

**17.84.900: Release Of Stormwater Or Discharge Onto Other Property Prohibited**

**17.84.100: PROHIBITED DISCHARGES AND CONNECTIONS:**

Except as authorized by this chapter, or by applicable federal or state law, it shall be unlawful to:

A. Make any discharge for which a discharge permit is required, without first obtaining a discharge permit;

B. No person shall discharge or cause to be discharged into the municipal storm sewer system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water. The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. Discharges made in full compliance with the terms and conditions of a discharge permit;
2. Water line flushing or other potable water sources;
3. Landscape irrigation or lawn watering;
4. Diverted stream flows;
5. Rising ground water;
6. Ground water infiltration to storm drains;
7. Uncontaminated pumped ground water;
8. Foundation or footing drains (not including active groundwater dewatering systems);
9. Crawl space pumps;
10. Air conditioning condensation;
11. Springs;
12. Non-commercial washing of vehicles;
13. Residential street wash water;
14. Natural riparian habitat or wet-land flows;
15. Dechlorinated swimming pools;
16. Fire-fighting activities; and
17. Any other water source not containing pollutants.

C. It shall be unlawful to construct, use, maintain or allow to remain in place an illicit connection, whether or not the connection was permissible under law or practices applicable or prevailing at the time of connection. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

**17.84.200: PREVENTING ACCIDENTAL DISCHARGE:**

Any person conducting an activity which can reasonably be anticipated to create the risk of a prohibited discharge shall provide adequate protection against accidental discharge through the use of structural and nonstructural BMPs. Such BMPs include, but are not limited to: a) implementing procedures or practices which tend to reduce the likelihood of an accidental discharge, and b) installing structures or facilities designed to prevent such accidental discharge. BMPs to prevent an accidental discharge shall be provided and maintained at the person's own cost and expense. The department shall have reasonable access as defined under 17.84.500 for inspection of all post-construction structural controls. Failure to provide or maintain such BMPs, or any discharge resulting from such failure, shall be considered a violation of this chapter. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

**17.84.300: CITY DISCHARGE PERMIT:**

A. The Director may require a City Discharge permit for allowable non-storm water discharges to the storm sewer system.

B. Any person required to obtain an UPDES permit in connection with storm water discharges associated with industrial activity, including construction activity, or to operate under authority of such a permit, as required by the applicable provisions of the clean water act and/or the water quality act shall: 1) obtain such permit as required and comply with all provisions of such permit and, in addition 2) obtain a city discharge permit from the department and comply with the provisions thereof.

C. The term of the city's discharge permit shall be concurrent with the applicable UPDES permit.

D. Persons required to obtain a city discharge permit pursuant to this section must file an application for a first time city discharge permit within sixty (60) days after the effective date hereof.

E. No person may commence industrial activity, including construction activity, until a city discharge permit required by subsection B of this section has been issued by the department. The city shall not issue a building permit for any project constituting industrial activity, including construction activity, until a city discharge permit has been issued.

F. The director may include in a city discharge permit any and all reasonable requirements necessary to prevent a prohibited discharge to the storm sewer system, including requirements to control erosion and sediment, waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste, or any other pollutant, that may cause adverse impacts to water quality. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

**17.84.400: CITY DISCHARGE PERMIT APPLICATION PROCESS:**

A. An application for a city discharge permit shall be submitted in writing to the director, and shall include, at a minimum, the following information: 1) the name and mailing address of the applicant, 2) the location of discharge, 3) the nature and general

description of the activity giving rise to the discharge or potential discharge, 4) a copy of the applicant's application for an UPDES permit if applicable, and 5) any other information reasonably requested by the director. The city anticipates that a full and complete application for an UPDES permit, including all attachments, may be sufficient to satisfy these requirements.

B. The director may charge an application fee shown on the Salt Lake City consolidated fee schedule in an amount reasonably determined by the director to be sufficient to recoup the costs of the application process, but not to exceed the amount shown on the Salt Lake City consolidated fee schedule.

C. Within five (5) business days after submission of a completed application to the director, the director shall evaluate the application and either approve or deny the application. If approved, the city discharge permit issued by the director shall be accepted in writing by the applicant. (Ord. 29-20, 2020: Ord. 24-11, 2011)

#### **17.84.500: INSPECTION RIGHT OF ENTRY:**

A. Applicability. This section applies to all properties, including: (1) industrial facilities, (2) commercial facilities, and (3) parcels undergoing construction activities, that have storm water discharges regardless of whether associated with a city discharge permit.

B. All dischargers shall grant the director reasonable access to all relevant parts of the premises for the purposes of inspection, sampling, examination, copying of records that must be kept under the conditions of any discharge permit or agreements, monitoring compliance with all discharge permits, and performing any additional duties as defined by state and federal law. "Reasonable access" means, at a minimum, access during normal business hours, without prior notice, to all portions of a parcel and the improvements thereon which may contribute to a storm water discharge, subject only to bona fide safety or security precautions. Each city discharge permit or other agreement if applicable shall contain provisions granting the city appropriate inspection rights. If the applicant has bona fide safety or security measures in force, the applicant shall make the necessary arrangements to allow prompt access by personnel from the city or its designated enforcement agent.

C. The director shall have the right to set up on any operator's property or any other representative location such devices as are deemed necessary to conduct sampling, inspection, compliance monitoring and/or metering of the facility's discharges.

D. The director may require the operator to install sampling and monitoring equipment at the operator's expense. This sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the operator, at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure accuracy.

E. Any temporary or permanent obstruction to safe and easy access to the area or facility to be inspected or sampled shall, unless part of a BMP, be promptly removed by the operator at the written or verbal request of the director. The costs of providing such safe and easy access shall be borne by the operator.

F. The director's request for reasonable access to a facility for the purposes of conducting any activity authorized or required by this chapter shall not be unreasonably delayed by an operator. Any unreasonable delay or refusal of access constitutes a violation of this ordinance and any discharge permits or applicable agreements. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

#### **17.84.600: REQUIREMENT FOR USE OF BEST MANAGEMENT PRACTICES:**

A. The director may adopt policies and procedures requiring BMPs for any activity, operation, or facility which may cause or contribute to a prohibited discharge.

B. Any person responsible for a parcel which is, or may become, the source of a prohibited discharge shall be required to implement, at said person's expense, additional structural and nonstructural BMPs to prevent a prohibited discharge.

C. Compliance with all terms and conditions of a valid UPDES permit shall be deemed compliance with all similar requirements of this section.

D. Any person required to implement additional structural and nonstructural BMPs to prevent a prohibited discharge shall maintain such BMPs at the sole expense of the person. Certification of an annual inspection of all structural and nonstructural BMPs by a qualified inspector may be required to be submitted to the Department.

E. Failure to maintain required BMPs and submit an annual inspection certification by a qualified inspector in a form acceptable by the Department may be deemed a violation of this chapter. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

#### **17.84.700: WATERCOURSE PROTECTION:**

Every person owning or occupying a parcel through which a watercourse passes shall keep and maintain that portion of the watercourse within such parcel free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, such person shall maintain existing privately owned structures within or adjacent to the watercourse so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

#### **17.84.800: ACCIDENTAL DISCHARGES:**

A. This section shall apply to any person responsible for a facility, operation, or parcel, or responsible for emergency response for a facility, operation or parcel, whether or not a discharge permit is required to be obtained in connection with such facility, operation or parcel.

B. Notwithstanding other provisions of law, as soon as a person described in subsection A of this section has information of any known or suspected release of materials which are resulting, or may result, in a prohibited discharge, such person shall take the following actions:

1. Such person shall take all necessary steps to ensure the recovery, containment and cleanup of such release.

2. Such person shall immediately notify the director of the incident by telephone. This notification shall be in addition to, and not in lieu of, any other notifications required under applicable law. The notification shall include location of the release, the type, concentration and volume of the material, and any corrective actions taken or planned.

3. Such person shall, within five (5) days following the incident, submit to the director a detailed written report describing the cause of the release and the measures to be taken to prevent similar future occurrences. Such notification shall not relieve the person of any expense, loss, damage or other liability which may be incurred as a result of the release, nor shall such notification relieve the person of any fines, civil penalties or other liability which may be imposed by this chapter or other applicable law.

4. A notice shall be posted on the person's bulletin board or other prominent place advising employees of the incident, and of any possible dangers and safety precautions to be taken. Such notice shall also include recommended measures to prevent future releases.

5. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three (3) years.

C. Each person subject to this section shall ensure that all employees are familiar with the requirements of this section. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

**17.84.900: RELEASE OF STORMWATER OR DISCHARGE ONTO OTHER PROPERTY PROHIBITED:**

It shall be unlawful to knowingly, intentionally or recklessly: a) release or direct the flow of storm water into any conveyance facilities, or onto any property, or b) make any discharge into any conveyance facilities or onto any property, without the legal right to do so. Violation of this section shall constitute a class B misdemeanor. (Ord. 29-20, 2020: Ord. 53-07 § 18, 2007)

## **CHAPTER 17.87**

### **ENFORCEMENT**

**SECTION:**

**17.87.100: Notification Of Violation**

**17.87.150: Consent Orders**

**17.87.200: Show Cause Hearing**

**17.87.250: Compliance Orders**

**17.87.300: Cease And Desist Orders**

**17.87.350: Administrative Fines; Costs Of Remediation**

**17.87.400: Emergency Suspensions**

**17.87.450: Termination Of City Discharge Permit**

**17.87.500: Injunctive Relief**

**17.87.550: Civil Fine And Cost Of Pass-Through Recovery**

**17.87.600: Referral To State Of Utah For Action**

**17.87.650: Performance Bonds**

**17.87.700: Liability Insurance**

**17.87.750: Water Supply Severance**

**17.87.800: Public Nuisances**

**17.87.850: Contractor Listing**

**17.87.900: Nonexclusive Remedies**

**17.87.950: Compensatory Actions**

**17.87.100: NOTIFICATION OF VIOLATION:**

Whenever the director finds a violation of chapter 17.81 and/or 17.84 of this title the director may serve upon the responsible party a written notice of violation. Such written notice shall be served in person or by certified mail, return receipt requested. Within five (5) days after the receipt of such notice, an explanation for the violation and a plan for the satisfactory correction and prevention thereof, which shall include specific required actions, shall be submitted by the responsible party to the director. Submission of this plan in no way relieves the responsible party of liability for any violations occurring before or after receipt of the notice of violation. Nothing in this section shall limit the authority of the director to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation. (Ord. 53-07 § 19, 2007)

**17.87.150: CONSENT ORDERS:**

The director is hereby empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any responsible party who is responsible for noncompliance. Such orders will include specific action to be taken by the responsible party. Consent orders shall have the same force and effect as administrative orders issued pursuant to sections 17.87.250 and 17.87.300 of this chapter, and shall be judicially enforceable. (Ord. 53-07 § 19, 2007)

**17.87.200: SHOW CAUSE HEARING:**

The director may order any responsible party suspected of causing or contributing to violation(s), to appear before the director and show cause why a proposed enforcement action should not be taken. Written notice shall be served on the responsible party, and shall specify the time and place for the hearing, the proposed enforcement action, the reasons for such action, and a request that the responsible party show cause why this enforcement action should not be taken. The notice shall be served in person on any authorized representative of the responsible party, or by certified mail, return receipt requested, at least seven (7) days prior to the hearing. Whether or not the responsible party appears as ordered, immediate enforcement action may be pursued following the hearing date. A show cause hearing shall not be a prerequisite for taking any other actions against the responsible party. (Ord. 53-07 § 19, 2007)

**17.87.250: COMPLIANCE ORDERS:**

When the director finds a violation or continuing violation, he may issue an order to the responsible party directing that the responsible party come into compliance within thirty (30) days, or such shorter period as the director may determine. If the responsible party does not come into compliance within the time specified, the director may take any remedial action authorized by this chapter. The issuance of an order pursuant to this section shall not be a prerequisite to emergency remedial action deemed necessary by the director. Compliance orders may also contain other requirements to address noncompliance, including additional self-monitoring, and BMPs designed to minimize the amount of pollutants discharged to the stormwater sewer system. A compliance order may not extend a federal standard or requirement, nor does a compliance order release the responsible party from state or federal liability for any violation, including any continuing violation. Issuance of a compliance order shall not be a prerequisite to taking any other action against the responsible party. (Ord. 53-07 § 19, 2007)

**17.87.300: CEASE AND DESIST ORDERS:**

When the director finds a violation, or finds that the responsible party's past violations are likely to recur, the director may issue an order to the responsible party directing it to cease and desist all such violations and directing the responsible party to:

- A. Immediately comply with all requirements; and
- B. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations, implementing additional BMPs, and/or terminating the discharge. Issuance of a cease and desist order shall not be a prerequisite to taking any other action against the responsible party. (Ord. 53-07 § 19, 2007)

**17.87.350: ADMINISTRATIVE FINES; COSTS OF REMEDIATION:**

A. Notwithstanding any other section of this chapter and chapters 17.81 and 17.84 of this title, any responsible party determined by the director, without regard to intent or negligence, to be in violation of this chapter and/or chapter 17.81 and/or 17.84 of this title may be fined in an amount not greater than ten thousand dollars (\$10,000.00) per violation, per day, as determined by the director in his or her reasonable discretion; provided, however, that any fine based on a violation of section 17.84.900 of this title shall not exceed the fine imposed for a class B misdemeanor.

1. The director may adopt an escalating fine schedule for penalties assessed under subsection A that allows for increased penalties for multiple violations.
  2. Penalties assessed under subsection A may be increased and/or trebled, in the director's discretion, where the responsible party has received another notice of violation at any time; for violations resulting in physical harm to persons or to private or public property; for knowing or deliberate violations; or for violations resulting from grossly negligent or reckless conduct.
- B. The director may charge a responsible party for all costs related to an administrative enforcement action, including but not limited to inspections, sampling, monitoring and preparing such as notices and orders, which charge may be assessed whether or not a fine under subsection A of this section is also imposed.
- C. The director may also charge a responsible party for the actual costs and expenses incurred by the city after the effective date hereof to respond to any prohibited discharge, regardless of whether such prohibited discharge occurs prior to or after the effective date hereof. Such charges may include all labor, equipment and materials used by the city, costs incurred to address damages to or contamination of the storm sewer system, watercourses or any public private property, public health studies or other assessments, and all related administrative costs. Such charge may be assessed whether or not a fine under subsection A of this section is also imposed.
- D. Assessments for fines and/or costs may be added to the responsible party's next scheduled storm water utility service charge, and the director shall have such other collection remedies as may be available for other service charges and fees.
- E. Unpaid charges, fines, assessments and penalties shall, after sixty (60) calendar days, be assessed an additional penalty of ten percent (10%) of the unpaid balance. Thereafter, interest on any unpaid balances, including penalties, shall accrue at a rate of one percent (1%) per month. A lien against the responsible party's property may be sought for unpaid charges, fines, and penalties. Unpaid charges, fines, assessments and penalties shall be judicially enforceable by the City in any court of competent jurisdiction, and the City may recover all reasonable attorney fees, court costs, and other expenses of litigation related to such enforcement.
- F. Responsible parties desiring to dispute such fines or assessments must file a written request for the director to reconsider the fine or assessment, along with full payment thereof, within thirty (30) days after being notified of the fine or assessment. The director shall convene a hearing on the matter within fourteen (14) days after receiving the request from the responsible party. In the event the director determines that all or any portion of the fines, assessments or charges were improper, such amounts paid by the responsible party to the director shall be returned to the responsible party, without interest.

G. The imposition of fines, assessments or other charges shall not be a prerequisite for taking any other action against the responsible party. (Ord. 29-20, 2020: Ord. 53-07 § 19, 2007)

**17.87.400: EMERGENCY SUSPENSIONS:**

The director may order the immediate suspension or shutoff of a responsible party's discharge or storm sewer system access (after informal notice to the responsible party) whenever such suspension or shutoff is necessary in order to stop an actual or threatened

discharge which reasonably appears to present or cause a risk of an imminent or substantial:

- A. Damage to the storm sewer system or harm to the receiving waters,
- B. Endangerment to the health, safety or welfare of any person served by the storm sewer system,
- C. Interference with the operation of the storm sewer system,
- D. Violation of the city's discharge permit or agreements, or
- E. Endangerment to the environment.

Any responsible party notified of a suspension of its discharge shall immediately stop or eliminate its contribution or discharge. In the event of a responsible party's failure to immediately comply voluntarily with the suspension order, the director may take such steps as deemed necessary, including immediate severance of the storm sewer system connection, to enforce such order. The director shall allow the responsible party to recommence its discharge when the responsible party has demonstrated to the satisfaction of the director that the period of endangerment has passed, unless the termination proceedings set forth in section 17.87.450 of this chapter are initiated against the responsible party. A responsible party that is responsible in whole or in part, for any discharge presenting imminent endangerment, shall submit to the director a detailed written statement describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, prior to the date of any show cause or termination of discharge hearing under sections 17.87.200 and 17.87.450 of this chapter. Nothing in this section shall be interpreted as requiring a hearing prior to any emergency suspension under this section. (Ord. 29-20, 2020: Ord. 53-07 § 19, 2007)

**17.87.450: TERMINATION OF CITY DISCHARGE PERMIT:**

Violation by the holder of a city discharge permit of any of the provisions thereof, or of any of the provisions of this chapter and/or chapter 17.81 and/or 17.84 of this title, shall be grounds for termination and revocation of such permit by the director. The permit holder shall be notified of the proposed termination of a discharge permit and be offered an opportunity to show cause under section 17.87.200 of this chapter why the proposed action should not be taken. (Ord. 53-07 § 19, 2007)

**17.87.500: INJUNCTIVE RELIEF:**

Whenever the director finds a violation or continuing violation, the director may petition any court of competent jurisdiction for the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the discharge permit; compliance with an order, rule, regulation or other requirement; and/or payment of charges, fines, assessments and penalties. In addition, the director may recover reasonable attorney fees, court costs, and other expenses of litigation by appropriate legal action against the responsible party for any violation. Such other action as appropriate for legal and/or equitable relief may also be sought by the director. A petition for injunctive relief need not be filed as a prerequisite to taking any other action against a responsible party. (Ord. 29-20, 2020: Ord. 53-07 § 19, 2007)

**17.87.550: CIVIL FINE AND COST OF PASS-THROUGH RECOVERY:**

In the event that a responsible party discharges pollutants which causes the city to violate any conditions of its UPDES permit or otherwise violate any applicable law, rule or regulation, and the city is found to be liable for such discharges of pollutants (including civil or administrative fines, penalties or other charges), then the responsible party shall be fully liable to the total amount of such liability (including civil or administrative fines and penalties) incurred by or otherwise assessed against the city, including administrative costs incurred. (Ord. 53-07 § 19, 2007)

**17.87.600: REFERRAL TO STATE OF UTAH FOR ACTION:**

The director may refer civil or criminal violations of any discharge permit conditions to other cooperating agencies for enforcement. The Utah attorney general's office may offer the county the option of prosecuting the violator. Should the county decline, the state, in its discretion, may initiate appropriate criminal action. The director may assist the Utah attorney general's office or the county with appropriate support for the action taken. (Ord. 29-20, 2020: Ord. 53-07 § 19, 2007)

**17.87.650: PERFORMANCE BONDS:**

The director may decline to reissue a city discharge permit to any responsible party which has caused a violation, unless such responsible party first files a satisfactory bond, payable to the director, in a sum not to exceed a value determined by the director to be necessary to achieve consistent compliance. (Ord. 53-07 § 19, 2007)

**17.87.700: LIABILITY INSURANCE:**

The director may decline to reissue a city discharge permit to any responsible party which has caused a violation, unless the responsible party first submits proof that it has obtained financial assurances sufficient to restore or repair damage to the stormwater sewer system, and indemnify and hold the city harmless from any future violation. (Ord. 53-07 § 19, 2007)

**17.87.750: WATER SUPPLY SEVERANCE:**

Whenever the director finds that a person has violated or continues to violate the provisions of this chapter and/or chapter 17.81 and/or 17.84 of this title, or of any discharge permit, or order, rule or regulation issued or promulgated hereunder, water service to the person may be discontinued. Service will only recommence, at the person's expense, after it has satisfactorily demonstrated its ability to comply. (Ord. 53-07 § 19, 2007)

**17.87.800: PUBLIC NUISANCES:**

Any violation of this chapter and/or chapter 17.81 and/or 17.84 of this title is hereby declared a public nuisance and shall be corrected or abated as directed by the director. In addition to any other powers granted the director under chapter 17.75 of this title, the director shall be entitled to exercise all of the powers and remedies set forth in the provisions of this code governing nuisances, and shall be entitled to reimbursement for any costs incurred in removing, abating or remedying such nuisance. (Ord. 53-07 § 19, 2007)

**17.87.850: CONTRACTOR LISTING:**

Responsible parties who have caused or significantly contributed to a violation:

A. Are not eligible to receive a contractual award for the sale of goods or services to the city as long as such violation is continuing and/or any fines hereunder remain unpaid, or remedial action required hereunder remains unperformed; and

B. Existing contracts for the sale of goods or services to the city may be terminated at the discretion of the mayor. (Ord. 53-07 § 19, 2007)

**17.87.900: NONEXCLUSIVE REMEDIES:**

The provisions of this chapter are not exclusive remedies. The director reserves the right to take any, all, or any combination of these actions against a noncompliant responsible party. Enforcement of violations will generally be in accordance with the department's enforcement plan. However, the director reserves the right to take other action against any responsible party when the circumstances warrant. Further, the director is empowered to take more than one enforcement action against any noncompliant responsible party. These actions may be taken concurrently. (Ord. 53-07 § 19, 2007)

**17.87.950: COMPENSATORY ACTIONS:**

In lieu of enforcement proceedings, penalties and remedies authorized by this chapter for a violation of a requirement of this title, the director may impose alternative compensatory actions such as storm drain stenciling, watercourse cleanup, and similar community service; or may impose education at the responsible party's expense. (Ord. 29-20, 2020: Ord. 53-07 § 19, 2007)

## CHAPTER 17.91

### MISCELLANEOUS

SECTION:

**17.91.100: Severability**

**17.91.200: Ultimate Responsibility**

**17.91.100: SEVERABILITY:**

The provisions of chapter 17.75 of this title through this chapter are hereby declared to be severable. If any provision, clause, sentence, or paragraph of chapter 17.75 of this title through this chapter, or the application thereof to any person, establishment or circumstance shall be held invalid, such invalidity shall not affect the other provisions or application of chapter 17.75 of this title through this chapter. (Ord. 53-07 § 20, 2007)

**17.91.200: ULTIMATE RESPONSIBILITY:**

The standards set forth herein and promulgated pursuant to chapter 17.75 of this title through this chapter are minimum standards; therefore chapter 17.75 of this title through this chapter do not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor prohibited discharge. Review and approval of structures, facilities, and operating procedures shall not relieve a person from the responsibility of modifying a facility or process as necessary to meet the requirements hereof. (Ord. 53-07 § 20, 2007)

## **21A.34.130: RCO RIPARIAN CORRIDOR OVERLAY DISTRICT<sup>2</sup>:**

### **A. General Provisions:**

1. Purpose Statement: The purpose of the RCO riparian corridor overlay district is to minimize erosion and stabilize stream banks, improve water quality, preserve fish and wildlife habitat, moderate stream temperatures, reduce potential for flood damage, as well as preserve the natural aesthetic value of streams and wetland areas of the city. This overlay district is intended to provide protection for the following aboveground streams, stream corridors and associated wetlands east of the Interstate 215 Highway: City Creek, Red Butte Creek, Emigration Creek, Parleys Creek, and Jordan River. Where these streams flow through areas already developed on the effective date of this section (January 15, 2008), the RCO is intended to achieve a reasonable balance between the dual nature of these areas: natural streams and developed land uses.
2. District Location: The RCO district applies to that portion of any lot or parcel of land located between the annual high water level (AHWL) of City Creek, Red Butte Creek, Emigration Creek, Parleys Creek and the Jordan River, where not located belowground, and a line which is one hundred feet (100') along a horizontal plane from the AHWL. The RCO district does not apply to any lot or parcel where a stream, with respect to such lot or parcel, is located entirely belowground in a pipe or covered channel.
3. Applicability: The RCO district regulations set forth in this section supplement regulations in the underlying base zoning district. RCO regulations shall govern any use or development conducted within the RCO district unless specifically exempted under the provisions of this section or another provision of this title.
  - a. An RCO permit is supplementary to any land use permit authorized under this title.
  - b. Canals and irrigation ditches are not subject to this section.
  - c. The surplus canal and watercourses west of Interstate 215 are regulated under section [21A.34.050](#), "LC Lowland Conservancy Overlay District", of this chapter and are not subject to this section.
4. Relationship To Other Laws: The requirements of the RCO district shall apply in addition to any other applicable federal, state, county, or city law or regulation.
  - a. Any use or development within the RCO district shall conform to applicable provisions of title 20, "Subdivisions", of this code and this title. Compliance with the requirements of this section shall not relieve a landowner from compliance with other applicable provisions of this title except as expressly otherwise set forth in this section.
  - b. If a landowner obtains a permit for a use or development located within the RCO district that is entirely within the jurisdiction of a federal or state government agency



or Salt Lake County, then the landowner shall also apply for a riparian protection permit. If the relevant federal, state, or county agency approves the use or development as in compliance with the agency's requirements, then the city shall issue the riparian protection permit subject to compliance with the federal, state, or county approval and shall not independently review the use or development for compliance with this section.

- c. If any portion of a proposed use or development is outside the jurisdiction of a federal, state, or county agency, then the applicant shall comply with the provisions of this section and shall obtain a riparian protection permit if required under the provisions of this section.
- d. Salt Lake County shall not be required to obtain a riparian protection permit for any county flood control activity authorized by the Utah code within or along a stream in the RCO district. However, Salt Lake County shall obtain a riparian protection permit for any stream restoration and nonflood control development or other use conducted by the county which is located within the RCO district.
- e. Any person who leases federal or state land, or any appurtenant structure or building located within the RCO district shall obtain a riparian protection permit if required under the provisions of this section.
- f. A city department or agency that conducts a use or development within the RCO district shall follow the requirements of this section and obtain a riparian protection permit if required for such use or development.
- g. The department of public utilities shall develop general permits as needed to address routine channel maintenance, possible emergency situations, and similar activities. These general permits shall provide how a particular use or development shall be conducted to avoid adverse stream corridor impacts and shall include required mitigation and restoration measures consistent with the provisions of this section. The process for reviewing and approving a general permit application shall be the same for a public or private person or entity.

#### B. Decision Making Authority:

- 1. Public Utilities Director: The public utilities director shall be responsible for implementing and administering the provisions of this section. The public utilities director:
  - a. May authorize a minor exemption and reasonable use exception to the provisions of this section as set forth, respectively, in subsections C5 and C6 of this section;
  - b. May render an administrative interpretation of any provision in this section pursuant to the procedures set forth in chapter 21A.12 of this title;
  - c. May not make any decision involving land use, zoning, subdivision, legal conformity in a zoning district, historic preservation, restoration, rehabilitation, or demolition of any structure except as expressly set forth in this section;

- d. Shall expedite the permit review process if an applicant reasonably demonstrates imminent danger to individuals or property is associated with the subject land;
- e. May adopt reasonable regulations, including approval of general permits, to implement the provisions of this section; and
- f. May designate one or more staff persons within the department to carry out these responsibilities. Wherever this section refers to the director, such reference shall also include the director's designee.

2. Public Utilities Advisory Committee: Pursuant to the authority granted in subsection [2.40.110](#) of this code, the public utility advisory committee shall hear and decide any appeal arising from a final decision granting or denying a riparian protection permit pursuant to procedures set forth in chapter 21A.16 of this title.

3. Appeal Of Decision: Any person adversely affected by any decision of the public utilities advisory committee may, within thirty (30) days after the decision is made, present to the district court a petition specifying the grounds on which the person was adversely affected.

C. Review Process And Procedures: An application for a riparian protection permit shall be considered and processed as set forth in this subsection.

1. Riparian Protection Permit Application: A complete application shall be submitted to the department of public utilities and shall contain at least the following information submitted by the applicant, unless certain information is determined by the public utilities director to be inapplicable or unnecessary to evaluate the application under the provisions of this section. The public utilities director may determine, consistent with the requirements of this section, other application matters such as the scale, quality, and details shown on maps and plans, and the number of application copies required for submittal.

- a. The applicant's name, address, telephone number and interest in the land;
- b. The landowner's name, address and telephone number, if different than the applicant, and the owner's signed consent to the filing of the application;
- c. The street address and legal description of the subject land;
- d. The zoning classification, boundaries of base and overlay zoning districts, and present use of the subject land;
- e. A complete description of the use or development for which a riparian protection permit is requested;
- f. Plan view and cross sections of the site which show:
  - (1) The riparian corridor boundary with respect to the subject land;

- (2) The annual high water line and each setback line from the AHWL (area A, 25 feet; area B, 50 feet; and area C, 100 feet), elevation, and slope;
  - (3) The location and setback of existing and proposed buildings and structures;
  - (4) Existing and proposed grades;
  - (5) Any nonnative or invasive vegetation identified by location, type, and size, including any area where invasive vegetation is proposed for removal;
  - (6) 100-year floodplain, past flood hazard areas, geological faults, high liquefaction areas, and slopes thirty percent (30%) or greater;
  - (7) Habitat of any known threatened or endangered species of aquatic and terrestrial flora or fauna, if required by the public utilities director;
  - (8) If wetlands exist on the subject land, a wetlands delineation approved by the U.S. army corps of engineers; and
  - (9) Such other and further information or documentation as the public utilities director may reasonably deem necessary for proper consideration of a particular application, including, but not limited to, geotechnical and hydrological reports required under subsection E8 of this section.
2. Riparian Corridor Delineation: The riparian corridor shall be delineated at the annual high water level.
  - a. When the annual high water level cannot be found, the top of the channel bank may be substituted if approved by the public utilities director.
  - b. A boundary location or delineation required under this section shall be prepared by a licensed professional hydraulic engineer, hydrologist, wetlands scientist, fluvial geomorphologist, another equivalent qualified environmental science professional, or the public utilities department.
  - c. Any wetland delineation within a stream corridor shall be approved by the U.S. army corps of engineers prior to submittal of the delineation to the public utilities director.
  - d. If a wetland exists within and extends beyond the one hundred feet (100') of the riparian corridor, the outermost edge of the wetland shall be the outer edge of the riparian corridor.
3. Determination Of Completeness: Upon receipt of an application for a riparian protection permit, the public utilities director shall make a determination of completeness of the application pursuant to section [21A.10.010](#) of this title.
4. Notice Of Applications For Additional Approvals: Whenever in connection with an application for a riparian protection permit, an applicant is requesting another type of approval, such as a building permit, subdivision, conditional use permit, variance,

special exception, or change in zoning or land use, each required notice shall include a reference to all other requested approvals.

5. Minor Exceptions Authorized: Minor exceptions to the provisions of this section may be approved by the public utilities director as provided in this subsection. A minor exception may not authorize an exception to a prohibited land use.

a. Criteria: A minor exception shall be approved only if the public utilities director finds the exception:

(1) Is of a technical nature (i.e., relief from a dimensional or design standard);

(2) Will not authorize a deviation of more than ten percent (10%) from an otherwise applicable numerical standard;

(3) Is required to compensate for some unusual aspect of the site or proposed use or development generally not shared by landowners in the vicinity;

(4) Supports a goal or objective consistent with any RCO master plan as may be adopted, subsequent restoration efforts, or the purpose of this section;

(5) Will protect sensitive natural resources or better integrate development with the riparian environment;

(6) Will avoid filling, grading, and construction of retaining walls; and

(7) Is not likely to:

(A) Interfere with the use and enjoyment of adjacent land;

(B) Create a danger to public health or safety, particularly from flooding or erosion damage;

(C) Change stream bank stability or increase the likelihood of erosion; or

(D) Affect water quality.

b. Conditions May Be Required: In granting a minor exception, the public utilities director may attach any conditions necessary to meet the intent of this section. Any performance bond required by such conditions shall be administered as provided in this title and any other applicable provision of this code.

c. Time Limit: The public utilities director shall prescribe a time limit within which action under the minor exception shall begin. Failure to begin such action within the established time limit shall void the minor exception.

d. Burden Of Proof: The applicant shall have the burden of providing evidence to support a minor exception request.

6. Reasonable Use Exception: If a landowner believes application of the provisions of this section would deny all reasonable economic use of the owner's lot or parcel of

land, the owner may request a reasonable use exception pursuant to this subsection. A request for a reasonable use exception shall be made to the public utilities director and shall include basis for the owner's reasonable use exception request and any information set forth in [title 2, chapter 2.66](#) of this code which the public utilities director deems relevant to the request.

a. Criteria: The public utilities director shall approve a request for a reasonable use exception when all of the following criteria are met:

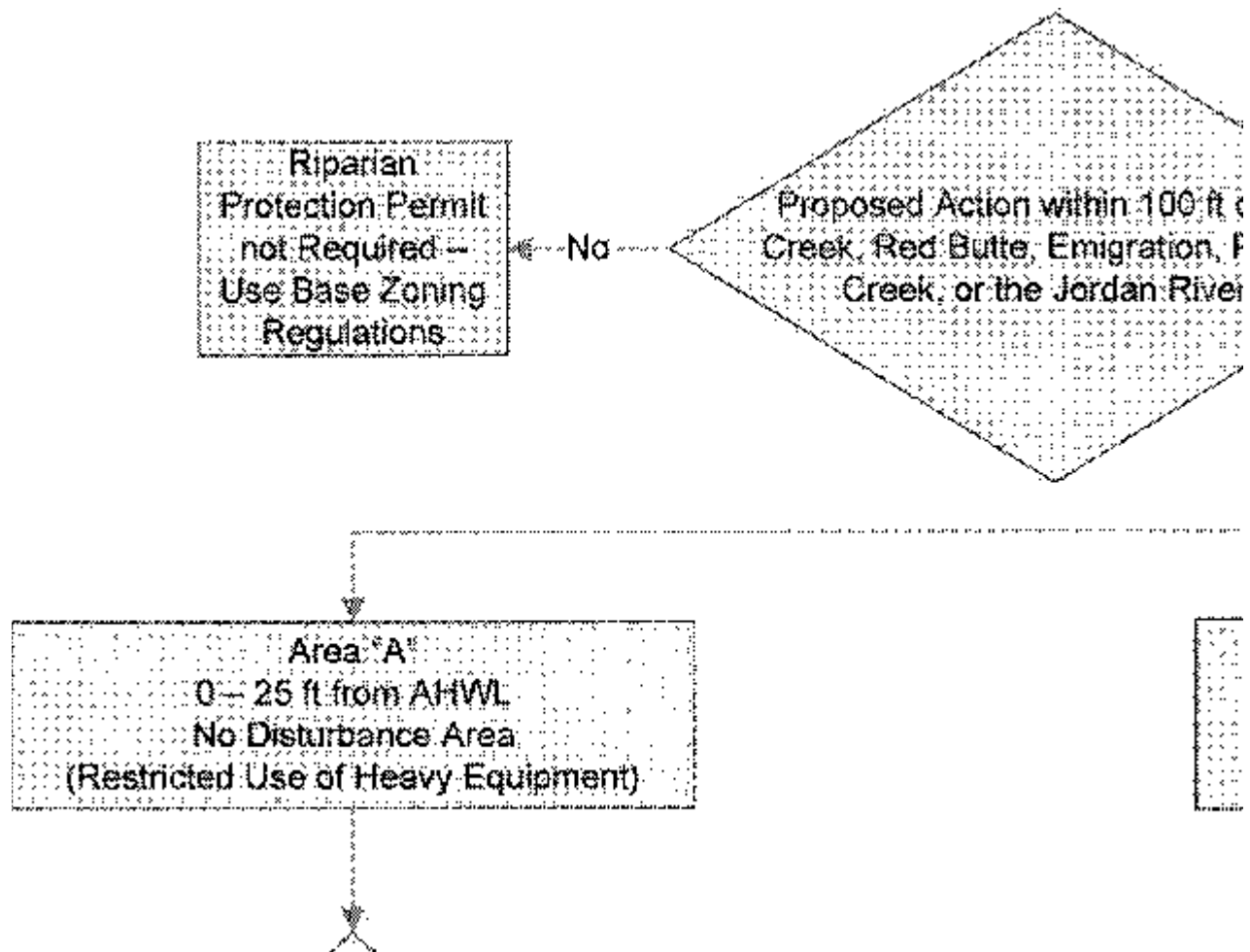
- (1) The application of the provisions of this section would deny all reasonable economic use of the land;
- (2) No other reasonable economic use of the land would have less impact on the riparian corridor area;
- (3) The impact to the riparian corridor area resulting from granting the reasonable economic use request is the minimum necessary to allow for reasonable economic use of the land;
- (4) The inability of the applicant to derive reasonable economic use of the land is not the result of actions by the applicant or the applicant's predecessor;
- (5) The reasonable economic use exception mitigates the loss of riparian corridor area functions to the extent reasonably feasible under the facts of the application; and
- (6) The reasonable economic use exception only authorizes a permitted or conditional use authorized by the underlying district and conforms to other applicable requirements of this title to the extent reasonably feasible under the facts of the application.

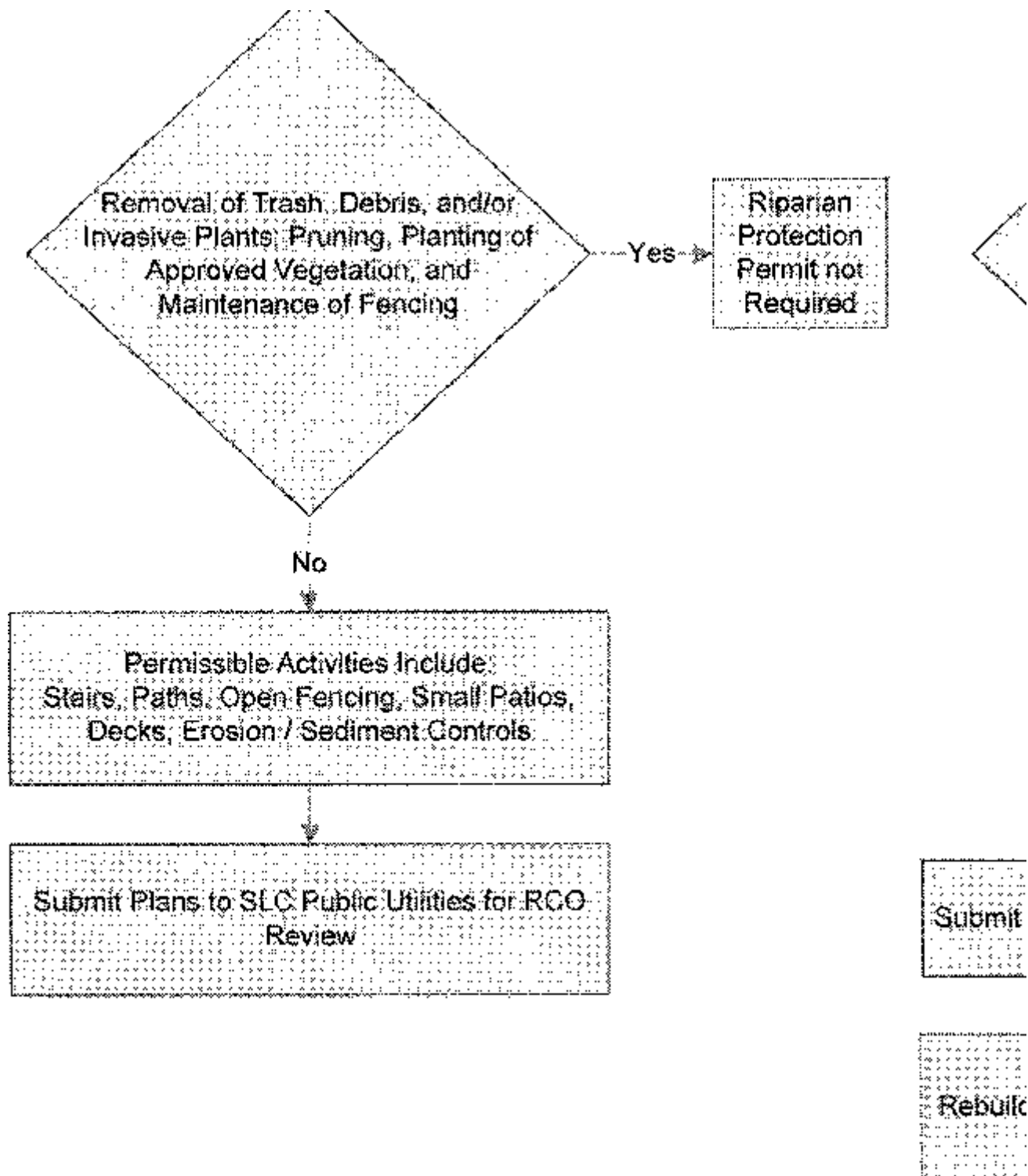
b. Burden Of Proof: The applicant shall have the burden of providing evidence to support a reasonable economic use exception request.

7. Action By Public Utilities Director: Following review of a complete application for a riparian protection permit, and any request for a minor exception or reasonable use exception, the director shall, pursuant to provisions of this section: a) approve the permit; b) approve the permit subject to specific modifications; or c) deny the permit. A riparian protection permit for the proposed use or development shall be approved if the public utilities director determines such action is in accord with the provisions of this section and meets the following criteria:

- a. Construction associated with the use or development is not reasonably anticipated to result in the discharge of sediment or soil into any storm drain, wetland, water body, or onto an adjacent lot or parcel; and
- b. Except as otherwise required under a reasonable use exception, the proposed use or development:

- (1) Will result in equal or better protection for the riparian corridor area, considering the provisions of this section, as reasonably determined by the public utilities director; and
  - (2) Will not occupy more than fifty percent (50%) of the total area within areas A and B described in subsection D2 of this section.
8. Appeal Of Decision: Any person adversely affected by a final decision of the public utilities director may within thirty (30) days after such decision appeal to the public utility advisory committee as provided in subsection B2 of this section.
9. Application Process Flow Chart: The riparian corridor permit application process is conceptually illustrated in table [21A.34.130-1](#) of this subsection C9. The provisions of this section shall prevail over any conflict with the flow chart.



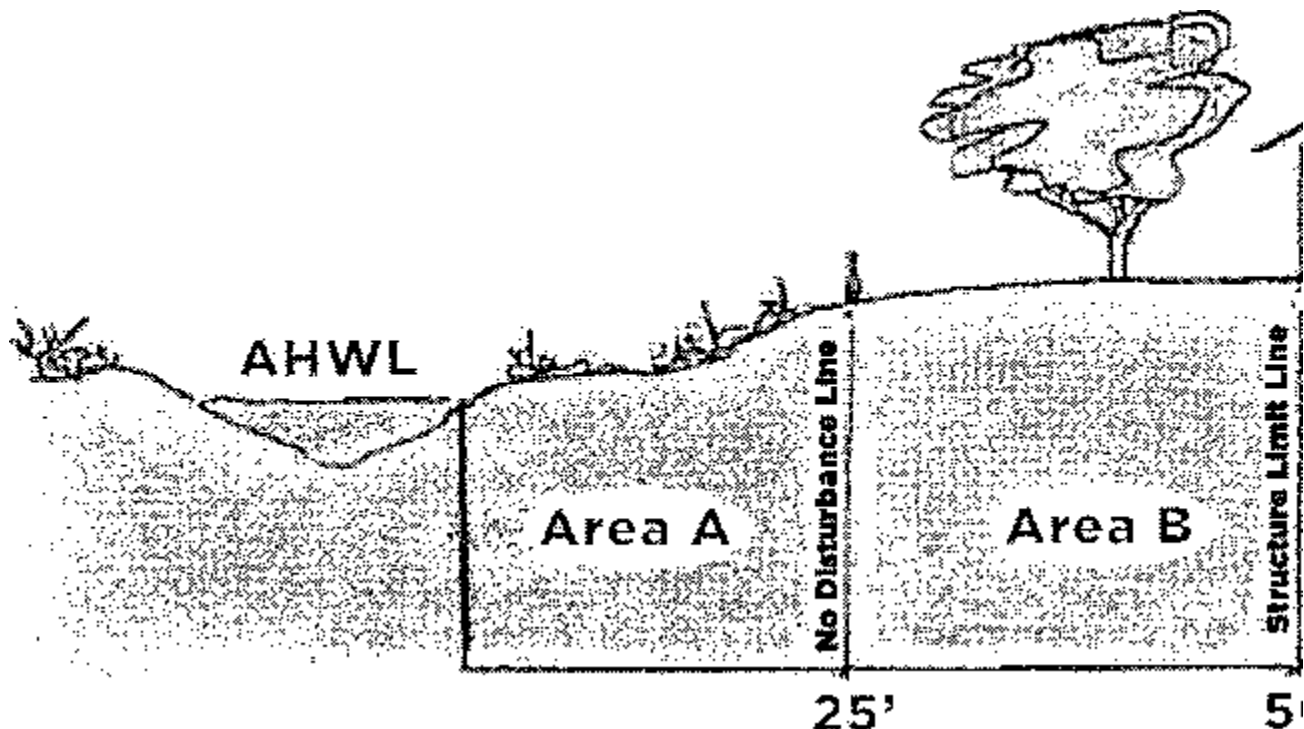


#### D. Permitted Uses:

1. In General: No person shall engage in any ground disturbing use or development on a lot or parcel that will remove, fill, dredge, clear, destroy, armor, terrace, or otherwise

alter the RCO district through manipulation of soil or other material except as allowed by:

- a. This section and, where required by this section, the public utilities director; or
  - b. The U.S. army corps of engineers, Salt Lake County flood control, the Utah state engineer, or any other government agency with jurisdiction over land in the RCO district to the extent provided in subsection A4 of this section.
2. Permitted Use Areas; Developed Land: The following use areas are hereby established for developed lots or parcels within the RCO district as shown on illustration A of this subsection:
- a. Area A: A "no disturbance area" located between the annual high water line and twenty five feet (25') from the AHWL;
  - b. Area B: A "structure limit area" located between twenty five (25) and fifty feet (50') from the AHWL; and
  - c. Area C: A "buffer transition area" located between fifty (50) and one hundred feet (100') from the AHWL.



*Illustration A*  
*100 Foot Riparian Corridor*



3. Permitted Use Area; Undeveloped Land: On a one acre or larger undeveloped lot or parcel within the RCO district, area A, the "no disturbance area" described above, shall be extended to one hundred feet (100') from the AHWL.
4. Permitted Use Table; Developed Land: Permitted uses allowed on a developed lot or parcel within the RCO district are shown on table [21A.34.130-2](#) of this subsection D4. Uses allowed by right are indicated by the letter "P"; uses which require a riparian protection permit are indicated by the letters "RPP"; and prohibited uses are indicated by a blank space.
- a. Any use or development not shown on this table shall be prohibited unless authorized by a provision of this section or another applicable provision of this title.
- b. Table 21A.34.130-2 of this subsection D4 is a summary of the provisions in this subsection D. The text of this section shall control over anything contrary shown on the table.

TABLE [21A.34.130-2](#)

## USES ALLOWED BY AREA ON DEVELOPED LOTS

Use	Area A	Area B	Area C	Comments
Maintenance and use of any lawfully established use, development, or structure existing on January 15, 2008; any use, development, or structure established thereafter shall be authorized only as provided in this section	P	P	P	See subsection D6 of this section
Any action not constituting development or a ground disturbing activity except as otherwise set forth on this table	P	P	P	
Maintenance of existing lawn and garden areas	P	P	P	
Herbicide, pesticide and fertilizer application in accordance with best management practices	P	P	P	
Replanting noninvasive vegetation	P	P	P	
Maintenance tree pruning	P	P	P	

Minor ground disturbing activity	RPP	P	P	See subsections D7 and E1b of this section
Manual removal of trash, storm debris, and fallen, dead, or diseased trees	P	P	P	
Invasive plant removal	P	P	P	
Planting noninvasive vegetation	P	P	P	
Maintenance of existing fence or structure	P	P	P	
Pruning or tree removal within utility easement by responsible entity	P	P	P	
Tree removal and replacement	P	P	P	Permitted with some exceptions; see subsection E4 of this section
Activities approved by U.S. army corps of engineers or state engineer	P	P	P	See subsection D7g of this section
Open fence, new	P	P	P	See subsections D8 and E1b of this section
Open patio/deck	RPP	P	P	
Minimal grading		P	P	See subsection D8 of this section
Compost from yard debris		P	P	
Mechanized removal of fallen, dead, or diseased trees		P	P	
Use or development allowed by underlying district			P	See subsection D9 of this section
Commercial parking lot				Not permitted; see subsection D9 of this section
Leach field, stormwater retention pond, and detention basin				
Public utilities work	RPP/P	RPP/P	RPP/P	See subsection D11 of this section
	RPP	P	P	See subsection E1 of this section,

New construction or maintenance of access stairs, landscape walls, and paths				particularly subsection E1b of this section for permitted new construction
Low impact stream crossing	RPP			
Maintenance of existing irrigation and flood control devices	P	RPP	RPP	
Installation and maintenance of erosion control devices	RPP	RPP	RPP	
Building replacement and expansion	RPP	RPP	P	See subsection E2 of this section
Removal of debris or trees with heavy equipment	RPP	RPP	RPP	See subsections E3 and E4 of this section
Trail on publicly owned right of way	RPP	RPP	P	See subsection E9 of this section

5. Permitted Use Table; Undeveloped Land: Permitted uses allowed on an undeveloped lot or parcel within the RCO district are shown on table [21A.34.130-3](#) of this subsection D5. Uses allowed by right are indicated by the letter "P"; uses which require a riparian protection permit are indicated by the letters "RPP"; and prohibited uses are indicated by a blank space.

- a. Any use or development not shown on this table shall be prohibited unless authorized by a provision of this section or another applicable provision of this title.
- b. Table 21A.34.130-3 of this subsection D5 is a summary of the provisions in this subsection D. The text of this section shall control over anything contrary shown on the table.

TABLE 21A.34.130-3  
USES ALLOWED ON UNDEVELOPED LAND

Use	Area A (100 Foot Setback Area)	Comments
Maintenance and use of any lawfully established structure or use existing on January 15, 2008; any use, development, or structure established	P	See subsection D6 of this section

thereafter shall be authorized only as provided in this section

Any action not constituting development or a ground disturbing activity except as otherwise set forth on this table

P

Maintenance of existing lawn and garden areas

P

Herbicide, pesticide and fertilizer application in accordance with best management practices

P

Replanting noninvasive vegetation

P

Maintenance tree pruning

P

Minor ground disturbing activity

P

See subsections D7, E1b and E4 of this section

Manual removal of trash, storm debris, and fallen, dead, or diseased trees

P

Pruning or tree removal within utility easement by responsible entity

P

Tree removal or replacement

P

Invasive plant removal

P

Planting noninvasive vegetation

P

Maintenance of existing fence or structure

P

Activities approved by U.S. army corps of engineers or state engineer

P

See subsection D7g of this section

Commercial parking lot

Not permitted; see subsection D9 of this section

Leach field, stormwater retention pond, and detention basin

Public utilities work	RPP/P	See subsection D11 of this section
Trail on publicly owned right of way	RPP	See subsection E9 of this section

6. Uses Allowed By Right On Developed Land; All Areas: The following uses may be conducted on a lot or parcel within area A, B, or C without a riparian protection permit:

- a. Maintenance and use of any lawfully established structure or use existing on January 15, 2008; any use, development, or structure established thereafter shall be authorized only as provided in this section;
  - b. Maintenance of lawns and gardens, including benches and pathways;
  - c. Application of herbicide, pesticide, and fertilizer, subject to applicable state and federal regulations and in accordance with best management practices identified by the department of public utilities;
  - d. Replanting of vegetation with noninvasive species identified by the public utilities director;
  - e. Maintenance pruning of existing trees; and
  - f. Any other activity which is not a development or other ground disturbing activity.
7. Uses Allowed By Right On Developed Or Undeveloped Land; Area A: The following minor ground disturbing activities shall be allowed by right in a residential district on a developed or undeveloped lot or parcel within area A without a riparian protection permit:
- a. Manual removal of trash, storm debris, and fallen, diseased, or dead trees or other vegetation by the landowner;
  - b. Pruning or removal of trees within a utility easement by the responsible entity;
  - c. Tree removal and replacement as provided in subsection E4 of this section;
  - d. Removal of invasive plants;
  - e. Planting of noninvasive vegetation shown on a list of approved and prohibited vegetation within riparian protection areas published by the department of public utilities and/or the urban forester;
  - f. Maintenance of an existing fence or structure within the original footprint if:
    - (1) Further stream bank armoring is not required; and
    - (2) Soil is not unstable due to steep slope movement; and
  - g. Construction activities approved by the U.S. army corps of engineers under the federal clean water act or the river and harbors act, or by the Utah state engineer under the stream alteration permit program as set forth in subsection A4 of this section.
8. Uses Allowed By Right On Developed Land; Area B: Uses allowed within area B on a developed lot or parcel without a riparian protection permit include:
- a. Any use described in subsection D4 of this section;

- b. Open fencing approved under a general permit promulgated by the public utilities director;
  - c. Construction of open patios which do not involve an existing grade change of more than two feet (2') and decks which are not higher than two feet (2') above grade;
  - d. Minimal grading;
  - e. Compost from yard debris; and
  - f. Mechanized removal of fallen, dead, or diseased trees as provided in subsection E4 of this section.
9. Uses Allowed By Right On Developed Land; Area C: Uses allowed within area C on a developed lot or parcel without a riparian protection permit include any use or development allowed by the underlying district or as set forth in subsections D7 and D8, or E1b of this section, except a leach field, stormwater retention pond, detention basin, or commercial parking lot.
10. Uses Allowed By Right On Undeveloped Land: Uses allowed on undeveloped land shall be as authorized by the underlying base zoning district, except within residential districts, the research park district, public lands districts, and the institutional and urban institutional district. Within such districts the following shall apply:
- a. The one hundred foot (100') nondisturbance area requirement as described in subsection D3 of this section; and
  - b. The use and development standards set forth in subsection E of this section.
11. Public Utilities Work: In addition to the uses listed on the foregoing tables, the city may complete work within the RCO district as provided in this subsection.
- a. Emergency Work: Emergency work to protect an immediate threat to life or land is allowed without a riparian protection permit.
    - (1) The city department undertaking the work shall notify the public utilities director of activity within twenty four (24) hours thereafter.
    - (2) Any stream channel or riparian area damaged as a result of city work shall be restored. The department of public utilities shall issue a riparian protection permit for such restoration work and shall inspect and approve the work undertaken.
    - (3) Temporary emergency structures, sandbags, and other emergency related materials shall be removed from the site in a timely manner.
  - b. Other Work: The following work may be undertaken within a riparian corridor protection area subject to the issuance of a riparian protection permit as provided in this subsection:
    - (1) Matters of public safety;

- (2) Work to protect life or property in an emergency;
- (3) Flood control;
- (4) Channel or riparian restoration;
- (5) Maintenance, including storm drainage system, irrigation structures, utility and street work;
- (6) Public utilities projects approved by the department of public utilities, including, but not limited to, new utility or street work; bridge maintenance, repair, replacement, or new construction; public trails, such as bike and pedestrian paths located on publicly owned land;
- (7) Public gathering places such as amphitheaters and gazebos located on publicly owned land;
- (8) Maintenance access roads; and
- (9) Utility service devices such as stormwater lift stations and irrigation structures.

- c. Equipment: Plans submitted for a riparian protection permit shall include a description of equipment to be used for any work proposed. Such equipment shall be sufficiently sized for the task and chosen to minimize any impact to a stream channel and the riparian corridor area.
- d. Construction Design Standards: The department of public utilities shall develop construction design standards applicable to projects approved under this subsection.

E. Use And Development Standards: Other uses and development standards within the RCO district shall be conducted as provided in this subsection and shall be consistent with any RCO master plan as may be adopted.

1. Area A: Development within area A shall conform to the standards set forth in this subsection.

- a. Developed Lot In A Residential District: On a developed lot in a residential district, no new construction shall occur closer than twenty five feet (25') to the annual high water level, except as permitted by this subsection.
- b. Allowed Minor Ground Disturbing Activities: The following activities shall be allowed in a residential district within area A if heavy equipment is not used and as provided by a riparian protection permit:
  - (1) New construction or maintenance of access stairs, landscape walls; and/or paths between vertical levels within area A and no more than one per level in terraced areas;



- (2) An open permeable patio or deck not located within a streambed and constructed in a manner that:
  - (A) Will not impede any high water flow above the AHWL;
  - (B) Does not change existing grade; and
  - (C) Is not greater than one hundred fifty (150) square feet;
- (3) Low impact stream crossings;
- (4) Construction of open fences, beyond the AHWL in any area within the RCO district, if approved by the public utilities director or as authorized by a general permit promulgated by the director;
- (5) Maintenance of existing irrigation and flood control devices; and
- (6) Installation and maintenance of erosion control devices, approved, if necessary, by the U.S. army corps of engineers, Salt Lake County flood control, the Utah state engineer or any other government authority with jurisdiction. Such erosion controls may include armoring, if, as reasonably determined by the approving authority:
  - (A) The armoring is authorized or required by the public utilities director and/or one or more of the foregoing government authorities;
  - (B) The armoring is necessary to protect the structural integrity of an existing structure on the land or significant loss of land area due to erosion;
  - (C) The landowner has reasonably exhausted less intrusive methods to prevent significant land damage;
  - (D) The armoring is placed only where necessary to prevent significant land damage in the foreseeable future; and
  - (E) The proposed armoring will not negatively impact other adjacent or downstream land.
- 2. Area B: Replacement, rebuilding, or expansion of a building within areas A and B shall conform to the standards set forth in this subsection.
  - a. Replacement Buildings: Replacement or rebuilding of a preexisting structure in area A and/or B shall require a riparian protection permit and is allowed, consistent with

the continuation of nonconforming uses and noncomplying structures as set forth in section [21A.38.050](#) of this title, if:

- (1) The structure replaces a preexisting structure with the same type of structure or a structure of lesser impact pursuant to underlying zoning district standards;
  - (2) No portion of the footprint of the new structure is any nearer to the AHWL than the nearest point of the preexisting structure to the AHWL;
  - (3) The total square footage of the portion of the footprint of the new structure to be located within area A and/or B does not exceed the total square footage of the footprint of the old structure as it was located within area A and/or B;
  - (4) The new structure:
    - (A) Does not require further armoring of the stream bank; and
    - (B) Is not located in any unstable area due to movement of a steep slope, unstable soils, or geological activity along a fault that will not support the structural footprint; and
    - (C) Complies with applicable requirements of the underlying zoning district and any other applicable city regulation except as otherwise set forth in this section.
- b. Building Expansion: Notwithstanding any other provision of this title to the contrary, an existing structure (not including a deck, patio, or similar structure) may be expanded by up to twenty five percent (25%) in area A or B as provided by a riparian protection permit if such expansion does not result in any structure being built closer to the AHWL than any portion of the existing structure.
- (1) The foregoing rule shall also apply to a replacement structure.
  - (2) As a tradeoff for allowing expansion or replacement with a larger structure, the public utilities director shall require, as a condition of the riparian protection permit, that the landowner spend five percent (5%) of the project cost on stream bank restoration or specify a minimum number of linear feet of stream bank that shall be restored based on the size of the expansion and consistent with any RCO master plan as may be adopted and any subsequent restoration project applicable to the entire stream corridor.
3. Use Of Heavy Equipment In Areas A And B: Heavy equipment may be used in areas A and B as provided by a riparian protection permit issued pursuant to standards promulgated by the public utilities director to minimize and mitigate impacts from the use thereof, and subject to any applicable federal, state, and county requirements.
4. Tree Removal And Replacement: Trees located in area A, B, or C which are fallen, diseased, or dead, or which are less than two inches (2") in caliper, may be removed

without a riparian protection permit so long as replacement trees are planted in the same area.

a. Trees which are removed shall be replaced as follows:

- (1) For trees six inches (6") in caliper or less: One to one (1:1);
- (2) For trees six (6) to eight inches (8") in caliper: Two to one (2:1); and
- (3) For trees eight inches (8") or greater in caliper: Three to one (3:1).
- (4) Any replacement tree which does not survive for at least one year shall be replaced again.

b. Removal of live trees is prohibited without approval from the public utilities director. In determining whether a live tree should be removed, the director shall consult with the zoning administrator and the urban forester.

c. Replacement trees shall be an approved species and size shown on the list of approved and prohibited vegetation within riparian protection areas published by department of public utilities and/or the urban forester and shall have the following minimum size:

- (1) Deciduous trees shall have a minimum trunk size of two inches (2") in caliper, and
- (2) Evergreen trees shall have a minimum size of five feet (5') in height.

d. Any tree which is more than two inches (2") in caliper shall not be removed unless authorized by a riparian protection permit.

e. The director may promulgate a general permit for tree stump removal in any area within the RCO district. Removal of any tree stump located within twenty five feet (25') of the annual high water line shall be approved by the urban forester.

5. Development On Undeveloped Residential Lots Or Parcels: Development on an undeveloped residential lot or parcel which is one acre or larger and located within area A, B, or C shall meet the requirements of this subsection.

a. The no disturbance setback for such lots shall be increased to one hundred feet (100').

- (1) If the depth of the lot or parcel is less than two hundred feet (200'), then the setback shall be reduced by the ratio of the actual lot depth to two hundred feet (200').

- (2) The development potential (density) located within area B and C may be transferred to the balance of the subject lot or parcel and the minimum lot size in the zoning district may be reduced by the zoning administrator, on advice and consultation with the public utilities director, to accommodate such additional

density. In the alternative, the development potential (density) may be applied to an adjacent lot or parcel within the control or ownership of the applicant.

- b. When a new structure is proposed to be constructed on a lot or parcel with a reduced setback as a result of this subsection, the zoning administrator, on advice and consultation with the public utilities director, may reduce required front and side yard setbacks by a factor of twenty five percent (25%); provided, however, that the setback shall not be reduced by more than the ratio calculated under subsection E5a (2) of this section.
  - c. In all cases the minimum nondisturbance setback shall be at least fifty feet (50').
6. Development In Nonresidential Districts: A required setback on a lot or parcel located in a nonresidential district may be reduced to allow development within twenty five feet (25') of a stream if the stream is daylighted as provided in subsection E7 of this section.
7. Incentives For Stream Bank Restoration Or Daylighting In Nonresidential Districts: Any applicant for a project that daylights a stream or completes a city approved stream bank restoration program for at least fifty feet (50') along a stream in a riparian corridor shall be allowed to build within twenty five feet (25') of the AHWL, subject to a riparian protection permit approved by the public utilities director, so long as the applicant:
  - a. Incorporates best practice stormwater management facilities to reduce water pollution as specified by the public utilities director;
  - b. Agrees to monitor and control trash, litter, and other pollutants along the stream; and
  - c. Installs an amenity in the corridor such as a plaza, benches, trail, and/or sidewalk that is open to and accessible by the public.
8. Steep Slope And Soil Stability Standards: As part of a riparian protection permit, the public utilities director may require a geotechnical report and impose greater setbacks for structures or buildings from the structure limit line to ensure safety. When unstable soils are suspected, regardless of the slope, the public utilities director may require a geotechnical report, increase the no disturbance line, and impose greater setbacks for a structure or building from the structure limit line to ensure safety.
  - a. Replacement or repair of an existing retaining structure shall require a riparian protection permit.
  - b. Each proposed project shall be reviewed on an individual basis.
9. Trails: Trails may be established along a publicly owned right of way within any area located in the RCO district.
  - a. A riparian protection permit shall be required for a trail located in area A.
  - b. Public access to private land adjoining a stream channel shall be prohibited unless authorized by the landowner or pursuant to an access easement.

F. Definitions: For the purpose of this section the following words and terms shall be defined as set forth below and shall apply in addition to the terms defined in chapter 21A.62 of this title:

**ANNUAL HIGH WATER LEVEL (AHWL):** The average (mean) elevation of City Creek, Red Butte Creek, Emigration Creek, Parleys Creek, and the Jordan River occurring during a calendar year as indicated by fresh silt or sand deposits, the presence of litter and debris, or other characteristics indicative of a high water level.

**ARMORING:** Material such as rock, concrete or stone filled gabion baskets placed along a stream bank to prevent erosion.

**BANK:** The confining sides of a natural stream channel, including the adjacent complex that provides stability, erosion resistance, and aquatic habitat.

**BEST MANAGEMENT PRACTICES (Also Known As BMPs):** The utilization of methods, techniques, or products demonstrated to be the most effective and reliable in minimizing adverse impacts on water bodies and the adjacent stream corridors.

**CHANNEL:** The bed and banks of a natural stream or river.

**DAYLIGHTING:** Restoring a piped drainage system to an open, natural condition.

**DEVELOPMENT:** The carrying out of any building activity, the making of any material change in the use or appearance of any structure or land, or the dividing of land into parcels by any person. The following activities or uses shall be taken for the purposes of these regulations to involve "development":

1. The construction of any principal building or structure;
2. Increase in the intensity of use of land, such as an increase in the number of dwelling units or an increase in nonresidential use intensity that requires additional parking;
3. Alteration of a shore or bank of a creek, pond, river, stream, lake or other waterway;
4. Commencement of drilling (except to obtain soil samples), the driving of piles, or excavation on a parcel of land;
5. Demolition of a structure;

6. Clearing of land as an adjunct of construction, including clearing or removal of vegetation and including any significant disturbance of vegetation or soil manipulation;
7. Deposit of refuse, solid or liquid waste, or fill on a parcel of land; and
8. For the purpose of this section, any ground disturbing activity.

The following operations or uses shall not be taken for the purpose of these regulations to involve "development":

1. Work by a highway or road agency or railroad company for the maintenance of a road or railroad track, if the work is carried out on land within the boundaries of the right of way;
2. Utility installations as stated in subsection [21A.02.050B](#) of this title;
3. Landscaping for residential uses; and
4. Work involving the maintenance of existing landscaped areas and existing rights of way such as setbacks and other planting areas.

**EROSION:** The process by which a ground surface is worn away by wind, water, ice, gravity, artificial means, or land disturbance.

**EROSION CONTROL:** A construction method, structure, or other measure undertaken to limit the detachment or movement of soil, rock fragments, or vegetation by water, wind, ice, and/or gravity.

**FLOOD HAZARD AREA:** An area with a high flood potential as determined by the federal emergency management agency.

**FLOODPLAIN:** The area likely to be inundated by water when the flow within a stream channel exceeds bank full discharge stage.

**FOOTPRINT:** The area under a structure at ground or grade level.

**GENERAL PERMIT:** A permit for a category of uses with similar characteristics authorized by the public utilities director.

**GRADING:** Any act by which soil is cleared, stripped, moved, leveled, stockpiled, or

any combination thereof, and includes the conditions that result from that act.

**GROUND DISTURBING ACTIVITY:** Removing, filling, dredging, clearing, destroying, armoring, terracing or otherwise altering an area through manipulation of soil or other material.

**HABITAT:** The physical environment utilized by a particular species, or species population.

**HEAVY EQUIPMENT:** A vehicle or machine designed for construction or earthmoving work including, but not limited to, a backhoe, bulldozer, compactor, crane, dump truck, excavator, front loader, grader, scraper, skid-steer loader, or tractor.

**HIGH LIQUEFACTION POTENTIAL:** Soil conditions where an earthquake with a fifty percent (50%) probability of occurring within a 100-year period will be strong enough to cause liquefaction.

**INVASIVE SPECIES:** A usually nonnative species that is highly successful in a new habitat and whose presence is significantly detrimental to native species.

**LEACH FIELD:** A porous soil area, through which septic tank leach lines run, emptying treated waste.

**LIQUEFACTION:** The strength and stiffness of saturated soil is reduced by earthquake shaking.

**LOW IMPACT STREAM CROSSING:** A walkway which does not impede the flow of water in a stream channel during a period of high water flow.

**MINIMAL GRADING:** Movement of soil with hand tools which does not change the existing elevation by more than one foot (1').

**NATIVE VEGETATION:** One or more plant species indigenous to a particular area.

**NO DISTURBANCE LINE:** That line which is located twenty five feet (25') from the AHWL as shown on illustration A of this section.

**ONE HUNDRED FOOT BUFFER LINE:** That line located one hundred feet (100') from the AHWL as shown on illustration A of this section.

**100-YEAR FLOODPLAIN:** An area adjoining a river or stream likely to be inundated during a flood having a magnitude expected to be equaled or exceeded once in one hundred (100) years on average.

**OPEN FENCE:** An artificially constructed barrier that allows light transmission and visibility through at least fifty percent (50%) of the fence.

**OPEN PERMEABLE PATIO OR DECK:** A patio or deck which does not impede the flow of water in a stream channel during a period of high water flow.



**OVERLAY DISTRICT:** See section [21A.62.040](#) of this title.

**PUBLIC UTILITIES DIRECTOR:** The duly appointed individual serving as director of the Salt Lake City department of public utilities.

**RIPARIAN AREA:** An area including a stream channel or wetland, and the adjacent land where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated high water tables, and soils that exhibit some wetness characteristics.

**RIPARIAN CORRIDOR:** A one hundred foot (100') wide stream corridor measured from the annual high water level (AHWL) of the adjacent stream or wetland, which has a total width of at least two hundred feet (200') plus the width of the streambed plus any adjacent wetland.

**RIPARIAN PROTECTION PERMIT:** A permit issued by the public utilities director containing conditions which regulate or prohibit development under the provisions of this section.

**RIPARIAN SETBACK:** The area between the annual high water level of a stream and a line parallel to the stream which is a defined distance from the AHWL.

**STORMWATER DETENTION BASIN:** An artificial flow control structure used to contain floodwater for a limited period of time to provide protection for areas downstream during peak periods of rain or melting snow.

**STREAM:** City Creek, Red Butte Creek, Emigration Creek, Parleys Creek and the Jordan River.

**STREAM CORRIDOR:** A stream and adjacent land within a defined distance from the stream.

**STRUCTURE:** Anything constructed or erected with a fixed location on the ground or in/over the water bodies in the city. Structure includes, but is not limited to, buildings, fences, walls, signs, and piers and docks, along with any objects permanently attached to the structure.

**STRUCTURE LIMIT LINE:** That line which is located fifty feet (50') from the AHWL as shown on illustration A of this section.

**UNSTABLE SOIL:** Soil on a slope of greater than thirty percent (30%) which is likely to move unless stability measures are undertaken to prevent such movement.

**WETLAND:** Those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

#### G. Measurements:

1. All distances noted in this section shall be measured along a horizontal plane from the annual high water level to the applicable riparian boundary line, property line, edge of building or structure, or other point. These distances are not measured by following the topography of the land. Consequently, on steeply sloped topography the measured overground distance may not accurately reflect the distances specified in the permits and conditions specified in this section.
2. When any distance measurement results in a fractional number, the required distance shall be measured to the nearest foot. Any fraction less than one-half foot ( $\frac{1}{2}'$ ) shall be disregarded and fractions of one-half foot ( $\frac{1}{2}'$ ) or larger shall be included in the measurement.
3. When measuring a required minimum distance, the measurement shall be made at the shortest distance between the two (2) points and perpendicular to the riparian setback line. (Ord. 62-08 § 1 (Exh. A), 2008; Ord. 3-08 § 3, 2008)

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX C – Salt Lake City Storm Water Quality Program Best Management Practices**

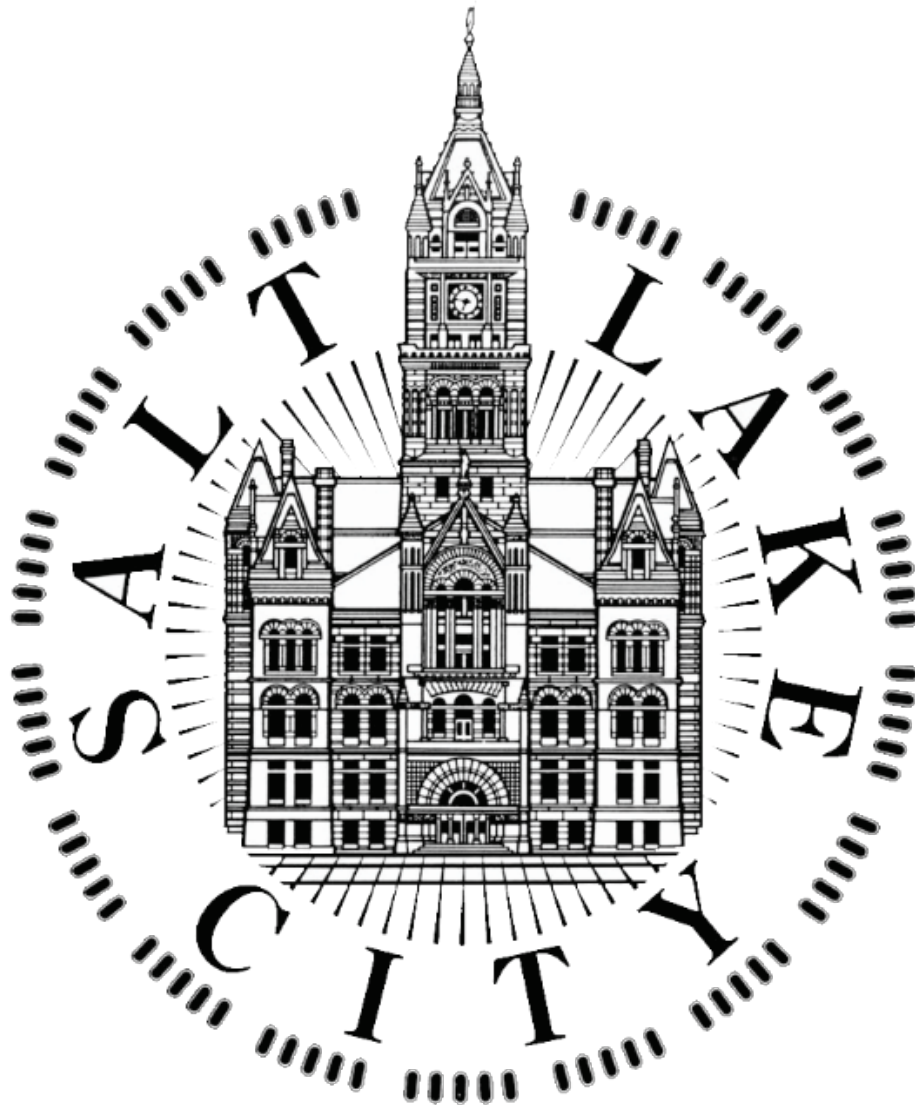
# Salt Lake City Storm Water Quality Best Management Practices

BMP 01:	Clean the entire storm sewer system every 5 years.
BMP 02:	Inspect the storm sewer system and detention basins within the permit cycle.
BMP 03:	Support “Tan Can” yard waste pickup for Salt Lake City residents.
BMP 04:	Support the "Call-2-Haul” bulky waste cleanup program for Salt Lake City residents.
BMP 05:	Remove leaves from gutters and inlets during the fall leaf season.
BMP 06:	Support the Curbside recycling effort for Salt Lake City residents.
BMP 07:	Support resident clean-up days of selected waterways and natural areas.
BMP 08:	Track drainage system maintenance using Cityworks® system.
BMP 09:	Conduct annual training for drainage system maintenance personnel.
BMP 10:	Continue a program for the disposal of all waste and waste water from storm sewer system cleaning.
BMP 11:	Continue requirements for on-site detention for developments.
BMP 12:	Enforce the requirements of Salt Lake City Ordinances.
BMP 13:	Provide Standard BMPs for site development (active and post-construction) to developers and engineers.
BMP 14:	Continue inspection and enforcement program for private long-term storm water BMPs.
BMP 15:	Support the existing Salt Lake City Street Sweeping program.
BMP 16:	Inspect salt/deicing materiel storage areas for proper storm water control measures.
BMP 17:	Continue procedures for monitoring storm water management on Public construction projects.
BMP 18:	Review proposed street projects for applicability of structural water quality BMPs.
BMP 19:	Review all proposed storm water projects for applicability of structural water quality BMPs.
BMP 20:	Review detention basins for feasibility of retrofitting for water quality enhancements.
BMP 21:	Continue education program on the proper use of pesticides and fertilizers.
BMP 22:	Implement retention standards for new development and re-development projects in accordance with 2021 MS4 Permit requirements.
BMP 23:	Coordinate with POTW pretreatment program.
BMP 24:	Maintain records of all illicit connection investigations and enforcement.
BMP 25:	Review all new development and re-developments plans for compliance and illicit connections.
BMP 26:	Promote SLCoHD Household Hazardous Waste Facility and Collection Services.
BMP 27:	Continue program for investigating illicit flows and connections.
BMP 28:	Implement Memorandum of Understanding (MOU) with SLCoHD
BMP 29:	Maintain staff to respond to reports of illicit discharges.
BMP 30:	Continue interagency cooperation concerning illicit flows investigation.
BMP 31:	Pursue prosecutions and court ordered solutions to significant contamination problems in accordance with ordinance and MOU.
BMP 32:	Investigate dry weather flows.
BMP 33:	Continue to implement a storm sewer spill response plan.
BMP 34:	Maintain a list of certified suppliers and contractors to respond to containment and cleanup of spilled material.
BMP 35:	Continue program to promote public reporting of illicit discharges.
BMP 36:	Educate the public on Nitrogen and Phosphorus pollution sources, water quality impacts, and solutions/controls.
BMP 37:	Continue education for residential users on water quality issues, impacts, and solutions.
BMP 38:	Continue procedure for reporting and investigating possible SSOs into the storm sewer system.
BMP 39:	Maintain an industrial permittee and priority commercial inventory that includes SIC/NAICS codes.
BMP 40:	Identify and Prioritize industrial and priority commercial groups for inspections and education.
BMP 41:	Staff positions for coordinating storm water pollution prevention for each MCM of the MS4 Permit.
BMP 42:	Distribute water quality education materials to Industrial and priority commercial facilities.
BMP 43:	Continue a storm water quality-training program for development and plans review personnel.
BMP 44:	Continue to obtain and review SWPPPs for construction projects and industrial facilities.
BMP 45:	Continue to enforce against SWPPP violations.
BMP 46:	For City projects, identify erosion control measures as a specific bid item.
BMP 47:	Participate in education training and seminars conducted by the State of Utah and other agencies.

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX D – Standard Operating Procedures**

# **Salt Lake City Corporation**



## **Standard Operating Procedures/Instructions Manual**

Version 2022.0

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**ACTIVITY:** Building Wash Down & Graffiti Removal

Effective Date: 11/1/2017

Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

## **Permit Requirement 4.2.6.7.1.**

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the wash-down of building exteriors using pressure washers; including graffiti removal operations.

### **Procedure:**

#### **1. Preparation**

- a. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- b. If washing near a storm drain inlet, obtain and implement appropriate storm drain inlet protection devices (i.e. drain covers, wattles, booms, berms etc.).
- c. Acquire appropriate personal protective equipment (PPE) according to department policy.
- d. Obtain spill kit and equipment for dry clean-up methods (i.e. socks, absorbent pads, kitty litter, broom, shovel, dustpan etc.).

#### **2. Process**

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from wash water. Wash water must not be allowed to enter the storm drain.
- b. Always use dry clean-up methods prior to the use of any water or other wet clean up method including power washing.
- c. When cleaning spills, use absorbents such as kitty litter, absorbent pads, etc. while sweeping. Scrape up any dried debris. All waste material must be disposed of as solid waste.
- d. All solid material must be removed from the area prior to pressure washing. Filter bags or similar filtration devices should be used to remove suspended solids from wastewater.
- e. Pressure wash building with as little water as possible.
- f. Divert wash water to an impermeable surface or have it captured for proper disposal.
- g. There must not be a visible sheen in the discharge. If a visible sheen is present, use an absorbent pad or boom to remove any oil from discharge.
- h. Do not pressure wash an entire building. If practical, spot clean, steam clean or scrape dry dirty areas instead of pressure washing.
- i. Use a wet vacuum for to collect wash water for disposal.

#### **3. Clean-Up**

- a. Dispose of all wash water properly and in accordance with all local, state and federal standards.
- b. Clean up all BMP material/inlet protection

#### **4. Documentation**

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Facilities – Concrete

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for pouring concrete.

### Procedure:

#### 1. Preparation

- a. Train employees and contractors in proper concrete waste management.
- b. Store dry and wet materials under cover, away from drainage areas.
- c. Remove any damaged concrete that may need to be replaced.
- d. Prepare and compact sub-base.
- e. Set forms and place any reinforcing steel that may be required.
- f. Determine how much new concrete will be needed.
- g. Locate or construct approved concrete washout facility.
- h. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Install inlet protection as needed.
- b. Avoid mixing excess amounts of fresh concrete on-site.
- c. Moisten sub-base just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
- d. Place new concrete in forms.
- e. Consolidate new concrete.
- f. Screed off surface.
- g. Let concrete obtain its initial set.
- h. Apply appropriate surface finish.
- i. Remove forms when concrete will not slump.

#### 3. Clean-Up

- a. Perform washout of concrete trucks and equipment in designated areas only.
- b. Do not washout concrete trucks or equipment into storm drains, open ditches, streets or streams.
- c. Cement and concrete dust from grinding activities is swept up and removed from the site.
- d. Remove dirt or debris from street and gutter.

#### 4. Documentation

- a. Record location and date on the maintenance log.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Facilities – Dumpsters and Garbage Storage for Buildings and Facilities

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for garbage storage.

#### Procedure:

##### 1. Preparation

- a. Locate dumpsters and trash cans in a convenient, easily observable areas.
- b. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
- c. Provide training to employees to prevent improper disposal of general trash.
- d. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with storm water.

##### 2. Process

- a. Inspect garbage bins for leaks regularly, and have repairs made immediately by a responsible party.
- b. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.
- c. If possible: store dumpsters, or refuse container, in a fenced enclosure.
- d. Request/use dumpsters, and trash cans with lids and without drain holes.
- e. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
- f. Keep lids closed when not actively filling dumpster.

##### 3. Clean-Up

- a. Keep areas around dumpsters clean of all garbage.
- b. Have garbage bins emptied regularly to keep from overfilling.
- c. Wash out bins or dumpsters as needed to keep odors from becoming a problem. Wash out in properly designated areas only.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.



## ACTIVITY: Facilities - Fixture Painting

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for painting fixtures.

### Procedure:

#### 1. Preparation

- a. Perform a Work Hazard analysis for this procedure. Assemble and don all appropriate PPE; including eye protection, the appropriate gloves and a respirator if necessary.
- b. Calculate the amount of paint required for the job.
- c. Use low VOC or water based paints if possible.
- d. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes.
- e. Determine location of any waterways including, but not limited to storm drain inlets, gutters, wells, canals, sewers, etc. that may need protection. Assess and implement appropriate BMPs.
- f. Prepare surfaces to be painted without generating wastewater by sandblasting and/or scraping.
- g. Thoroughly sweep up all sand surplus. Sand will enter the waste stream to the landfill.
- h. Thoroughly sweep up all blasting particles, and/or paint scraping particles. These will be scooped up and placed in recovery buckets and taken to the recycling or disposal site at the landfill.
- i. If paint stripping is needed, use a citrus-based paint remover whenever possible.
- j. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the filter and collect the debris.

#### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material/paint, spills or wastewater.
- b. Paint.
- c. Prevent over-spraying of paints and/or excessive sandblasting.
- d. Use drip pans and drop clothes in areas of mixing paints and painting.
- e. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
- f. Have available absorbent material and other BMPs ready for an accidental paint spill.

#### 3. Clean-Up

- a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
- b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.



## ACTIVITY: Facilities - Fixture Painting

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.
- d. Clean up oil based paints with paint thinner. Oil based paints and thinners will be contained in a metal container and disposed of at the recycling facility at the landfill. Filter solvents for reuse if possible and/or store in approved drum for recycling. Rags and cleaning equipment will be stored in a NFPA approved storage container.
- e. Dispose of waste collected by placing it in a garbage container. Left-over paint and solvents should be stored for later use in an NFPA approved storage locker. (do not place these liquids into an unapproved container or into the waste stream to the landfill.
- f. Accidental discharge into storm system
  - i. To report call 911 Emergency to report a hazardous material spill and call Salt Lake City Public Utilities Department at 801-483-6700.
- g. Clean up all BMP material.

### 4. Documentation

- a. Provide a written report of any discharges into storm drain system immediately.
- b. Provide training on SOPs/SOIs.
- c. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Facilities - Irrigation Excavation Repair and Replacement

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for irrigation excavation, repair and replacement.

#### Procedure:

##### 1. Preparation

- a. Determine where discharge flow will go.
- b. Place inlet protection at nearest downstream storm drain inlet.
- c. Clean Gutters leading to inlet.
- d. Isolate irrigation waterline to be worked on.
- e. Neutralize any chlorine residual before discharging water.

##### 2. Process

- a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
- b. Dial 811 or 1-800-662-4111
- c. Make efforts to keep water from pipeline from entering the excavation.
- d. Direct any discharge to pre-determined area.
- e. Place soils on a tarp, in bucket or directly on a truck to be re-used as backfill. Do not store soils or other materials in the gutter or where it can enter the storm water system.
- f. Backfill and compact excavation.
- g. Haul off excavated soils, other material or stock pile nearby for re-use or to landfill.

##### 3. Clean-Up

- a. Clear gutter/waterway where water flowed.
- b. Clean up all areas around excavation.
- c. Clean up travel path of trucked material.
- d. Clean up the area surrounding the storm water drain.

##### 4. Documentation

- a. Complete a written report if material is discharged into the storm drain system and call Salt Lake City, Public Utilities Department at (801-483-6700).
- b. Provide training on SOPs/SOIs.





## ACTIVITY: Facilities - Pedestrian Walkway, Sidewalk and Plaza Cleaning

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning pedestrian walkways, sidewalks and plazas.

### Procedure:

#### 1. Preparation

- a. Determine if chemical cleaners will be necessary. If chemicals are to be used the procedures outlined in this Standard Operating Procedure/Instruction are to be followed.
- b. Obtain cleaning and disinfecting chemicals that are pH neutral, and present no or minimal impact on the environment.
- c. Employees performing the work must have documented OSHA Hazardous Communications and Blood Borne Pathogen training.
- d. Understand SDS for handling of product.
- e. Complete a Work Hazard Assessment. Assemble and use all appropriate PPE, including but not limited to, rubber boots, water proof pants, eye protection, face shield, apron and the appropriate gloves.
- f. Vehicles must have containment kit on board.
- g. Prepare all trucks and equipment necessary for transportation of contaminated liquids doing all sidewalk cleaning operations.

#### 2. Process

- a. Auto-Scrubbing Machine
  - i. Use a self-contained clean water, chemical distribution and wastewater recovery auto-scrubbing machine. Discharge must be treated as contaminated liquids (See Transporting Contaminated Liquid and Water SOP/SOI).
- b. Power Washing
  - i. Place drain blocking air bags and pump liquid.
  - ii. For human/animal waste or vomit cover with powder or liquid enzyme treatment and wait 10 minutes, spray with disinfectant and wait 10 minutes, then scoop solids up with a shovel or dust pan. Dispose of solids in accordance with local, state and federal standards.
  - iii. Pre-treat paved surface with environmental friendly degreaser.
  - iv. Place chemical feed tube of power washer into tank of pre-mixed disinfecting cleaner.
  - v. Use hot water feature to wash paved surfaces.
  - vi. Follow storm drain cleaning procedures (see Catch Basin Cleaning SOP/SOI) to capture all effluent flowing into gutters or storm water system.

#### 3. Clean-Up

- a. Clean and rinse power washing equipment and place back in the proper storage place.
- b. Follow procedures for Transportation and Disposal of Contaminated Liquids SOP/SOI.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Facilities – Sweeping Plazas, Gutters, Parking Lots, Parking Structures and Sidewalks

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.2.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for sweeping plazas, gutters parking lots parking structures and sidewalks.

### Procedure:

#### 1. Preparation

- a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
- b. Restrict street parking prior to and during sweeping using regulations if possible.
- c. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
- d. Perform preventative maintenance and services on ATLV and sweepers to increase and maintain efficiency.
- e. Determine the right equipment for the job. ATLV (litter and leaves), Armadillo Sweeper (Gutters, silt, salt, gravel, small litter).

#### 2. Process

- a. Areas are to be swept as needed or specified by the city. Business District maps are used to ensure all services are swept at a specified interval.
- b. Drive ATLV and Armadillo sweeper safely and pick up debris.

#### 3. Clean-Up

- a. When full, take the equipment to an approved sweeper cleaning station at the Facilities Shop.
- b. The cleaning station is designed to separate the solids from the liquids.
- c. Once solids have dried out, haul them to the local landfill.
- d. Decant water is to be collected and routed to an approved wastewater collection and treatment facility only.
- e. Place any material in an authorized containment area or receptacle to be sent to the landfill.

#### 4. Documentation

- a. Keep accurate logs to track block face swept and areas still requiring sweeping.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Facilities - Transporting Contaminated Liquid and Water

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for transporting contaminated liquid and water.

### Procedure:

#### 1. Preparation

- a. Employees performing the work must have documented OSHA Hazardous Communications training.
- b. Understand SDS sheets for handling of product.
- c. Obtain any necessary signage, permits or licenses necessary to transport waste.
- d. Utilize trailer and tank with an approved containment tank for transportation of contaminated liquids.
- e. Make sure transport vehicle has containment kit and clean-up equipment and material on board.
- f. Determine the authorized waste treatment facility used to properly dispose of contaminated liquids.
- g. Complete a Work Hazard Assessment. Assemble and don all appropriate PPE; including but not limited to rubber boots, water proof pants, eye protection, face shield, apron and the appropriate gloves.

#### 2. Process

- a. Load and transport in manner to minimize human contact, spillage and tracking of liquids.
- b. Check truck for spillage.
- c. Utilize approved route of transport.

#### 3. Clean-Up

- a. Clean route of transport to provide cleaning of any spilled material.
- b. Wash out equipment truck and other equipment in designated wash area.

#### 4. Accidental discharge into Storm System

- a. To report call 911 Emergency to report a hazardous material spill and call Salt Lake City, Public Utilities Department at 801-483-6700.

#### 5. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Facilities - Transporting Soil and Gravel

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the transportation of soil and gravel.

#### Procedure:

##### 1. Preparation

- a. Perform pre-trip inspection of trucks and trailer.
- b. Dry out wet materials before transporting.
- c. Make sure you have a tarp to cover load during transport.
- d. Make sure you know and understand the SWPPP requirements for the site you will be working at. Training must take place before beginning transportation of soil and gravel.
- e. Identify an authorized cleanout containment area.
- f. Determine the location at which the truck and other equipment will be cleaned afterwards.

##### 2. Process

- a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
- b. Observe load limits for the equipment used and do not exceed load limits.
- c. Make sure not to overfill materials when loading trucks.
- d. Cover truck or trailer bed with a secured tarp before transporting.
- e. Follow the SWPPP requirements for the specific site to/from which the materials are being hauled.

##### 3. Clean-Up

- a. Use broom or sweeper to clean up any materials tracked out on the road from site.
- b. Wash out truck and other equipment when needed in properly designated areas. This material can be placed in a containment to be entered into the waste stream to the landfill.

##### 4. Documentation

- a. Keep records in the comment section of the work order of any material that is tracked out of site and what was done to clean it up and how long it took to clean up and what the weather conditions were at the time.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Facilities – Use, Storage and Disposal of Chemicals

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for handling and transporting chemicals and spill response.

#### Procedure:

##### 1. Preparation

- a. Understand SDS sheets for handling of product.
- b. Determine proper place of handling.
- c. Have necessary containment and spill kits at handling place.
- d. Establish location of any storm drain inlet and implement appropriate BMPs to protect the storm drain from spills.

##### 2. Process

- a. Begin transfer process.
- b. Discontinue operations if spill occurs.
- c. Disconnect and store handling equipment.

##### 3. Clean-Up

- a. Clean up spills with proper material.
- b. Dispose of contaminated material at appropriate facility.
- c. Clean up any implemented BMPs.
- d. Store chemicals in secondary containment in accordance with SDS sheet.
- e. Dispose of chemicals at appropriate facility in accordance with all State and Federal standards. See SDS for additional disposal instructions.

##### 4. Documentation

- a. Report spills to SLC Public Utilities.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Fleet – Leaky Vehicle Maintenance and Repair

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7. & 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for maintenance and repair activities of leaky vehicles such that discharge to the MS4 is minimized to the maximum extent practicable.

### Procedure:

#### 1. Preparation

- a. Conduct routine vehicle maintenance and repair activities in order to minimize the possibility of leakage.
- b. Regularly inspect vehicles for leaks and spills. Maintain records of inspections in daily inspection log book.

#### 2. Process

- a. Upon the arrival of a leaky vehicle, the service counter is to be notified.
- b. The vehicle will then be brought into the nearest available shop. If no shop is available, or the leak is discovered after hours, a spill kit will be used to contain any material.
- c. After leaking is ceased, use dry clean up methods (i.e. lay absorbent, sweep, etc.) to clean any spilled fluids.
- d. If feasible, store vehicles and equipment indoors.
- e. Never store leaky vehicles over a storm drain.
- f. Use drip pans and other BMPs when conducting routine maintenance and repair activities.

#### 3. Clean-Up

- a. Clean up all BMP material.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Fleet – Vehicle and Heavy Equipment Storage

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7. & 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for storing vehicles and heavy equipment in such a way that storm water quality is protected.

#### Procedure:

##### 1. Preparation

- a. Inspect parking and heavy equipment storage areas for strains/leaks on a regular basis.
- b. Provide drip pans or adsorbents for leaking vehicles and/or heavy equipment.

##### 2. Process

- a. Whenever possible, store vehicles and equipment inside where floor drains have been connected to sanitary sewer system.
- b. When inside storage is not available, vehicles and equipment will be parked in the approved designated areas.
- c. Conduct routine maintenance on vehicles and equipment to prevent leaks as much as possible.
- d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leak to collect the drip.
- e. The shop will provide a labeled location to empty and store drip pans.
- f. If any leaks are discovered, a drip pan will be used to collect the fluids and vehicle or equipment will be scheduled for repairs.
- g. Clean up all spills and leaks using dry methods.
- h. Never store leaking vehicles or equipment over a storm drain.

##### 3. Clean-Up

- a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.
- b. The paved surfaces around the buildings will be swept every two weeks, weather permitting.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Fleet – Washing Vehicles

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### **Permit Requirement 4.2.6.7., 4.2.6.7.1. & 4.2.6.7.4.**

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for washing vehicles.

### **Procedure:**

#### **1. Preparation**

- a. Inspections are to be performed on wash bay to ensure waste water is contained.
- b. Inspections are to be done on waste water containment to prevent overflow to storm drain.
- c. Provide wash area inside as well as an outdoor wash pad or bay. All approved wash areas must be connected to the sanitary sewer system.
- d. Direct flow away from storm drain.

#### **2. Process**

- a. Wash vehicles in designated wash area/wash bay only.
- b. Minimize water and soap use when washing vehicles inside the approved wash area.
- c. Soap should not be used when washing vehicles outside the approved wash area. Water only.
- d. Use hoses with automatic shut off nozzles to minimize water usage.
- e. When washing vehicles, it is the operators' responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
- f. Never wash vehicles over a storm drain.

#### **3. Clean-Up**

- a. When waste water containment is full, contact facilities for it to be cleaned out.
- b. Sweep wash areas to collect solids to prevent them from washing down the drain system.
- c. Clean solids from the settling pits on an as needed basis.

#### **4. Documentation**

- a. Provide training on SOPs/SOIs.





## ACTIVITY: Gallivan Center – Sweeping Parking lots, Plazas, Gutters, Parking Structures and Sidewalks

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for sweeping plazas, gutters parking lots parking structures and sidewalks for Salt Lake City owned and operated facilities.

#### Procedure:

##### 1. Preparation

- a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
- b. Restrict street parking prior to and during sweeping using regulations if possible.
- c. Increase sweeping frequency just before the rainy season.
- d. Determine the right equipment for the job.

##### 2. Process

- a. Sweep as needed or specified by the needs of the facility in order to keep the area clean to minimize the pollutant runoff.
- b. Finish work using the appropriate tools.

##### 3. Clean-Up

- a. Place any material in an authorized containment area or receptacle to be sent to the landfill.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Catch Basin Cleaning

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning catch basins.

### Procedure:

#### 1. Preparation

- a. See BMP list for cleaning schedule.
- b. Clean sediment and trash off grate.
- c. Do visual inspection on outside of grate.
- d. Make sure nothing needs to be replaced.
- e. Do inside visual inspection to see what needs to be cleaned.

#### 2. Process

- a. Clean using a high powered vacuum truck to start sucking out standing water and sediment.
- b. Use a high pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
- c. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten down stream of pipe.
- d. Move truck downstream of pipe to next catch basin.

#### 3. Clean-Up

- a. When vacuum truck is full of sediment take it to the designated location to dump all the sediment out of truck into a drying bed.
- b. When it evaporates, clean it up with a backhoe, put it into a dump truck and take it to the landfill.

#### 4. Documentation

- a. Keep logs of the number of catch basins cleaned.
- b. Record the amount of waste collected.
- c. Keep any notes or comments of any problems.
- d. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Creek Management

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for creek management.

#### Procedure:

##### 1. Preparation

- a. Monitor streams on a weekly basis.
- b. Check culverts and crossings after every storm.
- c. Maintain access to stream channels wherever possible.
- d. Identify areas requiring maintenance.
- e. Determine what manpower or equipment will be required.
- f. Identify access and easements to area requiring maintenance.
- g. Determine method of maintenance that will be least damaging to the channel.
- h. Obtain Stream Alteration Permit.

##### 2. Process

- a. Remove unwanted material (debris, branches, soil) from the creek channel and place it in a truck to be hauled away.

##### 3. Clean-Up

- a. Stabilize all disturbed soils.
- b. Remove all tracking from paved surfaces near maintenance site, if applicable.
- c. Haul all debris or sediment removed from area to approved dumping site.

##### 4. Documentation

- a. Keep log of actions performed including date and individuals involved.
- b. Record the amount of materials removed or imported.
- c. Keep any notes or comments of any problems.
- d. Use “before and after” photographs to document activities as applicable.
- e. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Curb and Pavement Marking

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for marking curbs and pavement.

#### Procedure:

##### 1. Preparation

- a. Calculate the amount of paint required for the job.
- b. Use water based paints if possible.
- c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes.
- d. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.
- f. Prepare surfaces to be painted without generating wastewater by sandblasting and/or scraping.
- g. Thoroughly sweep up all sand, blasting, and/or paint scrapings.
- h. If paint stripping is needed, use a citrus-based paint remover whenever possible, this is less toxic than chemical strippers.
- i. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the filter and collect the debris.

##### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material/paint, spills or wastewater.
- b. Paint curb/pavement.
- c. Prevent over-spraying of paints and/or excessive sandblasting.
- d. Use drip pans and drop clothes in areas of mixing paints and painting.
- e. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
- f. Have available absorbent material and other BMPs ready for an accidental paint spill.

##### 3. Clean-Up

- a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
- b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
- c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.



## ACTIVITY: Golf – Curb and Pavement Marking

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- d. Cleanup oil based paints with paint thinner. Never clean oil based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and/or store in approved drum for recycling.
- e. Dispose of waste collected by placing it in a garbage container. Left-over paint and solvents should be stored for later use (do not place these liquids in the garbage).

### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Write-up/report of any discharges into storm drain system.
- c. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Golf – Detention Pond Cleaning

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning detention ponds.

### Procedure:

#### 1. Preparation

- a. Schedule the pond cleaning work for a time when dry weather is expected.
- b. Remove any sediment and trash from grates, placing it in a truck for disposal.
- c. Do a visual inspection to make sure any grates, structures, manholes, boxes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
- b. Start cleaning basin by using backhoe to remove debris and sediment off the bottom.
- c. Continue cleaning structures and pond bottom as necessary by sweeping and shoveling.
- d. Put all material removed from the pond into a dump truck.
- e. Some structures may require use of a vactor truck. If so use the same procedures described for cleaning catch basins.

#### 3. Clean-Up

- a. After cleaning basins, clean off the concrete pads using dry methods (sweeping and shoveling).
- b. Make sure they are swept up and clean.
- c. Take the material that was removed to the landfill for final disposal.

#### 4. Documentation

- a. Keep logs of each detention basin/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
- b. Record the amount of waste collected.
- c. Keep any notes or comments of any problems.
- d. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Planned Waterline Excavation Repair/Replacement

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for planned waterline excavation repair and replacement.

### Procedure:

#### 1. Preparation

- a. Determine where discharge flow will go.
- b. Place inlet protection at nearest downstream storm drain inlet.
- c. Clean gutters leading to inlet.
- d. Isolate waterline to be worked on.
- e. Neutralize any chlorine residual before discharging water.
- f. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure PPE is worn before starting work.
- b. Make efforts to keep water from pipeline entering the excavation.
- c. Direct any discharge to pre-determined area.
- d. Backfill and compact excavation.
- e. Haul off excavated material or stock pile nearby.

#### 3. Clean-Up

- a. Clear gutter/waterway where water flowed.
- b. Clean up all areas around excavation.
- c. Clean up travel path of trucked material.

#### 4. Documentation

- a. Complete all paperwork.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Secondary Road Maintenance

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for secondary road maintenance.

#### Procedure:

##### 1. Preparation

- a. Determine length, amount, and type of road base or gravel that will be needed.
- b. Determine proper equipment to be used and or any safety hazards.
- c. Design proper drainage: slopes, berms etc.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Have truck drivers follow a designated route for hauling in the soil (See SOP/SOI for transporting soil and gravel).
- b. If soil is too dry to achieve compaction, loosen surface material and moisture condition.
- c. Smooth or grade soil with the desired crown or cross-slope.
- d. Compact soil.

##### 3. Clean-Up

- a. Replace filter fabric with washed rock (if necessary) on monthly maintenance.
- b. Clean up equipment according to the SOP for cleaning equipment.
- c. Clean up any debris on traveled roads, and dispose of it in the landfill.

##### 4. Documentation

- a. Fill out daily activity report in log book or journal. Include date, time personnel, and location.
- b. Provide training on SOPs/SOIs.





## ACTIVITY: Golf – Unplanned Waterline Excavation Repair/Replacement

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the need of an unplanned water line excavation repair or replacement.

#### Procedure:

##### 1. Preparation

- a. Make sure service trucks have wattles, gravel bags, or other materials for inlet protection.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Ensure PPE is worn before starting work.
- b. Slow the discharge.
- c. Inspect flow path of discharged water.
- d. Protect water inlet areas.
- e. Follow planned repair procedures.
- f. Haul off spoils of excavation.
- g. Consider use of silt filter bags on pumps.

##### 3. Clean-Up

- a. Repair eroded areas as needed.
- b. Follow planned repair procedures.
- c. Clean up the travel path of trucked excavated material.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Golf – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for waterline flushing after construction/system disinfection with discharge to storm drain.

#### Procedure:

##### 1. Preparation

- a. Determine chlorine content of discharged water, and select de-chlorination equipment to be used.
- b. Determine flow path of discharge.
- c. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern (inlets in flow path) from material.
- b. Install and monitor de-chlorination equipment.
- c. Sweep and clean flow path.
- d. Use diffuser to reduce velocities.

##### 3. Clean-Up

- a. Clean up all BMP material including inlet protection.
- b. Clean flow paths.
- c. Remove equipment from flush point.

##### 4. Documentation

- a. Document residual test of discharged water.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Golf – Waterline Flushing after Construction/System Disinfection with Discharge used for Dust Control

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for waterline flushing after construction/system disinfection in which the discharge is used for dust control or compaction.

#### Procedure:

##### 1. Preparation

- a. Determine chlorine content of discharged water.
- b. Determine appropriate construction activity for treatment.

##### 2. Process

- a. Flush to tanker for disposal on unpaved construction activity for dust control or compaction.
- b. Conform that application of water is in appropriate location.

##### 3. Clean-Up

- a. Remove equipment from flush point.

##### 4. Documentation

- a. Document residual test of discharged water.
- b. Document the location of discharged water.
- c. Provide training on SOPs/SOIs.



## ACTIVITY: Parks – Call-In Inspections

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for responding to suspected illicit discharges.

#### Procedure:

##### 1. Preparation

- a. Have a system in place to receive phone calls and collect information regarding suspected illicit discharges.

##### 2. Process

- a. Use the Incident Tracking Sheet to collect the appropriate information from the caller. Then, transfer the Incident Tracking Sheet to the proper authority (i.e. department head, storm water specialist, construction inspector, code enforcement officer, or other assigned personnel).
- b. Promptly investigate reported incidents.
- c. If an illicit discharge of unknown source is confirmed, follow the procedure of SOP/SOI IDDE – Tracing Illicit Discharges.
- d. If an illicit discharge known source is confirmed, follow the procedure of SOP/SOI IDDE – Removing Illicit Discharges.

##### 3. Clean-Up

- a. Clean catch basin, clean storm drain, or initiate spill response, as applicable. Follow relevant SOPs/SOIs.

##### 4. Documentation

- a. File all completed forms (i.e. incident tracking, catch basins cleaning, storm drain cleaning).
- b. Document any further action taken.
- c. Review incidents reported by citizens on an annual basis to look for patterns of illicit discharges and to evaluate the call-in inspection program.
- d. Provide training on SOPs/SOIs.



## ACTIVITY: Parks – Chemical Application of Pesticides, Herbicides, Fertilizers

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.4.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the application of pesticides, herbicides, and fertilizers

### Procedure:

#### 1. Preparation

- a. Minimize the use of fertilizers, pesticides and herbicides by planting drought tolerant plants and by utilizing low impact alternative landscaping.
- b. Notify your immediate Supervisor that you will be handling pesticides, herbicides or fertilizer.
- c. Ensure that your state Chemical Handling Certification is complete and up-to date before handling any chemicals.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.
- e. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- f. Use pesticides only if there is an actual pest problem.
- g. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for the best results (Read the Label).
- h. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- i. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.

#### 2. Process

- a. Always follow the manufacturer's recommendations for mixing, application and disposal (Read the Label).
- b. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material/paint, spills or wastewater.
- c. Do not mix or prepare pesticides for application near storm drains, preferably mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- d. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting) of pesticides and fertilizers.

#### 3. Clean-Up

- a. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
- b. Triple rinse containers, and use rinse water as product.
- c. Store all chemicals as per owner's recommendation. Always follow all federal and state regulations governing use, storage disposal of fertilizers, herbicides or pesticides and their containers (Read the Label).
- d. Use spill kits.



## ACTIVITY: Parks – Chemical Application of Pesticides, Herbicides, Fertilizers

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### 4. Documentation

- a. Keep copies of SDS sheets for all pesticides, fertilizers, and other hazardous products used.
- b. Record fertilizing and pesticide application activities, including date, individual who performed the application, amount of product used and approximate area covered.



## ACTIVITY: Parks – Cleaning Equipment

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.4.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning equipment.

#### Procedure:

##### 1. Preparation

- a. Review process with all employees

##### 2. Process

- a. Wipe off dirt, dust and fluids with disposable towel.
- b. Wash equipment in approved wash station.
- c. Dispose of wash water in sanitary sewer to be treated. Never flush wash water down storm drain.

##### 3. Clean-Up

- a. Dispose of towels in proper trash receptacle.
- b. Sweep floor and dispose of debris.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.



## ACTIVITY: Parks – Fueling

Effective Date: 11/1/2017

Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for fueling vehicles.

#### Procedure:

##### 1. Preparation

- a. Train employees on proper fueling methods and spill cleanup techniques.
- b. Absorbent spill clean-up materials including spill kits shall be available in fueling areas.
- c. Ensure mobile fueling vehicles utilize approved containers and are equipped with spill kits.
- d. Dispose of all absorbent material properly after use.

##### 2. Process

- a. Shut off the engine.
- b. Ensure that the fuel is the proper type of fuel for the vehicle.
- c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
- d. Fuel vehicle carefully to minimize drips to the ground.
- e. Fuel tanks shall not be 'topped off.'
- f. Mobile fueling shall be minimized. Whenever practical, vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
- g. When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.

##### 3. Clean-Up

- a. Immediately clean up spills using dry absorbent (e.g. kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials. Notify supervisor of any spills or incidents.
- b. Large spills shall be contained as best as possible and the HazMat team should be notified ASAP.
- c. Immediately report any spills that reach a storm drain to your supervisor.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.
- b. Document all reportable spills in accordance with all local, state and federal requirements.





## ACTIVITY: Parks – Garbage and Dumpster Management for Parks and Open Space

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for managing dumpsters and trash containers in City owned parks and open space.

#### Procedure:

##### 1. Preparation

- a. Train employees on proper trash disposal.
- b. Locate dumpsters and trash cans in a convenient, easily observable areas.
- c. Establish a sufficient number of containers in areas known to produce large amounts of garbage in order to prevent trash overflow.
- d. In areas that generate a lot of pet waste, place signage that encourages the proper disposal of pet waste.
- e. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
- f. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
- g. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with storm water.

##### 2. Process

- a. Inspect garbage bins for leaks regularly, and have repairs made immediately by a responsible party.
- b. Request/use dumpsters, and trash cans with lids and without drain holes.
- c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.

##### 3. Clean-Up

- a. Keep areas around dumpsters clean of all garbage.
- b. Have garbage bins emptied regularly to keep from overfilling.
- c. Wash out bins or dumpsters as needed to keep odors from becoming a problem.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.



## ACTIVITY: Parks – Mowing and Trimming

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for mowing and trimming lawns.

#### Procedure:

##### 1. Preparation

- a. Process overview with all employees
- b. Check the oil and fuel levels of the mowers and other equipment, fill if needed.

##### 2. Process

- a. Ensure PPE is worn (steel toe boots, eye and hearing protection).
- b. Mow and trim lawn.
- c. Sweep or blow clippings to grass areas.

##### 3. Clean-Up

- a. Mowers are to be scraped and brushed at shop – dry spoils are dry swept and disposed of.
- b. Wash equipment in approved wash station.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.



## ACTIVITY: Parks – Open Space Management

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the management of open spaces.

#### Procedure:

##### 1. Preparation

- a. Provide a regular observation and maintenance of parks, golf courses, and other public open spaces.

##### 2. Process

- a. Ensure that any storm drain or drainage system components on the property are properly maintained.
- b. Avoid placing bark mulch (or other floatable landscaping materials) in stormwater detention areas or other areas where stormwater runoff can carry the mulch into the storm drainage system.
- c. Follow all SOPs/SOIs related to irrigation, mowing, landscaping, and pet waste management.

##### 3. Clean-Up

- a. Keep all outdoor work areas neat and tidy. Clean by sweeping instead of washing whenever possible. If areas must be washed, ensure that wash water will enter a landscaped area rather than the storm drain. Do not use soap for outdoor washing.
- b. Pick up trash on a regular basis.

##### 4. Documentation

- a. Document any observed deficiencies for correction or repair.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Parks – Opportunistic Illicit Discharge Observation

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.4., 4.2.3.5., 4.2.3.5.1. & 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for opportunistic illicit discharge observation.

### Procedure:

#### 1. Preparation

- a. Be alert for potential illicit discharges to the municipal storm water system while going about normal work activities.

#### 2. Process

- a. Call the appropriate authority (i.e. department head, storm-water specialist, construction inspector, code enforcement officer or a supervisor) if you see evidence of an illicit discharge.
- b. Assess the general area of the illicit discharge to see if you can identify its source.
- c. Whenever possible, take photographs of the suspected illicit discharge.
- d. Responding storm-water department personnel or code enforcement officer will complete the following:
  - i. Use the IDDE Incident Tracking Sheet to document observations.
  - ii. Obtain sample for visual observation and complete an Outfall Inspection Form, if applicable.
  - iii. Follow the procedure of SOP IDDE – Tracing Illicit Discharges.

#### 3. Clean-Up

- a. Clean catch basin, clean storm drain, or initiate spill response, as needed. Follow relevant SOPs/SOIs.

#### 4. Documentation

- a. File all completed forms (i.e. Incident Tracking Form, Outfall Inspection Form, Catch Basin Cleaning Form, and Storm Drain Cleaning Log).
- b. Document any further action taken.
- c. Provide and document training on SOPs/SOIs.



## ACTIVITY: Parks – Painting

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOP/SOIs) for the application of various paints to any exterior surface including walls, curbs, turf, streets and any other projects that require painting.

### Procedure:

#### 1. Preparation

- a. Assess the job and conditions i.e. weather, type of paint, location, size of project, etc.
- b. Obtain the safety data sheet (SDS) and follow the instructions for any materials/paint products being used. Determine the toxicity of the waste material and whether it is considered hazardous.
- c. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- d. Establish appropriate waste containment and disposal methods according to the SDS.
- e. Prepare only enough material/paint for the job thus minimizing leftover material/paint.
- f. Ensure a spill kit is at each painting location. In the event of a spill, refer to the spill SOP/SOI.
- g. Acquire appropriate personal protective equipment (PPE) according to department policy and SDS.

#### 2. Process

- a. Mix material/paint away from any waterways including, but not limited to storm drains, gutters, wells, canals, etc. When mixing refer to SDS.
- b. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material/paint, spills or wastewater.
- c. Once the above set of instruction have been accomplished work may begin.

#### 3. Clean-Up

- a. Clean up all BMP material.
- b. Return any excess paint from trays, rollers, sprayers or brushes to the original container if available or into an approved container and seal them.
- c. With water, rinse trays, rollers, sprayers and brushes in designated rinse areas only. Avoid rinsing/washing near any storm drains, gutters, wells, canals, etc.
- d. Allow rags to dry and dispose in accordance with all local, state and federal standards (see SDS).
- e. Store paint canisters such that exposure to precipitation is minimized to the maximum extent practicable (see SDS for storage instructions).
- f. Dispose of any unused or unwanted material/paint in accordance with all local, state and federal standards (see SDS).

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Parks – Pet Waste

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the management of pet waste.

#### Procedure:

##### 1. Preparation

- a. Adopt and enforce ordinances that require pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, make sure they are clearly defined.
- b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.

##### 2. Clean-Up

- a. Provide temporary storage in a covered waste container and dispose of properly. Preferred method of disposal is at a solid waste disposal facility.

##### 3. Documentation

- a. Document problem areas for possible increased enforcement and/or public education signs.



## ACTIVITY: Parks – Planting Vegetation (Seeds)

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for planting vegetation from seeds.

#### Procedure:

##### 1. Preparation

- a. Call the Blue stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
- b. Dial 811 or 1-800-662-4111
- c. Decide on the application rate, method, water source, and ensure adequate materials are on hand.
- d. Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.

##### 2. Process

- a. Place the seed and any cover using the pre-determined application method (and rate).

##### 3. Clean-Up

- a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.
- b. Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area.
- c. Transport spoils to their designated fill or disposal area.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Parks – Planting Vegetation (Starters)

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for planting vegetation from starters.

#### Procedure:

##### 1. Preparation

- a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done to reveal the location of any underground utilities.
- b. Dial 811 or 1-800-662-4111
- c. Decide where any spoils or landscape waste will be taken.

##### 2. Process

- a. Dig holes; place spoils on a tarp near the hole where they may easily be placed back around roots. Avoid placing spoils in gutter.
- b. Bring each plant near the edge of the hole dug for it.
- c. Check the depth of the hole and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.
- d. Carefully remove pot or burlap.
- e. Place the plant in the hole.
- f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
- g. Water the plant.
- h. Stake the plant, if necessary, to stabilize it.

##### 3. Clean-Up

- a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.
- b. Sweep dirt from surrounding pavements(s) into the planter area.
- c. Transport spoils to their designated fill or disposal area.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.





## ACTIVITY: Parks – Transporting Equipment

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for transporting equipment.

#### Procedure:

##### 1. Preparation

- a. Determine equipment needed for transport and method (trailer, truck bed) required to transport equipment.
- b. Conduct pre-trip inspection of equipment.
- c. Inspect and test rigging devices and tie-off points.

##### 2. Process

- a. Safely load and secure equipment on trailer or truck.
- b. Safely load and secure fuel containers for equipment usage.
- c. Secure any fuel containers for transportation to avoid spillage. If spillage occurs, use spill cleanup and dispose of cleanup appropriately.

##### 3. Clean-Up

- a. Off load equipment
- b. Store equipment and trailer in proper location.
- c. Conduct post-trip inspection of equipment.
- d. Wash equipment, if needed away from any storm drains, according to the SOP/SOI Cleaning Equipment.

##### 4. Documentation

- a. Pre-trip and post trip inspection report.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Chemical Treatment of Vegetation - Waterways

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for treating ditches, canals and other water bodies with chemicals including but not limited to Clearigate.

#### Procedure:

##### 1. Preparation

- a. Obtain and read SDS prior to the handling of any chemical. Keep a copy of SDS during work for reference.
- b. Follow all instructions and obtain all required equipment necessary for applying Clearigate and/or other chemicals as outlined in SDS.
- c. Acquire appropriate personal protective equipment (PPE) according to SDS.
- d. Notify Salt Lake City Dispatch and Storm Water Quality personnel of date, time and location at which chemicals will be used.
- e. Certified employees are required for Clearigate and other chemical application.
- f. Mix only the required amount for the task to be completed.
- g. Whenever possible, mix chemicals at designated locations (shop).
- h. Ensure vehicle(s) is equipped with a first aid kit, eye wash kit and spill kit.
- i. Complete a pre-trip inspection on vehicle(s) and inspect all equipment to ensure proper working condition.

##### 2. Process

- a. Evaluate and set up worksite and secure surrounding area.
- b. Ensure appropriate PPE is properly worn.
- c. Follow directions and mix chemicals according to the user manual and SDS.
- d. Ensure BMPs are properly implemented.
- e. BMPs may be left to be removed at a later date, if necessary.

##### 3. Clean-Up

- a. Clean up area and worksite.
- b. Triple rinse containers, pumps and other equipment with reusable rinse water at designated areas when possible (see Triple Rinse SOI/SOP).
- c. Secure all equipment and any leftover chemicals for transportation back to storage facility.
- d. Store all equipment in secure area.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Notify your immediate supervisor of all spills.
- c. Document spills in accordance all local, state and federal requirements.



## ACTIVITY: Public Utilities – Cleaning Sewer Main Lines

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning sewer main lines.

### Procedure:

#### 1. Preparation

- a. Acquire appropriate equipment i.e. 2500 gallon Jetter or Combination Vacuum truck, iPad, assortment of cleaning nozzles, digging bar, bucket, cones, 8" and 10" trap/grit catcher, pipe wrenches, hook rope.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.
- c. Perform all pre-trip requirements to meet state and federal law for CDL vehicles and bring any potential problems to the supervisor before leaving the yard.
- d. Check the assigned truck to make sure it has all the tools before leaving the yard to help prevent any unnecessary trips back to the yard.
- e. Have a clear understanding of where you are going to clean in the city.

#### 2. Process

- a. Ensure appropriate PPE is worn.
- b. Upon arrival at the map and line location, each worker and vehicle will be given individual lines to clean.
- c. These Jetter trucks are considered to be emergency equipment and are to be fueled at night to be prepared for emergency situations or extended stay at the job site.
- d. The truck goes to the manhole assigned and removes the lid and does the initial inspection of the manhole which consists of looking at the ring and cover for cracks or breaks, then down into the invert to see if there exists any blockage of the flow of water and if there is another intersecting line check the radius to make sure that the water flows around properly.
- e. The worker will then start to shoot the Jetter hose up the line once the tiger tail is secured to prevent damaging the pressure hose. Continuously monitor the water to look for evidence of grease, roots, grit or any debris that might be present in the line. After the hose has been shot out the desired distance (to the next upstream manhole) start to retrieve the hose from the line and again watch to see what material may be present in the line.
- f. After the hose has been retrieved from the line, remove the material from the manhole either by going into the manhole, or by shoveling the debris out, or vacuum the material out by the use of the vacuum combo unit.
- g. After the debris has been removed, replace the manhole cover after cleaning the rim of the ring to allow the cover to sit flush with the ring.
- h. Go to the next manhole and repeat the same process.

#### 3. Clean-Up

- a. In the event of a spill of any kind refer to the Spill Response SOP/SOI.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Cleaning Storm Drain Main Lines

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for cleaning storm drain main lines and is to be used in conjunction with the “Public Utilities – Dredged Material Management – Process List” document for guidance on proper disposal of dredged materials.

### Procedure:

#### 1. Preparation

- a. See BMP list for cleaning schedule.
- b. Acquire all appropriate equipment required; proper PPE, cleaning nozzles, digging bar, bucket, cones, pipe wrenches, hook rope etc. Note: 2 employees per 2500 gallon Vactor truck.
- c. Perform all pre-trip requirements to meet state and federal law for CDL vehicles and bring potential problems to their supervisor before leaving the yard.
- d. Check assigned truck to make sure they have all tools necessary before leaving the yard in order to prevent unnecessary trips back to the yard.
- e. Have a clear understanding of where they are going to clean in the city.

#### 2. Process

- a. Upon arrival at the map and line location, each worker and vehicle will be given individual lines to clean.
- b. Ensure that the Vactor contains all safety signs and cones and protective equipment in order for each Vactor truck to be set up in the street.
- c. The truck goes to the manhole assigned, remove the lid and perform the initial inspection of the manhole. This consists of looking at the ring and cover for cracks or breaks, then down into the invert checking for blockage of flow. If there is an intersecting line, check the radius to make sure water flows around properly.
- d. Once the tiger tail is secured, start to shoot the rodder hose up the line. Continuously monitor the water to look for evidence of grease, roots, grit or any debris that may be present in the line. After the hose has been shot out to the desired distance (to the next upstream manhole), start to retrieve the hose from the line while monitoring what material may be present in the line.
- e. After the hose has been retrieved from the line, remove the material from the manhole either by entering the manhole and shoveling debris out, or vacuum the material out.
- f. After debris has been removed, clean the rim of the ring to allow the cover to sit flush with the ring. Replace the manhole cover.
- g. Take spoils from Vactor trucks to the drying beds at the SLCPOTW.

#### 3. Clean-Up

- a. Put away all safety signs, cones and protective equipment.
- b. Return to the yard.

#### 4. Documentation

- a. Record amount of material removed and disposed of.
- b. In the event of a spill, refer to the spill response SOP.
- c. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Mixing Concrete

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for mixing concrete.

### Procedure:

#### 1. Preparation

- a. Assess the job and conditions i.e. weather, location, size of project, etc.
- b. Obtain all necessary materials including:
  - Masonry sand (2.5 yds.)
  - $\frac{3}{4}$ " washed gravel (2.5 yds.)
  - Cement bags
  - Container of water
  - Rinse buckets for tools
  - Proper PPE.
- c. The driver of the vehicle will perform a pre-trip inspection.
- d. Sand, gravel and cement bags will be loaded first thing in the morning and water will be topped off in the container.
- e. Ensure that trucks will have all required tools to complete the task.
- f. Acquire appropriate personal protective equipment (PPE) according to department policy and SDS.
- g. Determine the location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.

#### 2. Process

- a. Place 40 heaping shovels full of gravel in the mixer along with 2 five-gallon buckets of water and one bag of cement powder. Allow the concrete to mix thoroughly.
- b. Place 30 heaping shovels full of sand let it mix in. Monitor to ensure thorough mixing.
- c. Put in a second bag of concrete and add water to obtain the correct consistency.
- d. Add 20 more shovels full of gravel, allowing it to mix in.
- e. Then put in 10 shovels of sand. Let it mix to an even consistency by adjusting the amount of water as needed.
- f. If cement needs to be thickened, add more cement powder and continue to monitor.
- g. Continue to add sand and gravel as needed to fill the barrel of the mixer.
- h. This will complete the mixing for the 1/3 yard mixer.

#### 3. Clean-Up

- a. Clean up workspace in accordance with all local, state and federal standards.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. In the event of a spill see Spill Response SOP/SOI.



## ACTIVITY: Ditch Management

Effective Date: 11/11/2017

Revision Date: 12/13/2021

Prepared by: Kelly Brown

Reviewed by: Greg Archuleta

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for ditch management and is to be used in conjunction with the “Public Utilities – Dredged Material Management – Process List” document for guidance on proper disposal of dredged materials.

### Procedure:

#### 1. Preparation

- a. Monitor ditches on a regular basis.
- b. Maintain access to ditch channels wherever possible.
- c. Contact affected property owners and utility owners.

#### 2. Process

- a. Identify areas requiring maintenance.
- b. Determine what manpower or equipment will be required.
- c. Identify access and easements to area requiring maintenance.
- d. Determine method of maintenance that will be least damaging to the channel and adjacent properties or utilities.
- e. Whenever feasible dredged material should be placed in a contained area for dewatering that discharges to the sanitary sewer (with approval of local authorities).

#### 3. Clean-Up

- a. Stabilize all disturbed soils.
- b. Remove all tracking from paved surfaces near maintenance site, if applicable.
- c. Haul all debris and or dewatered sediment removed from the area to an approved dumping site.

#### 4. Documentation

- a. Keep log of actions performed including date and individuals involved.
- b. Record the amount of materials removed or imported.
- c. Keep any notes or comments of any problems.
- d. Use “before” and “after” photographs to document activities as applicable.
- e. Provide training on SOPs/SOIs.

5. Any other treatment and disposal method shall be approved by UDWQ.

6. Some materials removed from storm drain and open channels may require special handling and disposal, and may not be authorized to be disposed of in a landfill.



## ACTIVITY: Dredged Material Management – Process List

Effective Date: 8/1/20219

Revision Date: 12/13/2021

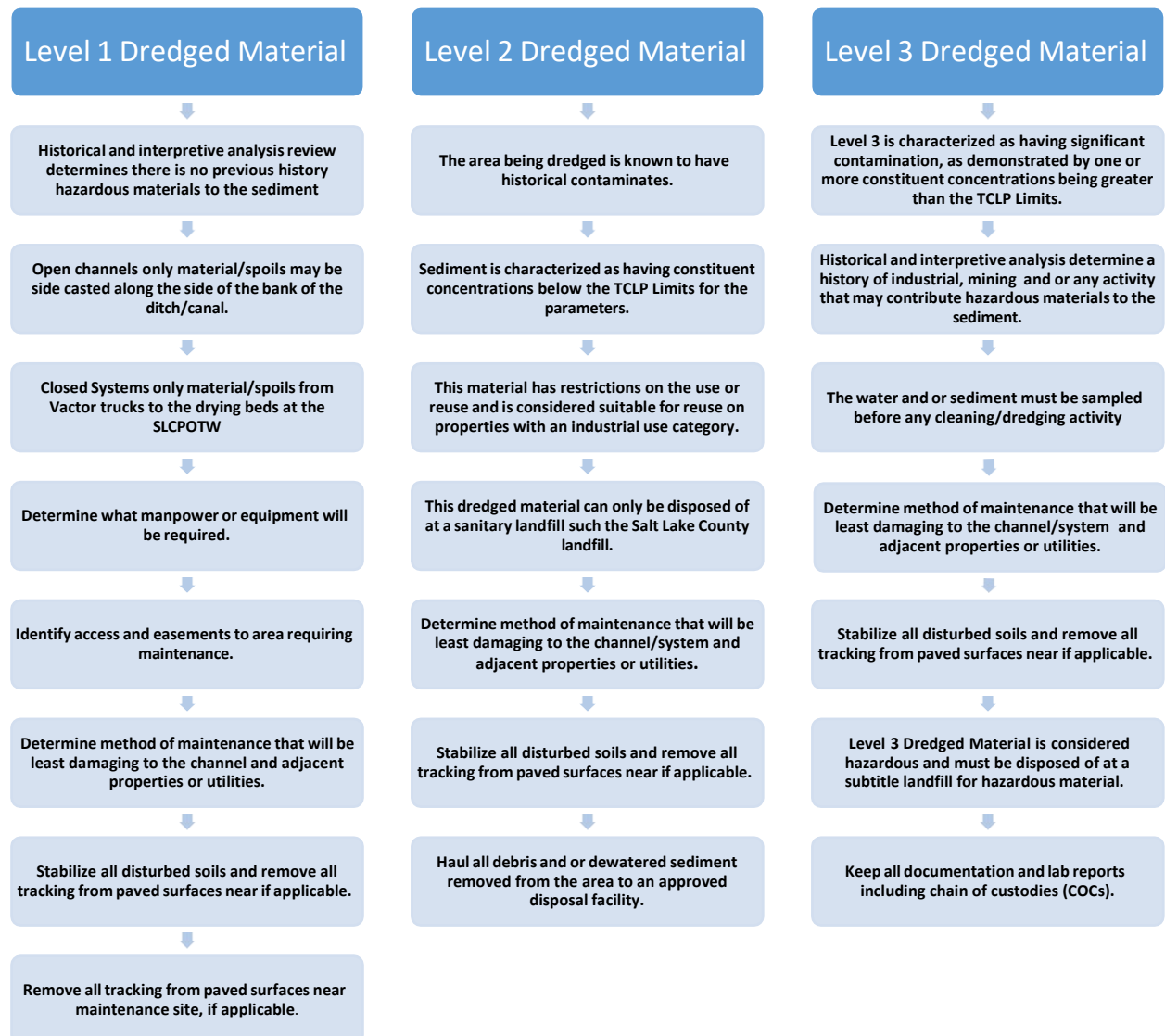
Prepared by: Greg Archuleta

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to the maximum extent practicable (MEP), from Dredged Material Management Activities within Salt Lake City.

**Risk Identification:** Identify area scheduled for cleaning/dredging; taking into consideration the land use, any historical records including maps, and examination of any existing data from the area to be cleaned. This Process List, in conjunction with the “Ditch Management” & “Cleaning Storm Drain Main Lines” SOPs/SOIs will provide guidance for proper disposal of the material being dredged/removed from storm water conveyances within Salt Lake City.





## ACTIVITY: Public Utilities – Dry Well Maintenance

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for dry well maintenance

### Procedure:

#### 1. Preparation

- a. Acquire appropriate personal protective equipment (PPE) such as hard toe boots and other PPE according to department policy.
- b. Obtain material necessary for dry well maintenance such as a flashlight and Mh hook.

#### 2. Process

- a. Daily Maintenance:
  - i. Record pump run times in station log record book located in station dry well.
  - ii. Record plugged or tripped pumps.
  - iii. Record drive percentage if applicable
  - iv. Run and test each pump in the hand cycle for proper pump operation this includes; leaks, plug or electrical malfunction.
  - v. Return pump on/off switch to automatic.
  - vi. Check belts for proper tension and wear.
  - vii. Check air release valves for proper operation.
  - viii. Check wet well tank for foreign matter, i.e.: grease, boards, rags, etc.
  - ix. Check to ensure station is clean and of good housekeeping.
  - x. Check miltronix readout for proper operation, level, etc.
  - xi. Look for burned out panel lights and replace as necessary.
- b. Monthly Maintenance:
  - i. Exercise three way plug valves and any other valves in station
  - ii. Make sure check valves open and close properly (clean the seat area if necessary).
  - iii. Check for proper operation of air relief valves.
  - iv. Check drive belt Retention and align belt if necessary.
  - v. Check oil level in pumps
- c. Annual Maintenance:
  - i. Adjust impeller to wear plate clearance.
  - ii. Change oil in pump seal chamber and bearing chamber every 4000 hours.
  - iii. Grease motor bearings, air relief valves and slide gates.
  - iv. Test alarms for proper operation.
  - v. Test all sump pumps for proper operation.

#### 3. Clean-Up

- a. Clean up as necessary

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.





## ACTIVITY: Public Utilities – Emergency Water Maintenance Repair

Effective Date: 6/24/2020

Revision Date: 12/13/2021

Prepared by: Albert Gallegos

Reviewed by: Matthew Hendrix; Brett Shelly

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating instructions (SOIs) for emergency water maintenance repair, including pollution prevention practices.

#### Instruction:

##### 1. Preparation

- a. Confirm all equipment and material required for emergency water maintenance repair is readily available including but not limited to:

- Excavator
- Dump truck
- Valve & Hydrant Equipment truck
- Vactor Truck
- Ductile/PVC pipe
- Gravel/Road-base/Fill-sand
- Copper pipe/fittings/hydrants/etc.
- Temporary traffic control
- Storm drain inlet BMPs
- Gutter buddy (filter tubes)
- Sediment filter bags
- Proper PPE

- b. Acquire appropriate personal protective equipment (PPE) according to department policy.  
c. There will be a supervisor assigned to all after hours issues.  
d. The supervisor will assign a standby crew and the equipment needed to complete the emergency water maintenance repair.  
e. Dispatch will be given a call out list for all those on standby.

##### 2. Pre-repair

- a. Dispatch receives emergency call, in which they obtain information for the emergency, time, place, and contact information of the caller.  
b. Dispatch then relays the information with Distribution, who then proceeds to investigate the site of emergency.  
c. Distribution reports back to Dispatch and makes a shutdown / throttle down of the water system if necessary. Dispatch will inform standby supervisor of findings.  
d. The supervisor will determine if the repair needs to take place immediately if so then emergency LRA's will begin. If the repair is not an emergency, it will be scheduled through normal channels.  
e. If determined that it is an emergency repair, dispatch will call emergency LRA's, barricades, and the standby crew into work.

##### 3. Repair

- a. The crew will take an excavator along with a truck containing all the tools and supplies to complete the repair. The drivers of the vehicles will make sure that pre trip inspections are complete prior to leaving the yard and ensure the vehicles are full of fuel.  
b. Upon arrival, the workers will hold a short tailgate safety meeting discussing the roles that each worker will have for that project.  
c. Set up traffic safety including early warning signs and barricading.  
d. Make sure that all the other utilities have been marked and cleared.  
e. Determine location of any waterways including, but not limited to storm drains/inlets, wells, ditches, canals, etc. that may need protection. Assess and implement appropriate BMPs using the following considerations:



## ACTIVITY: Public Utilities – Emergency Water Maintenance Repair

Effective Date: 6/24/2020

Revision Date: 12/13/2021

Prepared by: Albert Gallegos

Reviewed by: Matthew Hendrix; Brett Shelly

- i. Provide inlet protection to affected inlets (and further downslope if there's a potential for flows to bypass the closest protected inlets),
    - ii. Include additional gutter buddy (filter tubes) between the excavation/blow-out and the receiving inlet(s) for additional sediment capture during repair/cleanup operations; these should be placed in a j-hooked manner that allows treatment without simple bypass of the BMP.
    - iii. Use Sediment filter bags for pumping out (dewatering) any basins/holes/excavations (when applicable); e.g.: When the discharge is close to an open water body and cannot be controlled by containment BMPs.
  - f. Locate and expose the problem and prepare it for repair.
  - g. The crew will determine if a trench box is needed per Public Utilities Safety Ordinance. The crew will call Public Utilities Dispatch and have them order the trench box.
  - h. Install the trench box before entry in the trench. When the workers enter the trench, a proper sized ladder will be installed for safe entry.
  - i. The crew will make all necessary repairs, pressurize the system and make sure all repairs are complete.
  - j. Start the backfill process by installing road base in 2-foot lifts that are level. Tamper each layer to ensure proper compaction. Backfill to top of excavation.
  - k. Contact Dispatch to have the trench box picked up.
  - l. Safely barricade the area and make sure street access is available.
  - m. Street / Landscape repair and clean-up will then go through normal channels
- 4. Clean-Up**
- a. In the event of a spill refer to spill response SOI.
  - b. Once the water line break is controlled and no longer flowing, effort must be made to prevent remnant sediment/rock/debris from being washed into a storm drain; if power-washing the pavement for rapid cleanup, the debris and wash water should be captured (impounded) and pumped back into the excavation (if possible) or on to a grassy/vegetated surface to allow infiltration/filtration.
    - i. If the vegetated area isn't wide enough (<15 feet) to allow for infiltration/filtration, add sediment barriers (such as wattles or filter tubes) along the downslope edges to allow for more retention time in those pervious areas, and/or add BMPs to the gutter as check dams and increase inlet protection (particularly if no/limited vegetated surface is accessible).
    - ii. Use sediment filter bags whenever possible for pumping into these smaller vegetated/stable/pervious areas but especially if pumping directly on to paved/impervious surfaces.
    - iii. Ensure that the pump rates are low enough to allow treatment (such that the water isn't spilling over/around the BMPs, or causing erosion, but rather passing through them at a managed pace).
    - iv. If cleanup procedure does not involve power washing, then containment BMPs and inlet protection will suffice but effort must be made to minimize the direct discharge of sediment/debris into storm drain by SLCDPU personnel (a water quality regulatory requirement in the City's MS4 permit).
  - c. The supervisor or lead will get a work order from the work order office.
- 5. Documentation**
- a. The Lead operator of the standby crew will fill out work order pertaining to the excavation, including man hours, vehicle work hours, parts, and supplemental work orders.
  - b. Provide training on SOIs.



## ACTIVITY: Public Utilities – General Lift Station Information

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the general use of lift stations.

#### Procedure:

##### 1. Preparation

- a. Check vehicle for pre-trip safety.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy, such as hard toe shoes/gas monitor.
- c. Acquire appropriate material for lift station operation such as Mh hook, keys, pen, flashlight and airport badge.

##### 2. Process

- a. Ensure PPE is worn.
- b. Check all confined spaces before entry, unless automatic ventilation system is in place and working. Or space is of dry well type.
- c. Check all pumps in station, turn on hand to check for noisy bearings, plugged pump or water leakage due to a seal failure.
- d. Make sure pumps are not air locked, look at check valve and or miltronix readout and see them through pump cycle.
- e. Check oils, look for water in oil chamber, low oil, etc.
- f. Check and verify that miltronix level is stable and giving a steady and correct readout.
- g. Check housekeeping.
- h. Look and report any vandalism inside of station on grounds.
- i. Check sump pump operation.
- j. Check belts for proper tension and wear.
- k. Record pump hours and any maintenance performed or trouble found at station.
- l. Check dehumidifier operation.
- m. Check heater operation (winter months only).
- n. Check fresh air ventilation blower system for correct operation.
- o. Check all panel lights and report any burned out lights to Supervisor.
- p. Check all station inside lighting for burned out bulbs.

##### 3. Clean-Up

- a. Clean up as necessary.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Installing a Deck Section

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide a procedure for installing a deck section to a manhole.

#### Procedure:

##### 1. Preparation

- a. The supervisor will meet with the crew and discuss the manhole that requires the deck to be installed on.
- b. The crew will then prepare all equipment and supplies necessary to complete the job, including
  - Bobtail for sand and gravel
  - Bobtail for debris and compressor
  - Backhoe
  - Truck with barricades and fall prevention
  - Mixer truck or trailer for cement.
  - Portland cement 6 bag minimum.
  - Rebar 3 full sticks
  - 2 yds. washed  $\frac{3}{4}$ " gravel
  - 2 yds. masonry sand
  - Full container of water
  - Precast deck if necessary
  - shovels (round, square, invert and Kodiak)
  - brooms (street, shop, hand whisk)
  - jack hammer (90 lbs. and 35 lbs.) with extra bits for both hammers
  - masonry string
  - lumber crayon
  - digging bar
  - measuring tape
  - exhaust fan
  - mixed fuel
  - gas chop saw
  - blades
  - tools to change blades
  - invert covers
  - 5 gallon buckets
  - hook rope ladder
  - skill saw, generator
  - fuel
  - proper PPE
- c. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy and SDS.

##### 2. Process

- a. Upon arrival at the job site, the crew will have a safety meeting and discuss the tasks to be performed.
- b. Set up all Traffic controls and barricading for a safe work zone.



## ACTIVITY: Public Utilities – Installing a Deck Section

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- c. Set up Storm drain protection BMPs if needed.
- d. There are two different types of decks. The first is a pour in place deck and the other is a precast deck section that is installed on top of the manhole section. Deck type should be decided before leaving the yard in the morning.
- e. If needed, install a plug to protect the storm drain main from any debris during construction. Any debris that falls in the pipe will be vactored out.
- f. To install a pour in place deck, cut a circle in the asphalt approximately 2 feet in diameter larger than the outside diameter of the manhole section.
- g. Remove the old ring and cover, then proceed to jack hammer around the circle in the asphalt to allow the removal of the rest of the debris.
- h. Make a cut into the cone section at the desired depth where the deck is to be installed and remove all the debris to that level.
- i. At this time, all the debris that had fallen into the manhole should be removed. Excavate down 12" below. Cut new elevation of the deck to allow for 6" of gravel.
- j. A form will be placed on the top of the remaining manhole section made with  $\frac{3}{4}$  inch plywood that will be approx. 1 inch larger than the inside diameter of the manhole.
- k. The crew will install  $\frac{3}{4}$  minus gravel around the outside of the cone in the area that had been dug down below the cut in the cone. This will allow for a solid base for the concrete to rest on.
- l. The crew will then install a 30 inch diameter 12 inch tall form over the center of the manhole on top of the plywood.
- m. The crew will then cut rebar building a lathe for reinforcement.
- n. The crew will then mix and pour the concrete around the outside of the form to create the new deck top making sure as they pour it that the lathe gets installed about half way through the concrete. They will finish the top of the concrete and tap the inside of the form to remove all air bubbles.
- o. The crew will allow the deck to cure for one day then cut and remove the circular form and the plywood form.
- p. The ring and cover can then be installed on the new deck opening and the proper back fill material can be put into place.
- q. If the manhole is located in a street either asphalt or concrete is installed for the top surface.
- r. If the deck is going to be a precast deck the opening in the road surface will be 80 inches to allow the precast deck to be installed.
- s. The same process for the pour in place deck will be followed except we will dig and remove all material to the desired depth. Make the cut in the cone remove all material. Mix concrete/grout and place between the precast deck and the manhole section then place the deck on the manhole section, then install a concrete "diaper" around the outside of the deck at the joint to form a water tight joint. May also use mastic sealant to adhere the deck section and manhole.
- t. The ring and cover will then be installed onto the new deck section and the cut can be prepared for asphalt or as needed. We will then raise the ring and cover as per our manhole SOI once the surrounding surface has been prepared.

### 3. Clean-Up



## ACTIVITY: Public Utilities – Installing a Deck Section

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- a. Clean up workspace in accordance with all local, state and federal standards.

### **4. Documentation**

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Lift Station Pump Maintenance

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for lift station pump maintenance.

#### Procedure:

##### 1. Preparation

- a. Acquire all necessary material and equipment for pump maintenance, i.e. lock out tag out lock and tag, gloves, gas monitor.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Ensure PPE is worn.
- b. Gorman-Rupp style pumps; once all shims have been removed between the pump casing and bearing housing (due to impeller to wear plate clearance adjustment), the wear plate should be replaced. If the impeller is noticeably worn, it should be replaced as well.
- c. Depending upon the application and operation, the complete rotating assembly element should be rebuilt after approximately five to ten years of service. This would include replacement of bearings, lip seals, mechanical seal, shaft sleeve, o-rings and gaskets.
- d. For hydramatic pumps the only difference will be that there are no shims to remove for wearplate to impeller adjustment.
- e. When there is no more adjustment from the bolt adjuster, then a new wearplate is recommended.
- f. At that time again if an Impeller looks bad, replace as needed.
- g. Along with a Hydramatic impeller replacement, a lip plate may also need to be replaced. Only full trim impellers, do not use a lip plate in hydramatic stations.
- h. There are repair manuals for both Gorman Rupp and Hydramatic to follow when making pump repairs.
- i. For all other types of pumps including submersible types and others, we need to check the oil in them semi-annually and change if a trace of water is present or replace the mechanical seal if necessary.
- j. Refer to appropriate station manual located in Lift Station Office for detailed pump and rotating assembly rebuild instructions.

##### 3. Clean-Up

- a. Clean up as necessary

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Maintenance Facilities

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for protecting water quality at Salt Lake City owned and operated maintenance facilities.

#### Procedure:

##### 1. Preparation

- a. Comply with all storm water control measures including but not limited to; minimize exposure, good housekeeping, maintenance, spill prevention and response, erosion and sediment controls, runoff management and employee training.

##### 2. Process

- a. Regularly clean landscaped areas ensuring that they are free of trash and adequately absorbing storm water. Be sure debris is kept out of the storm drain.
- b. Regularly clean parking lots of any debris that may enter a storm drain inlet.
- c. Keep inlets on the facility site clean in order reduce sediment and contamination of the MS4 system.
- d. Provide regular preventative maintenance including inspections, testing and cleaning on all facility equipment and operational systems as appropriate.
- e. Ensure implemented erosion and sediment controls are maintained and working properly.
- f. Store materials such as stockpiles and chemicals in contained designated storage areas minimizing exposure to storm water.

##### 3. Documentation

- a. Provide training on proper hazardous substance management including container management, good housekeeping, secondary containment, marking and labeling, inventory, and emergency response in the event of spill or release.
- b. Document and file inspections in accordance with facility protocol.





## ACTIVITY: Public Utilities – Manhole Install

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for installing a manhole.

#### Procedure:

##### 1. Preparation

a. Obtain all equipment and material required for main storm drain line repair including:

- Excavator
- Dump truck
- Equipment trailer
- Vactor Truck
- Gravel
- Road base
- Precast manhole sections
- Mastic sealant
- 24" x 48" ring and cover
- Storm drain inlet protection

- b. Acquire appropriate personal protective equipment (PPE) according to department policy.
- c. The supervisor will verify the need to have a manhole installed.
- d. The supervisor or lead will go to the location of the repair and mark the surface area in white paint to verify the location for the storm drain line.
- e. The supervisor or lead will get a work order made for installing the new manhole. The supervisor or lead will make contact with the public utilities dispatch and have them start the project.
- f. The supervisor will assign a crew and the equipment needed to complete the manhole install.
- g. The drivers of the vehicles will verify that the pre-trip inspections are done before leaving the yard and the vehicles are fueled.
- h. Upon arrival at the work site the workers will hold a short tail gate safety meeting to discuss the roles that each worker will have.
- i. Construction truck shall have all required tools to finish the job.

##### 2. Process

- a. The workers will verify that all of the utilities are marked and cleared.
- b. The workers will set up all traffic control safety and early warning signs or determine if it need to be set-up by the traffic control contractor. The workers will keep in contact with the supervisor throughout the project.
- c. The workers will set-up Storm drain protection inlet BMPs, as needed.
- d. The workers will saw cut the asphalt around the area and start the excavation.
- e. The operator will not dig any closer than the 24" safety zone of any other utilities. They will be located with use of hand shovels or other safe means.



## ACTIVITY: Public Utilities – Manhole Install

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- f. When the crew can determine if a trench box is needed they will inform the supervisor what size and type that is needed, the supervisor or lead will call Public Utilities Dispatch and have them call and order the trench box.
- g. The workers shall not enter into the trench, if a trench box is not on site and not installed properly, a ladder is also required for entry into the box.
- h. The workers will remove the old pipe that is going through the manhole and install a new piece of ADS or Driscoll pipe that the manhole section will go over.
- i. The workers will install 3/4" gravel as a base for the pipe and manhole section.
- j. The workers will mix and install concrete as a base for the pipe and manhole section if not using a precast base.
- k. The crew will install the bottom manhole section over the pipe making sure it is setting level.
- l. The crew will pour a collar of cement around the outside of the manhole section at the base to make it water tight.
- m. After the concrete has set up finish installing the remaining manhole sections to the ground surface making sure that mastic is used on each manhole section making it water tight.
- n. The crew will back fill the excavation with about 2 feet of gravel at the bottom then back fill the remaining area with road base in 1 foot level lifts and compact to insure no settling.
- o. The crew will then grout the bottom of the manhole to allow for the proper flow.
- p. When the back fill material has been installed the workers will saw cut the existing concrete or asphalt to allow a clean tie in with the new surface restoration.
- q. The worker will measure the area to be restored and give that information to the supervisor.
- r. The workers will place safety barricades in the area to protect the trench.
- s. Concrete thermal blankets will be used if the weather requires it.
- t. The workers will remove all tools and equipment and allow the contractor to finish the surface restoration.

### 3. Clean-Up

- a. Clean up the area of any construction debris and sweep up.

### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Material Storage Areas

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To protect water quality by providing best management practices (BMPs) that have been developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) in order to maintain storm water quality when storing materials including but not limited to chemicals, salt piles, and other industrial materials.

#### Procedure:

##### 1. Preparation

- a. Determine and implement storage area BMPs prior to the storage of material.

##### 2. Process

- a. When possible, store all materials indoors or under shelter protected from storm water.
- b. When possible, all materials stored outside should be covered and stored in designated areas away from any storm water conveyance or storm drain.
- c. All chemicals must be properly labeled, stored indoors or covered and stored in secondary containment.
- d. Spill kits must be provided and contain absorbents that will effectively clean up the stored material.
- e. Clean up any spills immediately and report significant spills to your immediate supervisor.
- f. Regularly inspect storage areas, BMPs and spill kits to ensure proper working condition; note and report any problems to your immediate Supervisor.
- g. Observe good housekeeping practices with all storage areas to maximize BMP effectiveness.
- h. Be aware of BMP effectiveness. Discuss ways to improve BMPs with your Supervisor.

##### 3. Documentation

- a. Document and provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Meter Box Pumping

Effective Date: 11/17/2017

Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) in order to help avoid any issues when pumping liquids from meter boxes or trenches.

#### Procedure:

##### 1. Be aware of the following types of discharges:

- a. Clean water is clear or stagnated ground water without foul smelling odors. Clear water may be discharged onto pervious areas such as grass, soil, and impervious areas that lead to the storm drain.
- b. Water that has a light sheen of oil, (rainbow surface) chemical smell or turbidity (dark, cloudy or muddy) may not be discharged into storm drain. Contact Kelly Brown @ 483-6710, the liquid will need to be removed by a Vactor truck.
- c. If the liquid has a sewer smell, floating fecal matter, indications of sewerage. Contact Steve Terry @ 483-6759, the material will need to be removed by Vactor truck.
- d. If the liquid is a heavy oil, has an oily or petroleum fuel smell, or a strong chemical odor indicating a potential hazardous waste. Contact Greg Archuleta @ 483-6821, so that a company can be notified to pump it out.
- e. Chlorinated water may not be discharged into the storm drain system near a fresh water stream. If you are pumping or flushing out a location that contains chlorinated water near a stream or river, it will need to be treated to remove the chlorine. Contact Greg Archuleta @ 483-6821 for further information.



## ACTIVITY: Public Utilities – Mixing Grout

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide a standard operating procedures/instructions (SOP/SOI) for mixing grout.

#### Procedure:

##### 1. Preparation

- a. Assess the job and conditions i.e. weather, location, size of project, etc.
- b. Obtain all equipment and material including:
  - Square mouth shovel
  - 5 gallon bucket
  - water container
  - broom
  - 5 gallons of masonry sand
  - 5 gallons of cement powder
  - Water (as needed)
  - 1 bag of calcium chloride
- c. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy and SDS.
- e. Fill up the 5 gallon bucket of sand, 5 gallon bucket of cement powder, 5 gallon water container and 1 bag of calcium chloride in the yard before leaving to jobsite.

##### 2. Process

- a. The mix ratio for concrete grout is one 5 gallon bucket of sand and one five gallon bucket of cement powder with calcium chloride as needed.
- b. Dry mix the sand and cement powder together adding water as needed. The calcium chloride will be added as needed after all of the other materials are thoroughly mixed.
- c. The mixing can be done either in a small pile on the ground or in the cement mixer.
- d. Apply concrete grout as needed to the area requiring repair.

##### 3. Clean-Up

- a. If mixing was done on the ground, sweep up all excess cement powder and sand.
- b. Clean up workspace in accordance with all local, state and federal standards.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Municipal O & M Spill Response

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the response, investigation and elimination process of spills or leaks associated with Municipal operations.

### Procedure:

#### 1. Notification

- a. When a spill is identified or reported, the notified party shall take the following steps:
  - i. If this is a major spill or emergency call 911.
  - ii. Gather information from event/eye witness including:
    1. Location of incident
    2. Pollutant associated with discharge and quantity
    3. Responsible party if identifiable
    4. Name and number of caller/reporter
  - iii. Notify supervisor, lead man, dispatch and/or Storm Water Quality personnel.
  - iv. (Dispatch) Refer to Spill Incident Response Contact List and make calls down the list until an available person can respond or address the report.

#### 2. Response

- a. The responding employee or delegated department/personnel shall:
  - i. Assess and characterize the nature of, and any potential public and environmental risks associated with spill or leak.
  - ii. Notify appropriate authorities i.e. State of Utah, Salt Lake County Health Dept.
  - iii. Contain spill or leak to the maximum extent practicable.
  - iv. Investigate incident and identify responsible party if possible.
  - v. Coordinate and oversee clean up and any needed remediation or follow up.

#### 3. Documentation

- a. The responding personnel shall prepare, maintain and follow up with all appropriate documentation in accordance with applicable city policy including:
  - i. File all completed forms.
  - ii. Document any further action or enforcement taken.
  - iii. Report and document all major spills to EQRR Incident Notification hot line: 801-536-4100 after hours call 801-536-4123.



## ACTIVITY: Public Utilities – Parking Lot Sweeping and Maintenance

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.2.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for conducting parking lot maintenance.

### Procedure:

#### 1. Preparation

- a. See BMP list for cleaning schedule.
- b. Conduct regular employee training to reinforce proper housekeeping.
- c. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
- d. Perform regular maintenance and services in accordance with the recommended vehicle maintenance schedule on sweepers to increase and maintain efficiency.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure appropriate PPE is worn (gloves, etc.).
- b. Sweep parking areas, as needed, or as directed by the city's responsible official.
- c. Hand sweep sections of gutter if soil and debris accumulate.
- d. Pick-up litter as required to keep parking areas clean and orderly.

#### 3. Clean-Up

- a. Dispose of sweepings properly (appropriate solid waste facility).
- b. Street sweepers to be cleaned out in a manner as instructed by the manufacturer and in a location that swept materials cannot be introduced into a storm drain.
- c. Swept materials will not be stored in locations where storm water could transport fines into the storm drain system.

#### 4. Documentation

- a. Keep accurate logs to track swept parking areas and approximate quantities.
- b. Provide and document training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Perma-Liner/Spot Liner

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the installation of a perma-liner/spot liner.

### Procedure:

#### 1. Preparation

- a. Discuss with a supervisor about lines that need to be done and check the weather for available days that will accommodate the installation of a liner.
- b. Acquire appropriate equipment and material necessary e.g. pickup truck with liner trailers, TV van, Pressure truck, compressor, liner kit.
- c. Check the length and location of needed repair. Ensure that the flow and location of services will allow for the installation of the liner.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure appropriate PPE is worn.
- b. Video the line down to the needed repair. Mark the cable with the location of the repair.
- c. Determine from the line if it needs to be cleaned.
- d. While this process is taking place other crew members should start setting up the equipment needed.
- e. If a line needs to be cleaned, do so now.
- f. Transfer the mark from the camera line to the rope line.
- g. String the line with either pressure truck or camera depending on the previous steps.
- h. With rope line in place begin getting the bladder lubed up and prepped for wetting out.
- i. Before wetting out, make sure the air tank is full and the hose is holding air.
- j. Mix up the epoxy and wet out the liner material.
- k. Install the zip ties at appropriate locations.
- l. Have one person head to the other manhole to pull the line while the other two pick up and set it into the manhole.
- m. Pull the line until the mark and the rope is in place then inflate the bladder while listening for the zip ties to pop.
- n. Lower the epoxy bucket into the manhole for curing.
- o. Two employees leave to CCTV other lines while one stays to watch it cure.
- p. When the epoxy in the bucket is hard the other two will return to help deflate the bladder and inspect the rope and hoses while cleaning them up and putting them away.
- q. Post inspection will be done with the camera and a picture including any other pertinent information will be sent to the supervisor.

#### 3. Clean-Up

- a. Clean up all BMP material.
- b. In the event of a spill, refer to the Spill Response SOP/SOI.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.





## ACTIVITY: Public Utilities – Planned Water Excavation and Storm Drain Protection

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for proper and safe means of allowing water into a storm sewer during a planned water repair or replacement.

### Procedure:

#### 1. Preparation

- a. Acquire all equipment and material necessary e.g. valve and hydrant service truck, backhoe, dump truck, 2 or 3 inch trash water pump, 2 square mouth shovels, 6 gravel filled bags (minimum) or straw wattles for Storm Drain Inlet Protection.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.
- c. The water maintenance Lead man will determine where the discharge may travel to.
- d. Lead man will appoint one or all maintenance crew members to make sure gutters leading to inlet are free of debris and place inlet protection (i.e. wattle, gravel bags, etc.) nearest to downstream inlet as possible.
- e. Lead man will check valves needed for shut down prior to excavation in order to isolate the waterline to be worked on.

#### 2. Process

- a. Ensure PPE is worn.
- b. The Lead man will make efforts to keep water from pipeline from entering the excavation.
- c. When and if there is need for the use of a trash pump for dewatering the excavation, the lead man will make sure that the discharge will be directed toward the predetermined inlet.
- d. The truck driver will do all that is possible do decant the water from the truck bed before driving to dumpsite.

#### 3. Clean-Up

- a. After replacement is finished, and the excavation is in the process of being backfilled, one or more crew members will clean the area around the excavation, as well as the gutter, from the earthen material that was deposited by the pump, backhoe or the dump truck.
- b. The inlet protection will be removed once the excavation has been back filled and completed.

#### 4. Documentation

- a. The lead man will fill out the work order pertaining to the excavation, including man hours, vehicle running time, parts, and supplemental work orders.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Pump Blockage

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) in the event of a blockage severe enough to open pump housing.

#### Procedure:

##### 1. Preparation

- a. Acquire all material as required i.e. gas monitor, gloves, safety glasses, bucket, lockout/tagout, lock/tag, appropriate tools, hook rope and gas monitor.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Ensure PPE is worn and all equipment is acquired.
- b. If an employee encounters a blockage in a pump severe enough to open pump housing; he or she must do a lock out tag out procedure for the pump being worked on.
- c. Next assistance will be required to work on the pump, this operation requires two people for safety reasons, never attempt to unblock an electric pump alone.
- d. Only after a lockout/tag out has been done on said pump can work commence.
- e. The three way plug valve needs to be turned to isolate the effected pump if applicable. An isolation valve other than a three way plug valve may also be used on different types of pumps, this needs to be turned or shut off to isolate pump.
- f. Drain pump housing only after the pump has been isolated.
- g. Pull the pump housing out of centrifugal pumps by loosening bolts, then pry out housing.
- h. **Never pull debris out of a blocked pump with your hands**, even with gloves on, use pliers or a screwdriver to pry or pull debris out. There are dangerous articles in sewage including needles, pins, etc. that can cause harm or disease if stuck.

##### 3. Clean-Up

- a. Clean up as necessary.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Root Foam

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the use of root foam.

### Procedure:

#### 1. Preparation

- a. Acquire appropriate equipment e.g. Vapo-rooter system attached to pressure truck, pickup truck.
- b. Check out root foam chemical (Metam-sodium and Dichlobenil) for the day and organize a route from the assigned work orders.
- c. Acquire appropriate personal protective equipment (PPE) according to SDS and department policy.

#### 2. Process

- a. Arrive to manhole and remove cover.
- b. Load root foam chemical into truck foaming system.
- c. Use root foaming nozzle to shoot up the line.
- d. Change valve over to foam and use touch screen to premix then foam the line.
- e. Second work has upstream manhole cover removed to verify the start of the foam.
- f. Using the chart inside the foam control unit lid, begin pulling back at the appropriate rate of speed for the line being foamed using a stopwatch.
- g. Rinse the hose as its being pulled back then head to the next location.
- h. Follow all regulations of the label for the use including PPE, use, and disposal of the foam.

#### 3. Clean-Up

- a. Dispose of foam in accordance with SDS and all regulations on the label.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. In the event of a spill refer to the Spill Response SOP/SOI.
- c. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Sanitary Sewer Overflow (SSO) Spill Response

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for responding to sanitary sewer overflow (SSO)/spills.

#### Procedure:

##### 1. Preparation

- a. Make sure vehicles have PPE, traffic control devices and all necessary equipment e.g. booms, sand bags, clear Visqueen (plastic), disinfectant.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Identify the location and cause of the break or spill. Isolate and take off line, the discharge line, or broken pipe to control water flow.
- b. Shut off the pumps at the station or clear the pipe and bypass pump around the determined location.
- c. Inform the Safety Program Manager of the event and scope of the affected area.
- d. Protect storm drain inlets.
- e. Install containment devices in the area such as booms, dikes, sand bags, visqueen (plastic), etc. to keep sewage in a controlled area.
- f. Recover the sewage from the containment area using vacuum trucks, shovels, pressure water hoses or pumping.
- g. Dispose sewage (if possible) by pumping back into the sanitary sewer system or use the vacuum truck to vacuum up material.
- h. Remove all containment devices and take to the water reclamation plant.
- i. Sanitize the area by using a chlorine solution made up with ¼ cup of chlorine bleach for each gallon of water. Pressure wash the affected area and vacuum up water into the vacuum truck and dispose.
- j. If storm drains are affected repeat steps e-i.

##### 3. Clean-Up

- a. Clean up all BMP material.
- b. Dispose of all material in accordance with all city, state and federal regulations.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.
- c. Document the event to City works on the work orders system and provide all photos and notes to the central location.
- d. Notify the Public Utilities Director, Storm Water Quality, County Health Dept. and State of Utah DEQ.



## ACTIVITY: Public Utilities – Spill Notification

Effective Date: 6/1/2016  
Revision Date: 12/13/2021

Prepared by: Greg Archuleta  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.5.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for spill notifications in a timely manner to the following groups: Repair/Maintenance crews, Storm water Quality Personnel, Watershed Protection, Irrigation, Salt Lake County Health Department and if necessary, the State of Utah DEQ incident reporting hot line.

### Procedure:

#### 1. SLC Customer service or first responder document the following information:

- a. The name and phone number of the person reporting the incident.
- b. The date, time and location of the incident being reported.
- c. The material being discharged (e.g. paint, fuel, cement etc.).
- d. Notify SLC Dispatch with as much detail as possible.
- e. If the incident is life threatening immediately call 911.

#### 2. SLC Dispatch:

- a. If discharge/report is a water break, notify water maintenance personnel.
- b. If discharge/report is sanitary sewer notify the sewer collection personnel.
- c. If discharge involves storm drains notify stormwater personnel.
- d. If the discharge/report is in the watershed area notify the Watershed personnel.
- e. If the discharge/report involves the irrigation system notify the irrigation personnel.

### Contact Numbers:

**Salt Lake City Dispatch: (801) 483-6700**

**Salt Lake County Health Department Emergency Response: (801) 580-6681**

**Utah Department of Environmental Quality (DWQ): (801) 536-4123**



## ACTIVITY: Public Utilities – Storm Drain Main-Line Repair

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for main storm drain line repair.

### Procedure:

#### 1. Preparation

a. Obtain all equipment and material required for main storm drain line repair including:

- Excavator
- Dump truck
- Equipment trailer
- Vactor
- ADS or Driscoll pipe
- Gravel
- Road base
- Temporary traffic control
- Storm drain inlet BMPs
- Proper PPE

- b. Acquire appropriate personal protective equipment (PPE) according to department policy.
- c. The supervisor will determine where the repair is to be made
- d. The supervisor or lead will go to the location of the repair and mark the surface area so that LRA (blue stakes) can be done.
- e. The supervisor will determine if the repair needs to take place immediately if so then emergency LRA's will begin, if the repair is not an emergency, we will schedule through normal LRA's.
- f. The supervisor or lead will get a work order from the work order office.
- g. The supervisor will assign a crew and the equipment needed to complete the main repair.
- h. Temporary traffic control will be called or be installed by in house certified installers to accommodate a safe work area.

#### 2. Process

- a. The crew will take an excavator along with a truck containing all the tools and supplies to complete the repair. The drivers of the vehicles will make sure that pre trip inspections are complete prior to leaving the yard and ensure the vehicles are full of fuel.
- b. Upon arrival, the workers will hold a short tail gate safety meeting discussing the roles that each worker will have for that project.
- c. Make sure that all the other utilities have been marked and cleared.
- d. Set up traffic safety including early warning signs and barricading.
- e. Determine location of any waterways including, but not limited to storm drains/inlets, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- f. Remain in contact with the supervisor throughout the project, keeping him/her informed of the progress.
- g. Mark out the area for the repair with paint and then make a saw cut.



## ACTIVITY: Public Utilities – Storm Drain Main-Line Repair

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- h. After the saw cut has been made, the excavator operator will remove the asphalt or concrete from the area. If a wet saw is used, a Vactor truck will be used to suck up residual slurry.
- i. The crew will determine if a trench box is needed per Public Utilities Safety Ordinance. They will then inform the supervisor what size and style is needed and the supervisor or lead will call Public Utilities Dispatch and have them order the trench box or use an in-house trench box.
- j. Install the trench box before entry in the trench. When the workers enter the trench, a proper sized ladder will be installed for safe entry.
- k. Locate and expose the mainline and prepare it for removal.
- l. After all the old material is removed, the ends of the existing pipe will need to be cut to ensure a straight tight fit with the new pipe.
- m. Check the grade of the pipe, verifying that it has the proper grade to allow the water to flow. The operator will then cover the pipe about half way up the side of the pipe. When the grade has been verified for the pipe, the worker will haunch the pipe.
- n. Check the grade on the pipe once again to ensure that the pipe still has consistent grade.
- o. The operator will then cover the pipe with about 2 feet of gravel making sure that the layer of gravel is level.
- p. Start the backfill process by installing road base in 1-foot lifts that are level. Tamper each layer to ensure proper compaction.
- q. Saw cut around the asphalt or concrete surface if needed to straighten up the edges of asphalt or concrete in preparation for the new material to be installed.
- r. Contact the supervisor to have the trench box picked up.
- s. Measure the area for the proper size and material needed for the surface restoration and inform the supervisor of that information.
- t. Safely barricade the area and install blankets over area needed to be patched if the weather requires it.

### 3. Clean-Up

- a. Clean up the area of any construction debris and sweep up.
- b. Clean up any BMPs.
- c. In the event of a spill refer to spill response SOP/SOI.

### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Storm Route

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) to clean and inspect storm drain inlets.

#### Procedure:

##### 1. Preparation

- a. See BMP list for cleaning schedule.
- b. The crew will prepare all equipment and supplies necessary to complete the job, including:
  - 1-ton truck
  - Pitch fork
  - Square Shovel
  - Proper PPE
- c. Acquire appropriate personal protective equipment (PPE) according to department policy.
- d. Pre-trip safety inspection should be done before leaving yard by vehicle operator.
- e. Check to ensure the truck has all necessary tools before leaving the yard.
- f. Have a clear understanding of the task and where you are going.

##### 2. Process

- a. Locate dirty storm drains or inlets with debris.
- b. Clean debris with pitch fork or shovel to ensure inlets are in working condition and to minimize pollutants into the system.
- c. If any IDDE's are identified, refer to the Spill Response SOP/SOI, and/or the spill response contact list.
- d. Take any waste to the Water Reclamation Plant.

##### 3. Clean-Up

- a. Clean up workspace in accordance with all local, state and federal standards.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.





## ACTIVITY: Public Utilities – Transporting Dry Excavated Materials and Spoils

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the transportation of dry excavated materials and spoils.

### Procedure:

#### 1. Preparation

- a. Utilize truck with proper containment of materials.
- b. Determine disposal site of excavated materials.
- c. Determine best route to be taken to disposal site.
- d. Perform pre-trip inspection at the start of the shift.
- e. Fill out appropriate maintenance log.
- f. Make sure vehicle has the appropriate amount of fuel.

#### 2. Process

- a. Load vehicle/container.
- b. Clean all debris from side rails, tailgate and trailer hitch area.
- c. Check truck after loading for possible spillage.
- d. Transport in manner to eliminate spillage and tracking.
- e. Utilize one route for transporting.

#### 3. Clean-Up

- a. Clean loading area.
- b. Clean transporting route.
- c. If needed, back track the route to clean up any spillage that may have occurred.
- d. Wash off truck and other equipment in a designated equipment cleaning area.

#### 4. Documentation

- a. Fill out any and all reports of damage if incident occurs due to spillage.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Transporting Wet Excavated Materials and Spoils

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for transporting wet excavated materials and spoils.

### Procedure:

#### 1. Preparation

- a. Utilize truck with containment for material.
- b. Determine disposal site of excavated material.
- c. Perform pre trip inspection at the start of the shift.
- d. Fill out appropriate maintenance log.
- e. Ensure the vehicle has the appropriate amount of fuel.

#### 2. Process

- a. Load and transport in manner to minimize spillage and tracking of material.
- b. Make sure that the truck is not being overfilled.
- c. Decant the truck bed to minimize water in load.
- d. While driving check truck and road for spillage.
- e. Utilize one route for transport.

#### 3. Clean-Up

- a. Back track route to clean up any spilled material.
- b. Wash out equipment truck and other equipment in designated wash area.

#### 4. Documentation

- a. Fill out any and all reports of damage if incident occurs due to spillage.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Triple Rinsing Containers Used With Dilutable Pesticides

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for triple rinsing containers used with dilutable pesticides in accordance with 40 CFR 156.146.

#### Procedure:

##### 1. Preparation

- a. Obtain appropriate personal protective equipment (PPE).
- b. Assess and implement appropriate BMPs to protect storm drain inlets from potential spills.
- c. Rinse containers in designated areas.

##### 2. Process

- a. Triple rinse container as soon as possible after emptying.
- b. Empty the contents of the container into the rinsate collection vessel.
- c. After the flow begins to drip, allow it to drain for ten seconds.
- d. Fill the container  $\frac{1}{4}$  full with clean water. Rinse water may be reused for additional rinsing.
- e. If the container is small enough to shake, securely replace the cap of the container and shake for 10 seconds.
- f. If the container is not small enough to shake, securely replace the cap and tip the container on its side. Roll the container back and forth (ensuring at least one revolution) for at least 30 seconds. Stand the container back up and tip it back and forth several times. Turn the container over and tip it back and forth several times.
- g. Carefully empty rinsate into the rinsate collection vessel.
- h. Repeat (steps b through g) two more times.

##### 3. Clean-Up

- a. Store remaining rinsate water for later mixing or dilution.
- b. Put containers away in designated locations.
- c. Clean up any spills using dry clean up methods.

##### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Vactor Truck

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the use of a Vactor truck.

### Procedure:

#### 1. Preparation

- a. Acquire appropriate personal protective equipment (PPE) according to department policy.
- b. Pre-trip safety inspection should be done before leaving yard by vehicle operator.
- c. Check to ensure the truck has all necessary tools and nozzles for the project before leaving the yard.
- d. Have a clear understanding of the task and where you are going.
- e. Check and clean all screens for pump and make sure the debris tank hatch is closed.

#### 2. Process

- a. Pull up to manhole or other structure that needs to be vacuumed out.
- b. Set up safety barricading around the work zone to ensure employee and public are safe.
- c. Engage PTO to truck for hydraulic needs.
- d. Assemble vacuum tubes to required length to get to the bottom of the structure.
- e. Once the tube is assembled, lower the tube into the clean out box and begin cleaning.
- f. When the job is finished, reverse steps a-f and continue to the next task making sure the structure that was vacuumed is once again secure and safe to be released back to the public.

#### 3. Clean-Up

- a. Always decant debris tank at the end of the day and before dumping it at the Reclamation plant.
- b. Open debris tank hatch to allow ample room for the gasket to expand over the weekend. Debris tank must be emptied before weekends or an extended amount of time (more than 2 days) of not being used.
- c. Clean up workspace in accordance with all local, state and federal standards.
- d. If spills occur contain spill and refer to the Spill response SOP/SOI.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Vacuum Combination Truck

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1 & 4.2.6.7.3

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the use of a vacuum combination truck.

### Procedure:

#### 1. Preparation

- a. Pre-trip safety inspection should be done before leaving yard by vehicle operator.
- b. Check to make sure truck has all necessary tools and nozzles for the project prior to leaving the yard.
- c. Have a clear understanding of the task and where you are going.
- d. Check and clean all screens for pump and make sure the debris tank hatch is closed.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Pull up to manhole or other structure that is needed to be vacuumed out.
- b. Set up safety barricading around work zone to make sure employee and public are safe.
- c. Engage PTO to truck for hydraulic needs.
- d. Assemble vacuum tubes to required length to get to bottom of structure.
- e. Make sure the vacuum relief is on before engaging blower to create a vacuum.
- f. If cleaning a sewer line, engage blower just before you have debris at your tubes to prevent prematurely filling up debris tank with liquid.
- g. Once finished with the job, reverse steps a-f and continue to next task making sure the structure you vacuumed is once again secure to and safe to be released back to the public.

#### 3. Clean-Up

- a. Always decant debris tank at end of the day and before dumping it at the reclamation plant.
- b. Open debris tank hatch to allow ample room for the gasket to expand over the weekend. Debris tank must be emptied before weekends or an extended amount of time (2+days) if not going to be used.
- c. If spills occur, contain spill and refer to the Spill Response SOP/SOI.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Document all spills in accordance with all local, state and federal standards.



## ACTIVITY: Public Utilities – Waterline Flushing for Routine Maintenance

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for waterline flushing for routine maintenance.

### Procedure:

#### 1. Preparation

- a. Determine flow path of discharge to inlet of waterway.
- b. Determine chlorine residual.
- c. Neutralize chlorine residual.
- d. Monitor for continued neutralization of chlorine residual.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure appropriate PPE is worn.
- b. Clean flow path.
- c. Protect inlet structures.
- d. Use diffuser to dissipate pressure to reduce erosion possibilities.

#### 3. Clean-Up

- a. Clean flow path
- b. Remove inlet protection.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.



## ACTIVITY: Public Utilities – Wet Well Monitoring

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for wet well monitoring.

### Procedure:

#### 1. Preparation

- a. Acquire appropriate material for wet well monitoring i.e. Mh hook, net bucket, cones gloves and a flashlight.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure PPE is worn.
- b. On all storm water lift stations, the wet well needs to be monitored very closely for any foreign matter including plastic or Visqueen type material along with boards ropes etc. this material can enter into these types of stations more easily than a Sanitary station through street and gutter openings etc. and cause a blockage failure.
- c. Some storm stations with the screw type pumps in them require that the grease tanks be filled daily, otherwise, the bearings will fail due to lack of grease.
- d. On a daily basis weeds need to be pulled off of any storm water station with any kind of grate at the entrance of the wet well or at the point of water lift.
- e. If any significant pollution or sheen is observed during monitoring, please refer to the spill response SOP/SOI and Spill Incident Response Contact List to report.

#### 3. Clean-Up

- a. Clean up as necessary.

#### 4. Documentation

- a. Provide training on SOPs/SOIs.
- b. Related documents: Spill response SOP/SOI, Spill Incident Response Contact List.



## ACTIVITY: Right-of-Way Maintenance – Application of Herbicides and Pesticides

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the application of herbicides and pesticides on right-of-way paths.

### Procedure:

#### 1. Preparation

- a. Minimize the use of fertilizers, pesticides and herbicides by planting drought tolerant plants and by utilizing low impact alternative landscaping.
- b. Notify your immediate Supervisor that you will be handling pesticides, or herbicides.
- c. Ensure that your state Chemical Handling Certification is complete and up-to date before handling any chemicals.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.
- e. Calibrate pesticide application equipment to avoid excessive application.
- f. Use pesticides only if there is an actual pest problem.
- g. Time and apply the application of herbicides or pesticides to coincide with the manufacturer's recommendation for the best results (Read the Label).
- h. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- i. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.

#### 2. Process

- a. Always follow the manufacturer's recommendations for mixing, application and disposal (Read the Label).
- b. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material, spills or wastewater.
- c. Do not mix or prepare pesticides for application near storm drains, preferably mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- d. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting) of pesticides and herbicides.

#### 3. Clean-Up

- a. Sweep pavements or sidewalks where solid chemicals have fallen, back onto grassy areas before applying irrigation water.
- b. Triple rinse containers, and use rinse water as product.
- c. Store all chemicals as per owner's recommendation. Always follow all federal and state regulations governing use, storage disposal of fertilizers, herbicides or pesticides and their containers (Read the Label).
- d. Use spill kits.





## ACTIVITY: Right-of-Way Maintenance – Application of Herbicides and Pesticides

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### 4. Documentation

- a. Keep copies of SDS sheets for all pesticides, fertilizers, and other hazardous products used.
- b. Record herbicide and pesticide application activities, including date, individual who performed the application, amount of product used and approximate area covered.



## ACTIVITY: Right-of-Way Maintenance – Mowing and Trimming

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for mowing and trimming right-of-way paths.

#### Procedure:

##### 1. Preparation

- a. Process overview with all employees
- b. Check the oil and fuel levels of the mowers and other equipment, fill if needed.

##### 2. Process

- a. Ensure PPE is worn (steel toe boots, eye and hearing protection).
- b. Mow and trim.
- c. Sweep or blow clippings to vegetated areas, never to a storm inlet or conveyance.

##### 3. Clean-Up

- a. Mowers are to be scraped and brushed at shop – dry spoils are dry swept and disposed of.
- b. Wash equipment in approved wash station.

##### 4. Documentation

- a. Provide and document training on SOPs/SOIs.



## ACTIVITY: Streets – Chip Seal

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the application of chip seal for all Salt Lake City employees who conduct asphalt pavement construction, reconstruction and treatment.

### Procedure:

#### 1. Preparation

- a. Remove weeds from the reads. Sweep areas where materials are to be applied, and allow drying, if necessary. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
- b. Manholes and catch basins are covered to prevent oil and materials from getting inside the structures or system.
- c. Closely monitor weather conditions to determine if treatment can be applied.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material or oil.
- b. Chip spreader follows closely behind emulsion distributor and travels slowly enough to prevent chips from rolling when they hit the surface.
- c. Street sweeper is used to pick up excess chips.
- d. Rollers follow closely behind the chip spreader. Maximum speed 5 mph.
- e. Roll entire surface twice.

#### 3. Clean-Up

- a. All loose aggregate from sweeping is removed from the roadway.
- b. Excessive asphalt applications and spills are removed.
- c. When covers are removed any materials which have entered the storm drain structures shall be removed.

#### 4. Documentation

- a. Record location and date on the maintenance log.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Streets – Crack Seal

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the application of crack seal.

### Procedure:

#### 1. Preparation

- a. Remove weeds from the roads. Sweep areas where materials are to be applied, and allow drying, if necessary. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
- b. Manholes and catch basins are covered to prevent oil and materials from getting inside the structures or system.
- c. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- d. Closely monitor weather conditions to determine if treatment can be applied.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.
- f. Air-blast the cracks to remove sediments from the crack to allow for proper adhesion.
- g. Ensure that surface is clean and dry.

#### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material or oils.
- b. Proper temperature of material should be maintained at all times during application.
- c. Sufficient material is applied to form the specified configuration.

#### 3. Clean-Up

- a. Remove all excessive sealant from the roadway and gutters.
- b. Sweep and properly dispose of all loose debris from roadway and gutters.
- c. Clean up all BMP material.

#### 4. Documentation

- a. Record location and date on the maintenance log.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Streets – Overlays and Patching

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for overlays and patching.

### Procedure:

#### 1. Preparation

- a. Remove weeds from the roads. Sweep areas where materials are to be applied, and allow drying, if necessary. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
- b. Cover manholes and catch basins to prevent oil and materials from getting inside the structures or system.
- c. Closely monitor weather conditions to determine if treatment can be applied.
- d. Determine location of any waterways including, but not limited to storm drains, gutters, wells, canals, etc. that may need protection. Assess and implement appropriate BMPs.
- e. Acquire appropriate personal protective equipment (PPE) according to department policy.
- f. Cracks should be properly sealed. Alligator cracks and potholes should be removed and patched. Rutting should be milled.
- g. Uniformly apply and cure tack coat prior to placement of overlay.

#### 2. Process

- a. Check the hot asphalt mix for proper temperature, percentage asphalt, gradation, air voids, and any other agency requirements.
- b. Raise manhole lids and valves to elevation of new asphalt surface with riser rings.
- c. Surface texture should be uniform, no tearing or scuffing.
- d. Rolling should be done to achieve proper in-place air void specifications.

#### 3. Clean-Up

- a. Remove all loose aggregate from the roadway and gutters.
- b. Remove excessive asphalt applications and spills.
- c. Remove covers from manholes and catch basins along with any materials which have entered the storm drain structures.

#### 4. Documentation

- a. Record location and date on the maintenance log.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Streets – Slurry Seal

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the application of slurry seal.

### Procedure:

#### 1. Preparation

- a. Remove weeds from the roads. Sweep areas where materials are to be applied, and allow drying if necessary. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
- b. Cover manholes and catch basins to prevent oil and materials from getting inside the structures or system.
- c. Closely monitor weather conditions to determine if treatment can be applied.
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

#### 2. Process

- a. Ensure PPE is worn and BMPs are properly implemented to protect areas of concern from material.
- b. Apply materials in a smooth and uniform manner. Slurry material should not run onto adjacent pavement surface, curb and gutter or waterways.

#### 3. Clean-Up

- a. Sweep up all loose or extra material from roadway.
- b. Remove excessive asphalt applications and spills.
- c. Remove covers along with any materials that have entered the storm drain structures.

#### 4. Documentation

- a. Record location and date on the maintenance log.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Streets – Snow Removal

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for conducting snow removal operations.

### Procedure:

#### 1. Preparation

- a. Store de-icing material under a covered storage area or in an area where water coming off the de-icing materials is collected and delivered to the sanitary sewer or reused as salt brine.
- b. Wash out vehicles (if necessary) in approved washout area before preparing them for snow removal.
- c. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
- d. Supervisor vehicles have spill cleanup kits in case of hydraulic line rupture or other spills.
- e. Train employees in spill cleanup procedures and proper handling of de-icing materials.

#### 2. Process

- a. Load material into trucks carefully to minimize spillage.
- b. Periodically dry sweep loading area to reduce the amount of de-icing materials exposed to runoff.
- c. Distribute the minimum amount of de-icing material to be effective on roads.
- d. Turn spreader off while loading and any other time the vehicle is not moving in the forward position.
- e. Park trucks loaded with de-icing material inside when possible.

#### 3. Clean-Up

- a. Sweep up all spilled de-icing material around loading area.
- b. Clean out trucks after snow removal duty in approved washout area.
- c. Provide maintenance for vehicles in covered area.
- d. If sand is used in de-icing operations, sweep up residual sand from crosswalks, plazas, sidewalks and public walkways when weather permits. This material can be re-used or placed in a containment to be entered into the waste bin to the land fill.

#### 4. Documentation

- a. Record miles driven and materials used.
- b. Provide training on SOPs/SOIs.



## ACTIVITY: Streets – Street Sweeping

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1. & 4.2.6.7.2.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for street sweeping.

### Procedure:

#### 1. Preparation

- a. See BMP list for cleaning schedule.
- b. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
- c. Restrict street parking prior to and during sweeping using regulations as necessary.
- d. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
- e. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.

#### 2. Process

- a. Streets are to be swept as needed or specified by the city. Street maps are used to ensure all streets are swept at a specified interval.
- b. Drive street sweeper safely and pick up debris.
- c. When full, take the sweeper to an approved street sweeper cleaning station.

#### 3. Clean-Up

- a. Street sweepers are to be cleaned out in an approved street sweeper cleaning station.
- b. Street sweeping cleaning stations shall separate the solids from the liquids.
- c. Once solids have dried out, haul them to the local landfill.
- d. Decant water is to be collected and routed to an approved wastewater collection system area only.
- e. Haul all dumped material to the landfill.

#### 4. Documentation

- a. Keep accurate logs to track streets swept and streets still requiring sweeping.
- b. Log the amount of debris collected and hauled off.
- c. Provide training on SOPs/SOIs.





## ACTIVITY: Waste & Recycling – Pollution Prevention

Effective Date: 11/1/2017

Revision Date: 12/13/2021

Prepared by: Cory Young (Waste & Recycling)

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for employees to minimize pollutant discharge to the MS4 to the maximum extent practicable. Employees will be aware of the potential damage pollution from Waste & Recycling operations can have on waterways, property, and public health and take all appropriate measures to prevent spills, loose debris, dust and exposure.

### Definitions:

1. **Pollution:** Loose debris, trash, truck fluids and oils, chemicals, wash water, liquids from trash or cans, dust and any material that could get into storm drains or waterways.
2. **Stormwater:** Water from surface runoff (rain, snowmelt) that flows over hard surfaces such as parking lots, driveways, streets, and sidewalks into the storm drain system.

### Spill Procedure:

1. Immediately report any uncontained spill you cause or see to your supervisor or lead.
2. If the spill is coming from your equipment, try to position the equipment downhill or away from open storm drains, gutters or areas with access to waterways.
3. Capture and contain the spill with containers, absorbents, or pads – call for backup for large spills that cannot be quickly contained.
4. Be aware of safety and keep the public away from the area.
5. Use dry methods to clean up after the spill has been contained: scoop and sweep up all absorbents, clean up the entire area without using water, and appropriately dispose of spilled materials including absorbents.

### Roles and Responsibilities

1. **All Employees:**
  - a. Report spills you see in the community.
  - b. Understand the potential pollution from your job duties.
  - c. Keep trash containers closed and in good condition.
  - d. Clean up debris and liquids that result from normal daily operations.
  - e. Know where the closest spill kit and cleanup equipment are located.
  - f. At the wash bay, park your truck so that water does not run into a storm drain.
  - g. And debris must be cleaned up and placed in the trash cans on site.
  - h. Use the steam bay only to clean grease and oil for repair work; pull far enough into the bay so that water flows into the bay drain and not out onto the parking lot.
2. **Packers:**
  - a. Check your spill kit as part of your morning pre-trip inspection – get a new kit from your supervisor as needed.
  - b. Check your truck after each load for hydraulic, oil and other leaks.
  - c. Watch for hydraulic spray on the roads.
  - d. Clean up spills and leaks from packer parking areas.
  - e. Report broken cans and lids on your route.
3. **Call-2-Haul (C2H):**



## ACTIVITY: Waste & Recycling – Pollution Prevention

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Cory Young (Waste & Recycling)  
Reviewed by: Matthew Hendrix

- a. Periodically inspect your equipment throughout the day for leaks and watch for hydraulic spray and spills on roads.
  - b. Check your stops for containers that may have hazardous material in them and contact your supervisor or lead.
  - c. While collecting stops when water is flowing in the gutters, attempt to prevent loose material from flowing down gutters.
  - d. Clean up after each load and do not sweep debris into gutters.
  - e. Avoid stirring up dust as much as possible.
  - f. Avoid moving loose materials at DeLong on windy days.
- 4. Container Maintenance:**
  - a. Clean up around your work area on route and at DeLong.
  - b. Make sure garbage is contained in closed cans.
  - c. Whenever possible, wash cans in the can wash area rather than at the open truck wash bays; if you use the wash bay, ensure water goes into the wash drain, not stormwater.
  - d. Make sure notices you leave for customers are securely attached to cans.
- 5. Education and Enforcement:**
  - a. Make sure the notices you leave are secured to cans or at the door to prevent them from blowing away.
  - b. Monitor the areas you go through for spills and debris caused by others and report them to your lead.
  - c. Carry extra spill absorbents to respond to spills, as needed.
  - d. Report all broken and missing garbage can lids.
- 6. Supervisors:**
  - a. Respond to spills in the field to assist with any cleanup and support employees.
  - b. Report spills that enter storm drains. Any hydrocarbon-based spill (hydraulic fluid, oil, etc.) that can run to a storm drain needs to be reported to Public Utilities Dispatch: **801-483-6700**
  - c. Coordinate hazardous materials handling with Salt Lake Valley Health Dept.: **385-468-8888 (option 8)**
  - d. Contact the Landfill and hazardous loads prior to disposal: **385-468-6370**
  - e. Train new employees and employees who are switching job duties on pollution prevention procedures.
- 7. Program Manager:**
  - a. Coordinate spill cleanup with Streets as needed.
  - b. Coordinate annual training with Public Utilities.
- 8. Director:**
  - a. Update policies and procedures as needed.
  - b. Coordinate SWPPP with Public Utilities and other departments.

### Training:

- Field employees will have annual SWPPP training that meets the requirements from Public Utilities.
- Office employees will receive one-time training.
- New employees will be trained on hire.
- Employees will be trained when they shift to new duties.



## ACTIVITY: Water Quality – Ceasing & Removing Illicit Discharges

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.6.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for ceasing, removal and notification of illicit discharges.

#### Procedure:

##### 1. Preparation

- a. Obtain available property ownership information for the source of the illicit discharge.
- b. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Determine who is financially responsible; and follow associated procedures as given below.
- b. For Private Property Owner:
  - i. Contact owner
  - ii. Issue any enforcement procedures in accordance with City ordinance
  - iii. Determine schedule for removal
- c. For Municipal Facility:
  - i. Notify appropriate municipal authority or department head
  - ii. Schedule removal
  - iii. Remove illicit connection
- d. Suspend access to storm drain if threats of serious physical harm to humans or the environment are possible.
- e. Direct responsible party to initiate repairs/corrections/cleanup. Coordinate with enforcement official for escalating penalties in accordance with the City ordinance and Utah Water Quality Act Civil Penalty Determination.
- f. Repair/correct cause of discharge if municipality is responsible. Schedule the work through the appropriate municipal authority or department head.
- g. In accordance with the MOU, seek technical assistance and/or enforcement action from the Salt Lake County Health Department, if needed.

##### 3. Clean-Up

- a. Confirm illicit discharge is removed or eliminated by follow-up inspections.

##### 4. Documentation

- a. Maintain records of any enforcement actions.
- b. Document repairs, corrections, and any other actions required.
- c. Provide training on SOPs/SOIs.



## ACTIVITY: Water Quality – Commercial (High-Risk) Facility Inventory, Prioritization, and Education Program

Effective Date: 8/21/2019

Revision Date: 12/9/2021

Prepared by: Salt Lake City Water Quality

Reviewed by: Matthew Hendrix

**Permit Requirements:** 3.2.1.2., 4.2.1.1., 4.2.1.3., 4.2.1.3.1., 4.3.1., 4.3.1.1., 4.3.1.3., and 4.3.2.

**Purpose:** To provide systematic procedures for inventorying and prioritizing commercial facilities that have a potential for discharging pollutants to the Salt Lake City MS4.

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for assessing categories of commercial facilities for their potential to contribute pollutants to the MS4, maintain an inventory of commercial facilities that are identified as priority high-risk sites, and targeted outreach and education to those facilities.

### Procedure

- 1. Commercial Facility Inventory:** The MS4 Permit requires an industrial and high-risk commercial inventory. This inventory will be derived from new business applications, Industrial and Commercial User Questionnaire (ICUQ), and referrals from the public, SLCoHD, and other city personnel. Once identified, the facility will be assessed for potential prioritization based on categories listed in part 2 of this procedure. The following information on priority commercial sites will be recorded for tracking purposes:
  - a. Name
  - b. Address
  - c. Physical location of storm drain receiving discharge
  - d. Name of receiving water
  - e. Pollutants potentially generated by the site/source
  - f. Identification of whether the site/source is (1) tributary to an impaired water body segment (i.e., whether it is listed under Section 303(d) of the Clean Water Act) and (2) whether it generates pollutants for which the water body segment is impaired.
  - g. A narrative description including the North American Industry Classification System (NAICS) codes, which best reflects the principal products or services provided by each facility
- 2. Priority Commercial:** The MS4 permit requires that high-risk commercial sites be prioritized for targeted outreach and education, annually. **Sites that fall in the following categories shall be considered for inclusion in the inventory of priority commercial facilities:**
  - a. Automobile and other vehicle body repair or painting
  - b. Automobile (or other vehicle) parking lots and storage facilities
  - c. Automobile repair, maintenance fueling, or cleaning
  - d. Building material retailers and storage
  - e. Cement mixing or cutting
  - f. Eating or drinking establishments (e.g., restaurants), including food markets
  - g. Equipment repair, maintenance, fueling, or cleaning
  - h. Golf courses, parks and other recreational areas/facilities
  - i. Landscaping
  - j. Masonry
  - k. Mobile automobile or other vehicle washing
  - l. Mobile carpet, drape or furniture cleaning
  - m. Nurseries and greenhouses



## ACTIVITY: Water Quality – Commercial (High-Risk) Facility Inventory, Prioritization, and Education Program

Effective Date: 8/21/2019

Revision Date: 12/9/2021

Prepared by: Salt Lake City Water Quality

Reviewed by: Matthew Hendrix

- n. Painting and coating
- o. Pest control services
- p. Pool and fountain cleaning
- q. Portable sanitary services
- r. Power washing services
- s. Retail or wholesale fueling
- t. In addition:

- a. all other commercial sites/sources that discharge to an impaired water body segment or generates pollutants for which the water body segment is impaired.
- b. All other industrial and "priority" commercial sites/sources that the City determines may contribute a significant pollutant load to the MS4 including those that may have a history of past water quality problems.

**3. Priority Commercial Site Categorization Determination:** SLCDPU will assess the categories for commercial site prioritization on an annual basis, taking into consideration shifting priorities and evolving business communities in Salt Lake City. Currently, the following categories will be prioritized for evaluation for potential inclusion in the High-Risk Runoff outreach and education program:

- a. Automobile and other vehicle body repair or painting
- b. Automobile repair, maintenance, fueling, or cleaning
- c. Eating or drinking establishments (e.g., restaurants), including food markets

The city has chosen to prioritize automobile categories due to those having the greatest risk to discharge pollutants. Eating and drinking establishments will also be prioritized due to the potential for SSO and improper waste management. All other categories were not selected due to the mobile nature of the occupation (e.g. landscaping, pest control, etc.) or the lack of a history of water quality problems. However, any commercial entity that fall into the categories listed in 4.3.1.2. and 4.3.1.3. may also be evaluated for the potential for priority status at any time, if deemed necessary.

**4. Public Outreach and Education to Priority High-Risk Commercial Entities**

- a. Outreach and education will include the following:
  - Nitrogen and Phosphorus:
    - 1. The City must identify and target sources (e.g., residential, industrial, agricultural, or commercial) that are contributing, or have the potential to contribute, nitrogen and phosphorus to waters of the state, where the Permittee is authorized under this Permit to discharge.
  - Targeted Pollutants and Sources:
    - 1. Target specific pollutants and pollutant sources determined by the Permittee to be impacting, or have the potential to impact, the beneficial uses of a receiving water. This includes providing information which describe the potential impacts from storm water discharges; methods for avoiding, minimizing, reducing and /or eliminating the adverse impacts of storm water discharges; and the actions individuals can take to improve water quality, including encouraging participation in local environmental stewardship activities;
  - Annual Requirement:



## ACTIVITY: Water Quality – Commercial (High-Risk) Facility Inventory, Prioritization, and Education Program

Effective Date: 8/21/2019

Revision Date: 12/9/2021

Prepared by: Salt Lake City Water Quality

Reviewed by: Matthew Hendrix

1. Provide and document education and outreach given to institutions and industrial and commercial facilities on an annual basis of the Permittee's prohibition against illicit discharges and improper disposal of waste and the impacts to water quality associated with these types of discharges. The education and outreach should consider the following topics:
    - a. proper lawn maintenance (use of pesticides, herbicides and fertilizer);
    - b. building and equipment maintenance (proper management of waste water);
    - c. use of salt or other deicing materials (cover/prevent runoff to storm system and contamination to ground water); proper storage of materials (emphasize pollution prevention);
    - d. proper management of waste materials and dumpsters (cover and pollution prevention); and
    - e. proper management of parking lot surfaces (sweeping).
    - f. These topics are not inclusive, and the City will focus on those topics most relevant to the community.
  2. The City must select a minimum of two (2) "priority" commercial sources annually from the inventory required by Part 4.3.1.3. and provided education and outreach specific to the type of commercial source selected.
    - a. The outreach must focus on Permittee's prohibition against illicit discharges and improper disposal of waste and the impacts to water quality associated with these types of discharges.
    - b. It must specifically address the common pollutants associated with the type of commercial site selected and ways that the commercial sites could prevent the discharge of pollutants into the MS4.
- b. Documentation requirements:
- 1) Any outreach and education conducted shall be tracked on the Public Outreach and Education Tracker spreadsheet (assigning the MCM Category as "Industrial High-Risk: Priority Commercial").
  - 2) Files of the shared content, as well as the communication associated with it, will be saved in the Public Outreach and Education folder on the i-drive under "Commercial" for the fiscal year in which the outreach and education occurred.
  - 3) Feedback should be requested and recorded.



## ACTIVITY: Construction Site Inspections and Oversight

Effective Date: 11/1/2017

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.4

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for conducting SWPPP inspections and the oversight of permitted construction sites, including quality control, to ensure compliance with State and City stormwater regulations..

### Project Tracking Procedures:

- New Projects:
  - Identified by emails from Development Review Team (and/or state's database reconciliation).
  - Create a folder on the city's network (I-drive) under the "pending projects" subfolder.
  - Add project to the "Projects" table of the tracking database; status shall be "Pending" until approved to start construction.
  - Add the project to the "Storm Water Quality" map on ArcGIS Online (<http://slcgov.maps.arcgis.com/home/webmap/viewer.html?webmap=b7f3aa1c1a9647df9f806348d3415a6f>) by left-clicking on the "Edit" tab, selecting (left click) the "Storm Water Permit **Preconstruction**" symbol (black target), and then clicking on the project's location on the online map
    - Fill out all known details of the project's attributes,
    - Attach any approved compliance documentation to the map point (click "edit" and "Choose File" to map to the documents)
  - As compliance documents are received, they are stored on the I-drive in the individual project file folders and then added to the online map (as attachments to the respective project)
  - As compliance documents are approved/accepted, update the "Project" table of the inspections tracker to reflect when each item (SWPPPs, NOIs, etc) is completed.
  - A work order must be created in Cityworks for each new project (to be maintained and amended through the life of the project).
- Pending Projects:
  - While the "status" of a project is "Pending", regulatory compliance inspections have not started because initial/pre-construction compliance has not been achieved.
  - The project will remain in the pending folder (i-drive) until it has a pre-con and initial inspection completed, at which time it will be moved to the active folder ("Zone 1").
  - All compliance documentation must be received/approved and all permitting steps (including permit issuance) must be completed before project status can be moved to "Active"
  - To ensure projects do not begin land disturbance without SLCPU-SWQ being aware (before achieving full compliance and regulatory approval to begin working) all pending projects should be visited by SWQ staff at a frequency necessary to catch and respond rapidly to unpermitted activity (a monthly drive-by inspection is preferred).
  - If a project is found to be operating without achieving full (initial) compliance with all stormwater regulations and/or without approval of SLCPU-SWQ, the project will be shut down immediately until compliance is achieved.





## ACTIVITY: Construction Site Inspections and Oversight

Effective Date: 11/1/2017

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- Active Projects:
  - When a project is approved to begin construction, the status is changed in the “Projects” table of the tracker (from Pending to Active), and a “next inspection due” date is added (this inserts the project in the program’s inspections cycle)
  - The project’s map point on ArcGIS online should then be edited so the “Status” is changed to “Storm Water Permit Active” (this changes the map symbol from a Black target to a Red target)
    - If the project is known/found to have a dewatering permit, use the “Dewatering Permit” status (blue target) so it stands out as such on the online map.
    - The UPDES dewatering permit number must be added to the projects tracking database, and the inspections tracking software should also be updated to reflect this.
  - After every inspection, the “Projects” tab is updated to reflect the new “Next Inspection Due” date.
- Closing Projects:
  - When a project is terminated, the status is changed from “active” to “closed” in the “Projects” table of the tracker, and the “next inspection due” date is deleted. (This removes it from any future inspection-scheduling.)
  - After verifying all compliance documentation is on-file and current, NOT has been received, and the NOT-inspection has been conducted, the project is moved to the “Projects – Closed” table of the tracking database, and the project’s file folder (in the I-drive) is moved out of the “Projects” folder to the “Completed Projects” folder, based on the fiscal year it was terminated.
  - The project’s map point on ArcGIS online should then be edited so the “Status” is changed to “Storm Water Permit Completed”
    - All final compliance/regulatory documentation should be attached to the map point.

### Project Inspection Procedures:

- Initiating Projects:
  - After all compliance documentation has been received, schedule a Pre-Construction meeting (ASAP) with the operator to discuss expectations and establish open line of communication.
    - Provide the “Pre-Construction Meeting – Storm Water Packet” of educational material to the operator or site supervisor, and have them initial the first page, indicating understanding of each section of the packet.
    - During the Pre-Con, discuss the contents of the SWPPP, responsible parties and contact information, City and State prohibitions against illicit discharges, any planned training for the operator and/or subcontractors, and the potential for dewatering. Enforcement practices should be explained
    - After completing the Pre-Con, enter the Pre-Con as an inspection on the tracking database (“Inspection Type”), and then add the date of the pre-con to the “Pre-Con Date” column
  - REMINDER: It is not an initial inspection, per the tracking table, unless BMPs are in place and the site is 100% compliant and ready to begin work.) **The project is not cleared to proceed with land disturbance until a pre-construction meeting and an initial inspection of installed BMPs and permit compliance assessment has been conducted.**
    - If BMPs are installed (correctly, per plan) at the time of the Pre-Construction meeting, an “initial” inspection should be completed and the regular inspections frequency can start.





## ACTIVITY: Construction Site Inspections and Oversight

Effective Date: 11/1/2017

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- The Initial Inspection should be added to the Inspections table of the tracker; be sure to call it an “Initial” inspection (for “inspection type”).
  - When approved to begin land disturbance, the project’s status should be changed to “Active” on the “Projects” table of the Inspections tracker and the project’s documentation folder should be moved to the “Projects” folder on the i-drive.
    - And the online map should be updated so the project’s status is changed from “Storm Water Permit Preconstruction” to “Storm Water Permit Active”
  - If not already created, a work order should be started for the project in Cityworks; this will be used for tracking SLCDPU-SWQ’s time and resources through the life of the project.
- Inspecting Projects:
  - Pre-Inspection:
    - Identify inspections for the day (to be determined by the Construction MCM Stormwater Quality Coordinator, or the Stormwater Compliance *Specialist* if the coordinator is not available, based on scheduled follow-ups and required periodic/priority inspections)
      - The scheduling is done via the “Projects” table of the database; this requires sorting the “Next Inspection Due” column (oldest to newest);
      - Oldest “next inspection due” should be conducted to maintain the inspections schedule but Follow-Up (reinspection) and Priority-Projects should be prioritized if there is a scheduling conflict
      - The date of the intended inspection is added to the “Next inspection Scheduled” column so that it can be readily identified which sites are being inspected on a given day.
    - Contact operators to schedule an inspection time (as needed/able)
      - This is a good practice but is not required if operator cannot be reached.
    - Gather each site’s compliance information to assess enforcement status (including prior SEV-Fines) and verify specific corrective actions to be checked (can be done in the field with ArcGIS Online).
      - Use the database query (“SEV Codes”) on the tracker to verify the previous enforcement history for a project.
      - Filter the “Project Name” column by deselecting all and then selecting the projects to be inspected. Make note of previously issued SEV-fines so the correct escalation occurs, per the SEV Fine Schedule.
    - Gather PPE and Equipment needed to complete the inspections task:
      - Personal protective equipment (PPE) i.e. Steel toe boots, safety vest, hard hat
      - Credentials (i.e. employee identification badge)
      - Camera, phone, tablet, or other device to take pictures
      - Inspection form is on ComplianceGO (software); must bring a tablet or smart phone to conduct the inspection in the field.
      - Field sampling/test equipment (for assessing discharges)
  - Conducting Inspection:
    - Ensure proper PPE and Credentials are worn during inspection.
    - Conduct SWPPP compliance review. NOTE: SLCDPU-SWQ inspections are a regulatory audit of the permittee’s process and compliance with permit requirements; major components to check:
      - SWPPP Inspections active and timely



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Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- Following inspection frequency as stated in SWPPP
  - Reports added to the SWPPP within 24-hours of inspection
- Corrective actions log updated and corrections completed in a timely manner
  - Date/time, location, and nature of corrective action should be captured in the log
- NOI (UPDES and SLC-SWQ) included and active (not expired)
  - Permit numbers should be on the site notice AND in the SWPPP
- SWPPP contacts updated and roles/responsibilities detailed and adhered to
- BMP map updated with changing site conditions
  - This living document should have mark-ups/highlights, dates of added/removed BMPs, and locations of stockpiles and infrastructure identified on map, as well as areas of inactivity and varying stabilization
- Conduct physical inspection(s) of BMPs and site conditions
  - Document with notes and photos.
  - Consider egregiousness of deficiencies (potential for discharge, or indications of discharge), as well as whether the deficiency was intentional, when determining the severity of the deficiency and the regulatory response.
- Identify any necessary corrective actions and discuss deadline for corrective actions with operator; this may include determining if existing BMPs are sufficient.
  - If giving a deadline for completing corrective actions, there must be an inspection tracked that shows this was completed.
  - If no site-visit is needed to assess completed corrections, the reinspection should be added as a “Compliance Update” on the tracker.
- If an illicit discharge is detected during course of an inspection, the inspection will be completed, and enforcement followed, but a separate IDDE investigation will be initiated (in the IDDE MCM) and enforcement handled (as needed) to resolve the discharge.
- Create inspection in report.
  - As with all forms/reports/trackers, it is imperative that all date fields are filled out. (If a NO is answered to a question, add “N/A” or “None” to that field.)
- Get operator to sign inspection report (as able)
  - If unable to get operator’s signature, it is acceptable to use the “Request a Delivery Receipt” and “Request a Read Receipt” functions in Outlook as confirmation that the emailed report has been received by the operator; if SEV-Fines are being issued, a signature is required.
- Post-Inspection:
  - Email inspection report to operator and any other appropriate parties (\*Can be done back in the office)
  - Add inspection .PDF to “Storm Water Quality” map (ArcGIS Online: Collector app)
  - Add to work order in City Works
    - If this is a new project, the work order needs to be created first.
    - REMINDER: The Work Order is kept open for the life of the project and updated after each inspection to account for City resources.



## ACTIVITY: Construction Site Inspections and Oversight

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Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- Add inspection to inspections tracker database on the I-drive and move inspection report (.PDF) to the project subfolder (I-drive)
  - When adding to the tracker, use inspection “TYPE” (pre-con, initial, scheduled SWPPP, Reinspection, Compliance Update, drive-by, complaint, or final)
    - The “Compliance Update” type is a non-inspection where corrective actions are confirmed electronically but no site inspection occurs (such as operator emailing pictures of corrections, or missing inspection reports from SWPPP)
    - The “reinspection” type is for any site visits to follow-up on deficiencies from an inspection.
  - NOTE: After every inspection is entered on the tracker, ensure the “Next Inspection Due (date)” is filled out on the “inspections” table and added to the “Projects” table of the tracker, too.
- Complete any enforcement escalation/documentation/correspondence and update the “enforcement actions” column of the tracker. Include every action associated with a particular inspection, such as: verbal/written warning notices, cost recovery, SEV-Fines, notices of violation, stop work notices, affidavits of probable cause) separated by a semicolon between each action
  - For adding enforcement actions to the tracker, use the naming convention: Action (ISSUING AGENCY)
    - Examples: Stop Work Notice (SLCDPU); Notice of Violation (SLCoHD); SEV-Fines (SLCDPU);
  - If issuing SEV-Fines, be sure to document these in the “Enforcement Actions” column of the inspection entry on the Inspections table.
    - Use the naming convention: SEV-\$\*\*\*##(#); where the \$ amount is the TOTAL fine for that inspection/event, the first ## is the SEV-code number and the second (#) is the tracking of 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> offense. Example: SEV-\$100: 21(2) means: Code 21, 2<sup>nd</sup> Offense; \$100.
      - If multiple SEV fines issued: continue the existing entry with a semicolon and each SEV code; the total fine amount is added first (e.g.: SEV-\$200: 20(1);21(1))
      - If the SEV Code has a multiplier, such as SEV-1, then the documentation should read: SEV-1(1x2) for 2 months multiplier (as example of not having a SWPPP for 2 months)
      - If an “Additional Factors” SEV is issued, ex: SEV-41(1x0.2) to show 20% penalty added. Another ex: SEV-39(1x0.15)
- Update Accela with the inspection fees for this inspection.
- Update Accela with any SEV-Fines that are issued, if applicable.
  - NOTE: Accela is a permit/fees tracking program and the fines are tied to a PUT permit # that is associated with each project. These fines can be paid regularly, or at end-of-project, whichever is preferable to the operator.
- Schedule follow-up on tracker and outlook (as needed), based on outcome of the inspection and deadlines imposed:



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- Use Reinspection if there is a need to conduct a site visit to assess corrective actions
  - Use the “Compliance Update” if compliance can be determined digitally
  - If scheduling the next periodic inspection, stick to the expected frequency (monthly, bi-weekly, weekly)
  - If scheduling a follow-up to assess corrective actions from a failed/non-compliant inspection, use best judgment for what is an acceptable timetable for corrective action but make sure you add as a follow-up date on the tracker and use outlook (add [Stormwaterquality@slcgov.com](mailto:Stormwaterquality@slcgov.com) as an invitee).
- Also, check weather forecast to determine if any rain events are anticipated, as this may affect the urgency of corrective action
- Final Inspections (“NOT”):
  - NOT/Final-inspection is required before a project can be closed out
    - The inspection should be entered on the Inspections tracking database table as a “Final” inspection in the “Inspection Type” column.
  - The following items must be completed before project can be terminated:
    - All disturbed areas must be stabilized (or stabilization adequately initiated within 14-days of inactivity/completion)
    - All temporary BMPs must be removed
    - Site must be clean of all blowable/floatable debris, and all construction-related (potential) stormwater pollutants have been removed
    - The UPDES CGP NOT must be submitted to the State and a copy received by SLCDPU
    - The City Permit NOT must be received by SLCDPU
    - Final inspection fee added to Accela.
    - All fines/fees must be paid before the project can be officially terminated
  - If there are any temporary BMPs on-site, disturbed areas have not been stabilized, or any pollutant generating activities occurring onsite, then the inspections must continue at this site until final termination is achieved.
    - It is no longer a FINAL inspection if the site is not ready for termination.
  - The project’s map point will be edited in ArcGIS online.
  - The project documentation folder should be moved to the “Completed Construction Projects” subfolder on the i-Drive
- Quality Assurance and Control (QAQC):
  - The Stormwater Quality *Coordinator* for the Construction MCM Program is responsible for setting the daily inspections schedule, and tracking what is completed and what was not (so as to ensure no inspections are missed)
  - The *Coordinator* is responsible for assessing the weekly verifications of work quality and compliance with SOPs and MS4 permit requirements.
    - This is done using the “Weekly Verifications” form on the i-drive QAQC subfolder “All Audits and Corrections” located here: I:\Storm water\QAQC\All Audits and Corrections\MCM\_Compliance Audits (SWQ & SAW)\1. Weekly (SWQ)
    - These should be conducted Friday afternoon to verify the work for the preceding 5 days (work week)



## ACTIVITY: Construction Site Inspections and Oversight

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Reviewed by: Matthew Hendrix

- The *Coordinator* will list the QAQC deficiencies found in the weekly verifications, identify the responsible party, set a timeline for completion and update the audit tracker with these details.
- The *Specialist* will conduct monthly verifications (QAQC) at the start of the last week of the month to ensure timely assessments and comprehensive corrections and provide an opportunity to correct deficiencies before month's end
- Failures to correct deficiencies by the compliance deadline will result in disciplinary actions by SWQ Program Manager.
- If the team falls behind on inspections, the *Coordinator* will reach out to the SWQ-team for assistance
- The Stormwater Compliance *Specialist* will be the designated person to conduct QAQC verifications and follow-up when the *Coordinator* is not available
- Fees, Time, and Resource Tracking:
  - All inspection, reinspection, and cost-recovery fees should be added to Accela for the PUT# on file for the given project.
  - SEV-Fines that are issued should be added to Accela but must reflect the final amount indicated on the construction regulatory tracking database (which should mirror what is on the report); in the event that a fine was either rescinded or reduced, a note must be added to the "SEV-NOTES" column to explain the discrepancy.
  - The project's Work Order in Cityworks should be updated with every inspection.



## ACTIVITY: Water Quality – Dewatering – Regulatory Oversight

Effective Date: 9/24/2021  
Revision Date: 11/23/2021

Prepared by: Storm Water Quality (SWQ) Division  
Reviewed by: G.Archuleta (SWQ)

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard procedures and instructions for the permitting and regulatory oversight of discharges from dewatering activities into the City's storm sewer system and/or waters of the state within SLC MS4 jurisdictional boundaries.

### Procedure:

#### 1. Permitting

- a. Ordinance 17.84.700 requires a City Discharge Permit for any activities that require an UPDES permit (including UTG070000: Construction Dewatering & Hydrostatic Testing, and UTG790000: Treated Groundwater)
  - i. Since all state permits must have a city permit, the i-drive tracker must be updated regularly and compared to the state's database to ensure that no discharges occur without proper permit coverage. This reconciliation should be done on a monthly basis.
  - ii. As part of this reconciliation with the State's database: any UPDES permits issued within SLC that do not have a corresponding City Discharge Permit must be contacted (templates available on i-drive) and directed to obtain city permit coverage before any dewatering activities may commence onsite.
- b. **If dewatering has not begun**, the permitting process will be, as follows:
  - i. Operator develops a Dewatering Control Plan (DCP) in compliance with UPDES permit requirements
  - ii. Operator obtains UPDES permit coverage for the dewatering activities (either treated groundwater vs construction & hydrostatic testing) by submitting an appropriate NOI to the state and making fee payment
  - iii. Operator submits DCP to [Stormwaterquality@slcgov.com](mailto:Stormwaterquality@slcgov.com) for review and approval
  - iv. Operator obtains City Discharge Permit (dewatering) coverage by submitting a City NOI (to be processed only once the DCP has been approved and fees are paid) and receiving a permit letter with city letterhead from SLCDPU-SWQ (template available on i-drive)
- c. **If dewatering has begun without full permit compliance**, the dewatering activities must be shut down until permit coverage(s) obtained and compliance has been achieved (see 1.b.);
  - i. SEV fines should be issued for this violation (operating without permits)
- d. Once approved, operators are issued a new PUT# (via Accela) for City Discharge Permits
  - i. If the dewatering is associated with active construction already covered under a PUT#, then this dewatering permit fee can be added to the existing PUT#
- e. There is an annual renewal requirement for both the state permit AND the city permit.





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Reviewed by: G.Archuleta (SWQ)

- i. Prior to permit expiration, operator must renew UPDES permit with the state, and must submit an SLC Notice of Intent to Renew Permit Coverage (NOI-Renewal) form with fee payment
- f. All fees are added to Accela for the PUT# issued (Application fee: \$125, initial inspection: \$110)
- g. Create a work order in Cityworks for the dewatering/construction project
- h. Create a map-point on the online GIS map (permit type is “Dewatering”)
  - i. Add permit documents to the map point
  - ii. Add the approved DCP to the map point
- i. Create a project file on ComplianceGo for this activity (use the Dewatering division)

### 2. Inspections

- a. Initial Inspection:
  - i. To be completed after City permit issuance but before dewatering commences.
  - ii. Will include an on-site review (and discussion with the operator, similar to a pre-construction meeting) of the following items: DCP, treatment system, associated BMPs, and a discussion of the inspections, documentation, monitoring, and reporting requirements (as per the applicable state permit).
  - iii. Expectations for compliance will be provided at the initial inspection and if the treatment system and associated BMPs are in place, according to the approved DCP, then the project is cleared to commence with dewatering activities.
- b. Periodic Inspections:
  - i. Frequency:
    - 1. If (permitted) construction related: To be completed during the course of regulatory inspections of construction sites
    - 2. If (unpermitted) construction (<1-acre and not CPoD, High-Profile, Sensitive Area, or City project), OR non-construction related (such as Treated Groundwater): To be inspected quarterly with randomized site visits to ensure treatment is ongoing.
- c. Procedure:
  - i. Verify that the dewatering permit is still active and permit conditions have not changed
  - ii. Look at inspection logs and discharge monitoring logs to confirm inspections, sampling, and monitoring are being done (per UPDES permit requirements);
    - 1. Look closely for logged deficiencies, exceedances, and associated corrective actions.
    - 2. Verify that discharge monitoring reports are being submitted to the State
  - iii. Inspect site to ensure the approved treatment system is being employed with no deviations from the DCP
  - iv. Inspect site for visual clues of exceedances (upsets) and impacts from discharges (erosion, sedimentation, etc.); if found, corrections are needed
    - 1. If discharge is (visually) suspected of exceeding permit limits, take a sample of the discharge and submit to a contract laboratory for analysis.



## ACTIVITY: Water Quality – Dewatering – Regulatory Oversight

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2. If outside of normal working hours for the laboratory, place the sample in the sampling refrigerator until it can be submitted.
  - v. Document (with pictures and notes) any deficiencies in need of correction
  - vi. Fill out the dewatering inspection form on ComplianceGo and send to operator for signature and records retention
  - vii. Determine deadline for corrective actions and communicate this to operator

### 3. Post-Inspection

- a. Save copy of report (PDF) to the i-drive subfolder for the dewatering/construction project
- b. Update workorder in Cityworks
- c. Add fees/fines to Accela (to the PUT# issued for dewatering)
- d. Add inspection report to online GIS map
- e. Schedule follow-up (as needed) via MS Access (database tracker) and Outlook (invite [Stormwaterquality@slcgov.com](mailto:Stormwaterquality@slcgov.com) as an attendee so it ends up on that calendar)
- f. Add the inspection to tracking database

### 4. Follow-up (Reinspection)

- a. Any inspection-identified deficiencies must be followed up on to ensure the appropriate corrective actions have been completed;
  - i. Depending on the egregiousness of the deficiency, this may need to be scheduled for a quick turnaround, otherwise this can be checked on the next monthly regulatory inspection (bi-monthly if a priority construction site), or quarterly site visit.
  - ii. If there is no need to physically visit the site (proof of corrections provided electronically or is a permitting matter rather than an onsite deficiency) then a “Compliance Update” inspection can be added to the tracker
- b. Conduct the reinspection to verify corrections have been completed and the site is brought back into full compliance
  - i. If deficiencies were not fully corrected:
    1. Issue SEV fines (escalating for continued non-compliance)
    2. Set another deadline for corrective actions (shorter timeframe, as needed) and communicate this to the operator
    3. Email “short form” inspection report to operator for signature and records
    4. Continue to post-processing steps (Section 3, above)
  - ii. If deficiencies have been fully corrected (and no additional violations were observed during reinspection):
    1. The site is in-compliance and no further action is needed for enforcement;
    2. Continue to post-processing steps (Section 3, above)
- c. Reinspection fee of \$30 is applied (via Accela) to the PUT# issued for the City permit

### 5. Enforcement

- a. There is an SEV Fines schedule for the dewatering program; utilize this for fines.
- b. The overall regulatory enforcement plan will be the same as the construction program in terms of setting timeline for corrective action and general procedure for regulatory enforcement escalations.





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Reviewed by: G.Archuleta (SWQ)

### 6. Documentation

- a. A report is created on ComplianceGO for the inspection and should be saved on the i-drive and online GIS map.
- b. All follow-ups must be tracked, and any permitting/enforcement communication shall be documented.
- c. Enforcement actions are added to the inspections tracker and saved in the individual file folder for each dewatering permit.
- d. Cityworks work orders must be updated
- e. Accela must be updated with fees and fines

### 7. Training

- a. Annual training is required for all employees whose job relates to the inspection and enforcement of dewatering permits.
- b. New hires will be trained within 60-days of their start date.



## ACTIVITY: Escalating Enforcement - Illicit Discharge Detection and Elimination (IDDE)

Effective Date: 4/1/2019  
Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division  
Reviewed by: M.Hendrix

### Permit Requirement 4.2.3.2, 4.2.3.6

**Purpose:** To provide guidance for escalating enforcement actions relating to storm water violations pertaining to Salt Lake City Code Chapter 17.81 and 17.84 and Salt Lake City's MS4 UPDES permit UTS000002.

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for a variety of enforcement actions specific to the City's IDDE program as deemed necessary for the severity of the violation and in following with the enforcement options available in Salt Lake City Code Chapter 17.87.

### Escalating Enforcement:

#### 1. Verbal Warning

- a. When a **minor** violation is seen/reported, the City will inform the violator(s) of the infraction and require immediate cessation depending on the severity of the violation.
  - i. A **minor** violation is identified as one or more of the following:
    1. A low-volume, non-hazardous material discharge which did not reach a storm inlet.
    2. A discharge that did not cause harm to the biological/chemical/physical quality of receiving waters.
    3. A discharge that did not affect the operation or integrity of the storm sewer system.
    4. A discharge that was accidental in nature
    5. A discharge that was the responsible party's first-time in violation of City Codes in Chapter 17.81 and 17.84.
- b. If a verbal warning is issued, the violator(s) will be given a timeframe to comply. This period may be immediate or up to 7 days depending on the severity of the violation(s).
  - i. Immediate compliance and remediation will be required when rain is forecasted within a 2-day period and there is a potential for direct discharge to the city's storm sewer system.
  - ii. If rain is forecasted within a 7-day period, the required compliance deadline shall be before that forecasted rain event.
  - iii. When these minor violations have the potential to affect public health and safety, such as discharges that might create a pedestrian or vehicle slipping hazard on a public right-of-way, the discharged material must be cleaned/remediated immediately.
  - iv. If the violator is found to have been a repeated violator of the City's Codes and Ordinances protecting water quality, the violator will be required to remediate the discharge immediately, and enforcement escalation will proceed.
- c. City will reinspect at close of timeframe to ensure compliance.



## ACTIVITY: Escalating Enforcement - Illicit Discharge Detection and Elimination (IDDE)

Effective Date: 4/1/2019  
Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### 2. Stop Work/Activity Notice

- a. If the violator(s) do not comply within the given timeframe of the verbal warning, the City will issue a Stop Work/Activity Notice in which the violator(s) must cease all activity on-site until compliance is achieved.
  - i. If the violators are a commercial operation (not covered by an UPDES permit) then Stop Work Notice will be issued.
  - ii. If the violation is not associated with a commercial operation, then the violator(s) will be given a Stop Activity Notice.
- b. If the violation is an **egregious/major** discharge, the violator(s) will be issued a Stop Work /Activity Notice immediately and escalation of enforcement will proceed.
  - i. An **egregious/major** discharge is identified as “a larger-volume, hazardous, or highly reactive discharge that entered the City storm sewer system and either caused (or had the large potential to cause) biological/chemical/physical alteration of receiving waters, per state water quality standards.”
  - ii. The discharge is also considered egregious if the responsible party has a history of illicitly discharging into the City’s storm sewer system, or if the discharge is the result of a failure to adequately resolve (or alter practices from) a previous enforcement action associated with an illicit discharge.
- c. Stop Work/Activity Notices may be verbal/written notices that have a shorter compliance deadline.

### 3. Letters

- a. If the violator has been issued multiple verbal warnings for minor violations, or received a Stop Work/Activity Notice for a major violation, warning letter(s) will be issued for continued noncompliance, outlining appropriate actions per 17.87.300.
- b. A show cause hearing letter may be issued to a violator(s) requiring them to appear before the administration to show cause as to why a proposed enforcement action should not be taken.

### 4. Order

- a. Cease and desist orders will be issued for violator(s) to come into compliance within a timeframe determined by the City based upon the severity of the violation.
- b. Cease and Desist Orders will be issued for past violators(s) that are likely to recur.
- c. Consent Orders will be issued as assurance for compliance.

### 5. Administrative Fines; Costs of Remediation

- a. Any responsible party determined to be in violation of storm water ordinances may be fined in an amount not greater than \$10,000 per violation, per day.
  - i. Administrative fines may be assessed based on factors including; (1) damage, (2) endangerment to human health or the environment, (3) violation of City discharge permit, (4) good faith efforts to comply, (5) number 2 severity of violation fine assessed per flow chart\*
- b. Notice of violation(s) (“N.O.V”): An N.O.V will be issued if the violator(s) continues to violate the rules and regulations of the City Ordinance.
- c. Notice of Violation(s) will also be issued for illegal discharges that are deemed detrimental to the MS4.



## ACTIVITY: Escalating Enforcement - Illicit Discharge Detection and Elimination (IDDE)

Effective Date: 4/1/2019  
Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- d. Emergency Suspensions may be issued pursuant to 17.87.400.
- e. If the violation persists, termination of a City discharge permit shall occur.
- f. The director of Water Quality may charge a responsible party for the costs of preparing administrative enforcement actions, as well as the actual costs and expenses incurred by the city in responding to the illicit discharge.
- g. Penalties assessed under subsection A may be increased and/or trebled, in the director's discretion, where the responsible party has received another notice of violation at any time; for violations resulting in physical harm to persons or to private or public property; for knowing or deliberate violations; or for violations resulting from grossly negligent or reckless conduct.

### 6. Cost Recovery

- a. For every investigation that stems from a legitimate illicit discharge (as a proven and documented violation of city ordinance and/or State/Federal water quality standards), SLCDPU SWQ will bill (invoice) the violator for the cost associated with the time and resources employed for the purposes of investigating and abating the discharge.
- b. For every investigation that stems from an unfounded, unsubstantiated, or otherwise unproven (reportedly) illicit discharge, SLCDPU SWQ will not bill any party for the costs incurred during that investigation.

### 7. Documentation

- a. Document and maintain records of all enforcement action taken.
- b. Referral to the Salt Lake County Health Department for enforcement actions
- c. Referral to the State of Utah DEQ/DWQ for enforcement action.

Through Memorandum of Understanding (MOU) Salt Lake City reports all illegal discharges to the Salt Lake County Health Department. Based on case by case circumstances, Salt Lake County Health Department and Salt Lake City discuss the appropriate enforcement action(s) to be taken and who will be taking the lead on the investigation/enforcement.

\*Fines will be determined using the Utah Water Quality Act Civil Penalty Determination Flowchart (UAC R317-1.9)



## ACTIVITY: Escalating Enforcement – Industrial, Construction (Regulatory Inspections Programs)

Effective Date: 4/1/2019  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.4.2.1., 4.2.5.2.3., and 4.3.5.

**Purpose:** To provide guidance for escalating enforcement actions relating to storm water violations pertaining to Salt Lake City Code Chapter 17.81 and 17.84 and Salt Lake City's MS4 UPDES permit UTS000002.

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for a variety of enforcement actions specific to the City's MS4 regulatory program as deemed necessary for the severity of the violation and in following with the enforcement options available in Salt Lake City Code Chapter 17.87.

- The Industrial and Construction inspections programs have requirements for periodic inspections that must be conducted. If those inspections reveal violations of the respective permits/ordinances, then escalation of enforcement is needed.
- Those violations/deficiencies are documented and reported to the operator through an inspection report, sent by email, which serves as a "Verbal or Written Warning" depending on severity of infraction (see **Escalating Enforcement Procedure**, below, for the escalation steps to follow).
- When an illicit discharge is discovered during an inspection, it is treated as an IDDE investigation in addition to the regulatory inspection process and reports will be fully documented in both the regulatory inspections and IDDE investigation tracking systems.

### Escalating Enforcement (Actions):

#### 1. Verbal/Written Warning

- a. When a **minor** violation is discovered during an inspection, the City will inform the operator(s) of the infraction (via an inspection report that serves as the Written Warning) and require immediate corrective action, depending on the severity of the violation.
  - i. A **minor** violation is identified as one or more of the following:
    1. A low-volume, non-hazardous material discharge which did not reach a storm inlet.
    2. A discharge that did not affect the operation or integrity of the storm sewer system.
    3. A structural Best Management Practice (BMP) that is in need of maintenance.
    4. A non-structural BMP has been cited as part of regular SWPPP BMPs, but the practice was found to have not been recently employed/repeated.
- b. When a verbal/written warning is issued, the operator(s) will be given a timeframe to comply. This period may be immediate or up to 7 days depending on the severity of the violation(s) and any forecasted rain.
  - i. Immediate compliance and remediation will be required when rain is forecasted and there is a potential for direct discharge to the city's storm sewer system.
  - ii. When these minor violations have the potential to affect public health and safety, such as discharges that might create a pedestrian or vehicle slipping/blocking hazard on a public right-of-way, the discharged/stored material must be cleaned/remediated immediately.



## ACTIVITY: Escalating Enforcement – Industrial, Construction (Regulatory Inspections Programs)

Effective Date: 4/1/2019  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

- iii. If the operator is found to have been a repeated violator of the City's Codes and Ordinances protecting water quality, the operator will be required to correct the deficiency immediately, and enforcement escalation will proceed.
  - c. City will follow-up at close of corrective action timeframe to ensure compliance.
- 2. Stop Work Notices**
- a. If the operator does not comply within the given timeframe of the verbal/written warning, the City will issue a notice to stop all work contributing to the violations until compliance is achieved.
    - i. For Construction, a *Stop Work Notice* shall be issued, with either of the following conditions, based on the severity and preponderance of violations:
      - 1. The notice shall require the operator to stop only the activities which are causing the violation (such as preventing vehicle egress due to track out) and stop that work until corrective actions are completed and the site is brought into compliance.
      - 2. The notice shall require the operator to stop all work on-site until the corrective actions are completed, and site is brought into compliance.
    - ii. For Industrial, a *Cease Activity Notice* shall be issued, with either of the following conditions, based on the severity and preponderance of violations:
      - 1. The notice shall require the operator to cease the activity that is causing (or contributing to) the violations, until the corrective actions are completed, and the facility is brought into full compliance.
      - 2. The notice shall require the operator to shut down the business entirely until all corrective actions are completed, and the facility is brought into full compliance.
  - b. If the violation is deemed ***egregious/major***, the operator(s) will be issued a notice to stop work (construction) or cease activity (industrial), immediately, and escalation of enforcement will proceed.
    - i. An ***egregious/major*** discharge or violation is identified as:
      - 1. "A larger-volume, hazardous, or highly reactive discharge that entered the City storm sewer system and either caused (or had the potential to cause) biological/chemical/physical alteration of receiving waters, per state water quality standards."
      - 2. Failure to retain coverage under appropriate permits, or failure to maintain SWPPP compliance requirements for inspections/corrections/BMP-implementation, are considered major violations that will require an immediate notice to stop/cease work.
      - 3. A violation is also considered egregious if the responsible party has a history of stormwater violations (particularly those that have resulted in fines or illicit discharges).
      - 4. If a discharge occurs as the result of a failure to adequately resolve (or alter practices from) a previous enforcement action, then the violation is considered egregious.
  - c. *Stop Work* (and *Cease Activity*) *Notices* may be verbal notices but will always include a *written notice* and will have a shorter compliance deadline than those for minor violations.



## ACTIVITY: Escalating Enforcement – Industrial, Construction (Regulatory Inspections Programs)

Effective Date: 4/1/2019  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### 3. Letters

- a. If the operator has been issued multiple verbal/written warnings for minor violations, or received a *Stop Work Notice* (construction) or *Cease Activity Notice* (industrial), then **Warning Letter(s) will be issued for continued noncompliance**, outlining appropriate enforcement escalation actions per 17.87.300.
- b. A show cause hearing letter may be issued to the operator(s) requiring them to appear before the administration to show cause as to why a proposed enforcement action should not be taken.

### 4. Order

- a. Cease and desist orders will be issued for operators(s) to come into compliance within a timeframe determined by the City based upon the severity of the violation.
- b. Cease and Desist Orders will be issued for past operations that are likely to violate again.
- c. Consent Orders will be issued as assurance for compliance.

### 5. Administrative Fines; Costs of Remediation

- a. Any responsible party determined to be in violation of storm water ordinances may be fined in an amount not greater than \$10,000 per violation, per day.
  - i. Administrative fines may be assessed based on factors including; (1) damage, (2) endangerment to human health or the environment, (3) violation of City discharge permit, (4) good faith efforts to comply, (5) number 2 severity of violation fine assessed per flow chart\*
- b. *Notices of Violation* (“NOV”):
  - i. An NOV will be issued if the operator(s) continues to violate the rules and regulations of the City Ordinance and/or UPDES stormwater permits.
  - ii. Notice of Violation(s) will also be issued for illegal discharges that are deemed detrimental to the MS4.
- c. Emergency Suspensions may be issued pursuant to 17.87.400.
- d. If the violation persists, termination of a City discharge permit shall occur.
- e. The director of Water Quality may charge a responsible party for the costs of preparing administrative enforcement actions, as well as the actual costs and expenses incurred by the city in responding to the illicit discharge.
- f. Penalties assessed under subsection A may be increased and/or trebled, in the director’s discretion, where the responsible party has received another notice of violation at any time; for violations resulting in physical harm to persons or to private or public property; for knowing or deliberate violations; or for violations resulting from grossly negligent or reckless conduct.

### 6. Documentation

- a. Document and maintain records of all enforcement action taken.
- b. Maintain inspections tracking spreadsheet and online mapping, to include tracking of enforcement actions.
- c. Referral to the Salt Lake County Health Department for enforcement actions associated with illicit discharges.

Through Memorandum of Understanding (MOU) Salt Lake City reports all illegal discharges to the Salt Lake County Health Department. Based on case by case circumstances, Salt Lake County Health Department and Salt Lake City discuss the appropriate enforcement action(s) to be taken and who will be taking the lead on the investigation/enforcement.

\*Fines will be determined using the Utah Water Quality Act Civil Penalty Determination Flowchart (UAC R317-1.9)





## ACTIVITY: Water Quality – Illicit Discharge Detection & Elimination (Overview)

Effective Date: 9/17/2021

Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division

Reviewed by: M.Hendrix

### **Permit Requirement 4.2.3., 4.2.3.4., 4.2.3.5., 4.2.3.5.1., 4.2.3.6.**

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide instruction for the general process of detecting and eliminating illicit discharges into the MS4 and/or waters of the state within SLC boundaries. For more specific detailed instructions about a particular task, a focused SOP is referenced herein.

### **Related SOPs:**

1. Water Quality - Spill Response and Characterization of Illicit Discharge (IDDE)
2. Water Quality - Tracing the Source of Illicit Discharges (IDDE)
3. Water Quality - Ceasing and Removing Illicit Discharges (IDDE)
4. Water Quality - Escalating Enforcement (IDDE)

### **General Steps:**

#### **1. Identify potential illicit discharges**

- a. Use various indicators and modes of discovery including: reports from Regulators, the SWQ Hotline, Dispatch; self-reported visual observations of pollution; DWS investigations; etc.
- b. Take notes of every detail of the report/observation; be sure to inquire as to whether the discharge entered a storm drain or waterbody and if there is any threat to public health/safety.
  - i. If the discharged material is known to be toxic, or flammable, contact emergency services (Fire HAZMAT)
- c. If the discharge entered a storm drain or water body, report the discharge to SLCoHD via their environmental emergency 24-hour hotline (801-580-6681); the incident should be reported to DEQ DERR if the spill enters (or will enter) Waters of the State (801-536-4123)

#### **2. Assess immediate environmental effects (at the discharge point AND downstream)**

- a. Determine whether there is forecasted precipitation or other factors that would contribute to downstream migration of the discharge.
- b. If immediate deployment of BMPs is necessary/possible to contain the discharge plume and/or prevent downstream migration (to the MEP), coordinate those efforts with SLCoHD, SLCFD, SLCPD, SLCDPU, etc.
- c. If discharge is not currently migrating downstream (or is contained in a private collection system or other impoundment) and the discharge is not suspected of being a threat to health and safety, proceed with investigation.

#### **3. If source of discharge is already known**

- a. Coordinate the stopping of the discharge (by stopping work or turning off pumps/valves/processes/services that are actively discharging, as needed/able)
- b. Coordinate the containment of discharged pollutants (inlet protections, surface barriers/berms, in-pipe bladders/dams/wattles, etc.)

#### **4. If source of discharge is unknown**

- a. Conduct an investigation to isolate the discharge to a particular pipe/ditch/canal/stream-segment (popping manholes, with purpose)





## ACTIVITY: Water Quality – Illicit Discharge Detection & Elimination (Overview)

Effective Date: 9/17/2021

Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division

Reviewed by: M.Hendrix

- b. Once isolated, gain permission to access properties of possible sources
    - i. If Private Property, permission is needed from the property owner or site manager
    - ii. If Public Property, contact agency with jurisdictional control over the site/facility
  - c. If unable to gain access immediately, take into consideration the forecasted weather, severity of discharge and potential for human/environmental health effects when deciding whether to contact emergency services;
  - d. If not visually apparent, confirm discharge source by conducting analytical site investigation (monitoring for the suspected/identified indicators at the isolated discharge source)
  - e. Upon finding the source, coordinate the cessation of the discharge (turn off any active pumps/valves/services)
  - f. If possible, coordinate the containment of discharged pollutants (inlet protections, surface barriers/berms, in-pipe bladders/dams/wattles, etc.)
- 5. Identify necessary corrective actions**
- a. Determine steps to permanently stop the discharge (structural vs. non-structural)
  - b. If cleanup is possible, determine what remediation is needed to remove pollutants from watercourses and waterways (cleaning, disinfection, BMP deployment, etc.)
  - c. Relay these to the violator/responsible-party/point-of-contact
  - d. Inquire as to: (1) who will do the work, (2) what they will do, (3) how they will do it, (4) when they will do it?
- 6. Identify method for confirming corrective action**
- a. Will require proof the work was completed (by report, invoice, pictures, and any testing to prove the remediation was successful)
  - b. Ensure the violator knows what confirmation method is being required
- 7. Set a timeline for corrective action** (accounting for weather, severity, and services-needed)
- a. First focus on clean-up if the discharge has been stopped; consider the magnitude of the discharge (how far it went, how large it was, how difficult cleanup will be)
  - b. Then focus on what corrections will prevent recurrence (do they need a plumber to correct a cross-connect? Was the discharge due to a broken valve/asset that needs to be contracted to repair?)
    - i. Reasonable extensions would be acceptable for procuring outside services (EX: contracting a plumber or third-party contractor/consultant)
- 8. Educate/Enforce**
- a. Always educate (where able):
    - i. Provide a pamphlet to the violator and/or site representative addressing the specific (if possible) discharge (or at the least: the general stormwater pollution pamphlet if no specific/targeted message is available).
    - ii. Discuss the violations in the context of City ordinance and State regulations (Water Quality Act); this serves as education and can constitute a “verbal warning”
  - b. Issue enforcement actions for violations “Escalating Enforcement (IDDE)”; the general rule is: discharges from businesses (other than accidental discharges) and egregious discharges from residents require enforcement.



## ACTIVITY: Water Quality – Illicit Discharge Detection & Elimination (Overview)

Effective Date: 9/17/2021

Revision Date: 5/19/2022

Prepared by: Storm Water Quality Division

Reviewed by: M.Hendrix

- i. The enforcement action must increase proportional to the severity of the discharge, and inaction on correcting the discharge requires escalation of enforcement until all corrections are completed.

### 9. Pursue cost recovery (as applicable)

- a. For every investigation that stems from a legitimate illicit discharge (as a proven and documented violation of city ordinance and/or State/Federal water quality standards), SLCDPU SWQ will bill (invoice) the violator for the cost associated with the time and resources employed for the purposes of investigating and abating the discharge.
- b. For every investigation that stems from an unfounded, unsubstantiated, or otherwise unproven (reportedly) illicit discharge, SLCDPU SWQ will not bill any party for the costs incurred during that investigation.

### 10. Confirm corrective actions completed (using agreed upon method of confirmation)

### 11. Verify Discharge Has Been Abated (follow-up sampling/investigation/documentation)

### 12. Complete Report of Investigation (update tracking as-you-go)

- a. Complete investigation report AFTER all remediation, repair, confirmation, enforcement/education is complete, unless requested sooner.
- b. Update Cityworks (work orders), GIS Map (add documents), Tracker, I-Drive



## ACTIVITY: Water Quality – Industrial Site Inspections and Oversight

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.3.3. & 4.3.4.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for conducting SWPPP inspections and the oversight of permitted industrial facilities to ensure compliance with State and City permit requirements.

### Procedure:

#### 1. Preparation

- a. Obtain all equipment necessary for inspections including:
  - i. Personal protective equipment (PPE) i.e. Steel toe boots, safety vest, hard hat, safety glasses.
  - ii. Credentials i.e. employee identification badge.
  - iii. Camera or device to take pictures.
  - iv. Inspection form i.e. tablet, hard copy, etc.
  - v. Field test equipment.
- b. Schedule inspections with contractor/responsible party.
- c. Request SWPPP digitally prior to inspection (if available).
- d. Review file and SWPPP (if available).

#### 2. Process

- a. Ensure PPE is worn.
- b. Meet with responsible party and provide credentials.
- c. Review SWPPP for compliance.
- d. Review site map.
- e. Inspect job site with Contractor/responsible party.

#### 3. Post Inspection Review

- a. Review inspection form with responsible party.
- b. Discuss any corrective action items and timeframe for compliance.
- c. Provide copy of inspection to responsible party/parties.
- d. Distribute any applicable educational material.

#### 4. Documentation

- a. Record and send a copy of the inspection report to the responsible party.
- b. Update files, tracking spreadsheet, and GIS map.
- c. Document any follow up or enforcement action.
- d. Provide training on SOPs/SOIs.



## ACTIVITY: Water Quality – Long-Term Storm Water Management Inspections Program

Effective Date: 11/1/2017

Revision Date: 9/20/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirements 4.2.5

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for pre-construction, construction, and post construction inspections.

### Procedure:

#### 1. Pre-Construction SWPPP Review

- a. Review the Storm Water Pollution Prevention Plan (SWPPP) for all construction sites disturbing greater than or equal to one acre or that are less than one acre that are part of a larger common plan of development.
- b. Review approved drainage plans and calculations for adequate detention/retention storage.
- c. Identify all storm water quality and detention/retention devices for monitoring/inspection.
- d. Locate project's property boundaries. This may include inquiries with the Salt Lake County recorder's Office to get up-to-date information on parcel combination/splits.
- e. Import an electronic drawing or manually scale the building footprints & landscaped/pervious areas for the new site into the GIS.
- f. Calculate overall, total pervious, building and total impervious areas for the new site.
- g. Identify the facility ID (service number) for the new site. All billing and work order information is tied to this ID.
- h. Add all pertinent information for new site into Public Utilities Billing System (PUBS) and open a "Storm water New Construction Investigation."
- i. Keep all records for five years or until construction is completed.

#### 2. Construction

- a. Coordinate with contractor for initial site visit. Identify which storm water devices (if any are crucial for detention or retention and that these items must be inspected before buried – specifically, underground chamber systems and storage vaults.
- b. Visit the site at least once every two weeks to evaluate construction progress, storm water device installation, storm water quality, management and to troubleshoot problems.
- c. Set up inspection times for specific device installations (underground detention systems).
- d. Perform a final inspection when construction is complete. All storm water quality & detention/retention devices must be installed and working properly in order to receive a Certificate of Occupancy from Salt Lake City Public Utilities.
- e. Calculate the monthly storm water charges and discounts (if applicable) for the site. Enter all pertinent information into Public Utilities Billing System (PUBS). Close the "Storm Water new construction Investigation."
- f. Create a "Storm Water Utility Program post construction Inspection" work order. This work order will automatically create a recurring post-construction inspection work order once every five years.



## ACTIVITY: Water Quality – Long-Term Storm Water Management Inspections Program

Effective Date: 11/1/2017

Revision Date: 9/20/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### 3. Post Construction

- a. Visit site. Identify and inspect all storm water quality and detention/retention devices for proper maintenance and functions. These devices may include: oil/water separators, snouts, orifice plates, sumps, daylight pipes, detention/retention ponds, underground chamber systems and any other direct outlets to Salt Lake City storm drain system.
- b. Notify property owners of any storm water quality violations or maintenance issues (if any). Give property owners a finite amount of time (30 days maximum) to address problems. Also enter this information in the “Comments” section on the work order.
- c. Revisit site to ensure that all violations and/or maintenance issues have been properly addressed (if applicable). If not properly addressed, any storm water billing discounts will be suspended until the issue is resolved.
- d. Update Public Utilities Billing System (PUBS) and the storm water GIS with any changes in building, pervious or impervious areas (if applicable).
- e. Close the “Storm Water Utility Program Post-Construction Inspection” work order. This action will automatically generate another work order in five years.



## ACTIVITY: Water Quality – Outfall Inspections

Effective Date: 11/1/2017

Revision Date: 5/1/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.3.3.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to/from any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOP/SOIs) for the inspections of outfalls for Dry Weather Screening and subsequent IDDE investigations.

### Procedure:

#### 1. Preparation – *To be completed before going into the field.*

- a. Know the past and present weather conditions. Conduct inspections during dry weather periods (preferably >72 hours since last measurable rainfall more than 0.1”, but not required; the goal is to screen when there is no expectation of flows from runoff).
- b. Gather all necessary sampling equipment, including: tape measure, 5-gallon bucket, stop watch, flow meter with handheld, clipboard with outfall inspection form, ballpoint pen, flashlight, clear glass container, sampling pole, zip-ties/bendable-twist-ties, additional sample bottle (1/2 gallon unpreserved), pH and DO probes, and camera (phones/tablets are acceptable).
- c. Acquire appropriate personal protective equipment (PPE) according to department policy: gloves (nitrile/latex), safety goggles, safety vest, helmet, fall-protection system (harness and lanyard with anchor), personal flotation device, and hip/chest waders for difficult to access outfalls.
- d. Obtain maps showing outfall locations and identifiers (these are provided ahead of time, and can be found in the Maps subfolder of the DWS folder, specific to the current MS4 permit cycle)
- e. Obtain outfall descriptions and observations from previous inspections, such that the outfall can be accurately identified, and observations compared. (See the tracker from the previous permit cycle, as found in the respective I-Drive subfolder; OR review the previous inspection’s form)
- f. For safety purposes, Dry Weather Screening should be conducted in pairs (2 employees); find a screening partner from the SWQ work group and coordinate with them on the timing of the activities.

#### 2. Inspection Process – *Overview: Perform an inspection of each outfall at least once during the permit cycle (5.2.3); this entails: (a) confirmation of outfall location, name, condition, and attributes; (b) verification of whether dry weather flow is present (from the outfall); and (c) an assessment of the water quantity, quality, and potential for IDDE associated with any observed flows.*

- a. **OUTFALL IDENTIFICATION AND PHYSICAL ASSESSMENT (CONDITION):**
  - i. Identify/confirm each outfall’s location and unique identifier. For example, “CC-03” (City Creek #03).
  - ii. Use maps and previous inspection reports to confirm the outfall identity, location, and characteristics (dimensions, shape, material composition).
    1. If the known qualities (as shown on the City’s GIS) are incorrect, it is essential that the system map be corrected (once confirmed that the mistake is valid).
    2. If the observed outfall does not appear in the list of outfalls, it must be recorded for screening & follow-up to either include/exclude from the MS4 outfalls list.
    3. Necessary data to be collected regarding unknown outfalls:



## ACTIVITY: Water Quality – Outfall Inspections

Effective Date: 11/1/2017

Revision Date: 5/1/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- a. GPS location; outfall dimensions; material composition of the outfall; name of receiving water; rapid assessment of owner and/or drainage network/source (if obvious or able to be determined);
- b. Upon determining the owner of the outfall, reach out to the owner and inform them of the outfall location and report the discharge and any concerns associated with the inspection.
- iii. Evaluate the condition of the outfall (whether new or previously inventoried), looking for material corrosion, uncommon/suspicious deposition, severe erosion, discoloration/staining (of the structures, not the water), vegetative health of any adjacent plant-life, and visible indications of effects to aquatic organisms (fish kills, lack of visible macroinvertebrates, excessive algae, etc.)
- iv. For documentation purposes: Take a photo that shows the outfall, as well as the surroundings.
  1. Frame the picture so that it makes locating the outfall as simple as possible for the next person but provides visual confirmation of the condition of the outfall and shows the presence/absence of flow from the outfall.
  2. This can be complicated and difficult depending on accessibility, but effort should be made to do this; if a good photo cannot be obtained make note of this and request follow-up with assistance to gather this necessary evidence.

### *b. IDENTIFY DRY WEATHER FLOWS*

- i. If outfall is not submerged and no water is visible in the conveyance or flowing from the outfall, then the outfall is considered to have been screened and the inspection complete (as long as outfall conditions are not indicative of a temporary/intermittent discharge.
- ii. If the outfall IS submerged, it is necessary to determine if flow is coming from the outfall or if it is simply backwater conditions at the outfall.
  1. Attempt to look upstream (in-pipe) for access to the conveyance via manholes, or if open channel just follow it as far as possible from the water body to a point where flow can be observed.
  2. If flow is not observable but backwater conditions persist, the water must be evaluated for Quantity and Quality (as close as possible to the outfall, where flow is still perceptible)
- iii. If dry weather flow is present and observed discharging from the outfall (or found to be backwater throughout), then document and evaluate the discharge by completing the following steps (separated by *Quantity* and *Quality* procedures):

### *c. WATER QUANTITY ESTIMATION*

- i. Measure the flow rate (discharge) using 1 of 2 methods:
  1. Container-fill-stopwatch Method:
    - a. If flow is cascading (falling) into the stream (and it is possible to access the falling water), using the stop watch, measure the amount of time it takes to collect a known quantity of water in a vessel (e.g.: seconds to fill 5-gallons, if using the 5-gallon bucket; document volume of vessel)
    - b. If the surface of the receiving water and flowing outfall are equal, then the flow of the stream/receiving waters will affect the measurement of flow from the outfall; plus, it is not possible to attribute flows solely to the outfall so a secondary method is needed (see 2<sup>nd</sup> method, below)
  2. Flow-Meter Method:





## ACTIVITY: Water Quality – Outfall Inspections

Effective Date: 11/1/2017

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Prepared by: Storm Water Quality Division

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- a. If outfall is not accessible for the bucket-fill method, attempt to find the nearest upstream (in-pipe) manhole to measure flow using the flow meter.
    - i. NOTE: Flow meter (and pole) needs to be perpendicular to flow (pole should stand completely vertical) so it is not suited for measuring at the flowing outfall (unless it is an open channel)
      1. If an upslope (representative) manhole is not available, measure the discharge rate of the cascading water using the flow meter, but document the potential source of error (non-perpendicular sensor placement)
  - b. Submerge flow meter (sensor) into water column and take multiple (5) readings to determine an average, taking care to record the DEPTH of water along with the VELOCITY for each measurement.
    - i. If the full transect is accessible, as with a rectangular clean-out/box-grate or an open channel, then the method should include measuring velocity and depth (at ~65% of depth of water column) at a minimum of 5 measurements at equidistant points along the transect)
  - c. It is essential (as part of the outfall reconnaissance but also just to get accurate discharge measurements) to record/determine the dimension of the conveyance (pipe/box/ditch/etc.)
    - i. Reminder: Discharge is the volume (cubic feet) of flowing water per unit of time (e.g.: cubic feet per second, or “cfs”);
    - ii. Once average velocity is known (distance per unit of time, usually feet per second, ft/s) it can be multiplied by the cross-sectional area of the conveyance (square unit of distance, usually square feet, ft<sup>2</sup>) which produces the “cfs” unit of measure (cubic feet per second).
  3. Record the dimension, velocity, and selected discharge measuring method on the inspection form.
  4. Convert to discharge by multiplying velocity by area (as described above) and record this on the inspection form.
- d. *WATER QUALITY ASSESSMENT:*
- i. Only if dry weather flows are present: Collect field sample for physical/chemical observations in a clean, clear glass container and in a manner that avoids stirring up sediment that might distort the observation.
  - ii. Characterize and record observations on basic sensory and physio-chemical indicators (e.g. flow, odor, color, floatables/foams/sheens, pH, temperature, D.O.)
    1. Anything out of ordinary (subjective; relative to what is considered ordinary) requires further chemical evaluation.
    2. Stagnant water should not be sampled, if avoidable; meaning sample the flowing outfall, not necessarily the receiving water body unless it is submerged, and backwater conditions persist upstream (in-pipe).
  - iii. Using meters/probes, record the temperature, pH, and D.O. of the discharging outfall
    1. NOTE: Adverse ambient environmental conditions (effects to aquatic life or vegetation), color, odor, and floatables are generally obvious and tell-tale signs





## ACTIVITY: Water Quality – Outfall Inspections

Effective Date: 11/1/2017

Revision Date: 5/1/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

of an illicit discharge, particularly when combined with D.O., temperature, and pH field measurements.

2. Ranges of concern (screening criteria)
  - a. D.O.: <5mg/L
  - b. pH: <6 or >9.5 (standard units)
  - c. Temperature: Varies seasonally but can be compared to receiving waters or adjacent (nearby) outfalls/conveyances.
- iv. It is useful to compare observations to previous inspections to determine whether a significant change has occurred to the condition of the outfall and associated flows.
- v. If the flow does not appear to be an obvious illicit discharge (e.g. flow is clear, odorless, etc.), while still in the field, attempt to identify the source of the flow (groundwater, intermittent stream, etc.) and document this source-tracking as well as the findings.
- vi. If flow is present and there is a documented concern for the quality of the discharge (particularly if the immediate source is not evident), flag the inspection for follow-up research and/or screening.
- vii. If flow is not present from the outfall, record “No Flow” on the inspection form and move on to the next outfall to be screened.

### *e. FOLLOW-UP*

- i. If an illicit discharge (such as raw sewage, petroleum products, paint, etc.) is encountered or suspected, follow the procedure of SOP/SOI – Tracing Illicit Discharges.
- ii. When the discharge is isolated, follow the procedure of SOP/SOI – Ceasing and Removing Illicit Discharges.
- iii. Always clean up, as necessary, in accordance with local, state and federal standards.

### **3. Documentation**

- a. File completed outfall inspection forms on I-Drive and place the outfall photo here, as well.
- b. Update maps if new outfalls are observed and inspected, or if attributes on GIS are incorrect (contact GIS team for support).
- c. Provide training on SOPs/SOIs.



## ACTIVITY: Water Quality - Priority Areas for Illicit Discharge Detection and Elimination

Effective Date: 2/22/2019

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**Permit Requirement:** 4.2.3.3.1., 4.2.3.3.2., 4.2.3.3.3.

**Purpose:** To provide systematic procedures for locating, listing, updating, and inspecting priority areas likely to have illicit discharges, with the goal of detecting and eliminating illicit discharges.

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for identifying priority areas that are likely to have illicit discharges, and the subsequent inspection for, and elimination of those discharges that may affect water quality in receiving waters.

### Prioritization Procedure

#### 1. Preparation

- A. Utilize GIS database that provides infrastructure detail (sub-basins, land-use, stormwater assets, stream network, outfalls) and IDDE/illegal dumping history.
- B. Establish search criteria to determine high priority areas; MS4 permit dictates these to be: older infrastructure (including those with history of sewer overflows/cross-connections); industrial, commercial, and mixed-use areas; history of past illicit discharges; onsite sewage disposal systems; areas upstream of sensitive water bodies.
- C. Create table with possible priority areas (as rows) and search criteria (as columns) with numbers in each cell that correspond to a severity/potential for discharge (1-10, with 1 being the least severe or lowest potential); this provides visual representation of the high-risk elements of the priority areas, which will allow for a standard selection process.

#### 2. Process

- A. Determine areas that contain the following higher risk factors for possible illicit discharges: older infrastructure (including those with history of sewer overflows/cross-connections); industrial, commercial, and mixed-use areas; history of past illicit discharges; onsite sewage disposal systems; areas upstream of sensitive water bodies; and ambient water quality of concern/impairment (as identified from monitoring plan).
- B. Group these areas by similarity of risk factors and severity, and by geographic area such that they fall within one drainage sub-basin (this creates the areas of concern, which will be assessed for inclusion on the Priority Area list.)
- C. Weight the priority areas by staff knowledge and risk severity to determine which areas to monitor; provide justification for areas selected, and basis/reasoning for not selecting a possible high priority area.
- D. Within those areas, choose priority monitoring sites based on stormwater drainage network, ease of access, and density/homogeneity of risk factors.
- E. Create maps of each of the separate priority areas that can be used for source tracking.
- F. Annual update:
  1. Process should be repeated annually so that priority areas can be added, removed, or re-prioritized based off inspections, new information/businesses, land-use changes, reporting of spills/discharges.
  2. Update priority areas maps with new storm assets/infrastructure, or changes in land-use, zoning; add complaints and spill information.



## ACTIVITY: Water Quality - Priority Areas for Illicit Discharge Detection and Elimination

Effective Date: 2/22/2019

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

3. Staff should discuss the shifting priorities of the city when selecting high priority areas for each year.

### 3. Inspection

- A. Gather all materials and protective equipment needed for inspection
  1. Personal protective equipment (PPE)
  2. Credentials
  3. Inspection documentation/forms
  4. Field test equipment
- B. Outfalls/manholes from priority areas should be monitored during Dry Weather (no rain in previous 72-hours) for physio-bio-chemical parameters for flowing outfalls.
  1. If the outfall is not flowing, the inspection should still include a survey of vegetation and infrastructure to identify possible long-term effects of intermittent discharges.
  2. If the outfall is flowing: use outfall inspection (Dry Weather Screening) form to capture necessary data and characterize the discharge (this can be done on ComplianceGo):
    - a) Estimate discharge rate (cubic feet per second) using a bucket of known volume and stopwatch, or estimate cross-sectional area and then measure velocity by recording how long it takes a floatable object to pass a pre-determined length (velocity = length/time).
    - b) Physical indicators: color, odor, floatables
    - c) Biological indicators: vegetation, insects, fish
    - d) Chemical indicators: pH, turbidity, conductivity, dissolved oxygen, temperature, salinity, total dissolved solids, etc.
    - e) Analytical indicators: metals, bacteria (e-coli), ammonia-nitrogen, phenols, total-phosphorus, chlorine, total suspended solids, BOD, hydrocarbons, etc.
      - (1) Use proper chain-of-custody and QA/QC protocols (to include sample preservation and holding time requirements).
      - (2) Document results and findings.
  3. If possible IDDE is identified, proceed with investigation of network to **isolate** the location of the discharge (source tracking).
    - a) Identify drainage network (either by GIS map, or staff knowledge) and select manholes to be checked.
    - b) Systematically check those upstream manholes for flow; any nodes that are found to not be flowing will be marked off until a segment is identified as the likely location.
    - c) If the discharge source is not apparent, camera the lines until the source location is identified.
  4. Once isolated, proceed with steps to **eliminate** the discharge:
    - a) Notify the property owner and site supervisor of the discharge.
    - b) Ensure right of access is achieved; if the property owner is not cooperative, proceed with an affidavit of probable cause.
    - c) Identify corrective actions that will effectively stop the discharge.
    - d) Identify corrective actions that will remediate the discharge (if possible).
    - e) Provide verbal and written notices of violation that enumerate the violations and corrective actions, as well as the timeline for elimination and remediation.
    - f) Provide educational materials to appropriate parties to ensure no recurrence of the discharge.



## ACTIVITY: Water Quality - Priority Areas for Illicit Discharge Detection and Elimination

Effective Date: 2/22/2019

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- g) Conduct follow-up inspections to verify abatement of discharge within prescribed deadlines for corrective actions.
- C. Inspections should be conducted annually.
  - 1. It may be necessary to increase the frequency of these inspections when priority areas are found to contain illicit discharges or questionable flows, particularly when following up after an IDDE investigation.
  - 2. Additional inspections can be complaint-driven or initiated by new businesses (or change of management or SIC-code) within the priority drainage areas.
- 4. **Documentation**
  - A. Maintain list/maps of priority areas for monitoring and annual review.
  - B. Maintain database of inspections.
  - C. Maintain database of investigations.
  - D. Track education and enforcement actions.



**ACTIVITY:** Water Quality - Priority Facilities – Assessment, Prioritization, and Inspection Program

Effective Date: 2/22/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**Permit Requirement:** 4.2.6.1., 4.2.6.2., 4.2.6.3., 4.2.6.4., 4.2.6.5., & 4.2.6.6.

**Purpose:** To provide systematic procedures for the assessment and prioritization of city-owned facilities for the potential for discharging pollutants and inspections of those facilities.

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for identifying high priority facilities that have an increased risk for discharging pollutants, and will identify the basis for choosing these facilities, the annual review of that priority facilities list, and the MS4 Permit required inspections there-of.

**Procedure:**

**1. Preparation**

- A. Update and utilize written inventory of city facilities (Appendix E in SWMP and 2021 Combined Facilities List).
  - 1. New facilities should be added to the list.
  - 2. If a facility changes location, operation, or pollutant generating potential, the list should be updated.
- B. Determine search criteria to determine high priority facilities; MS4 permit dictates these to be: pollutants stored onsite; improperly stored materials; potential pollutant-generating activities performed outside (e.g. changing automotive fluids); close proximity to fresh water and water bodies, including but not limited to streams, canals, rivers, ponds and lakes; potential to discharge pollutant(s) of concern to impaired water(s).

**2. Process**

- A. All Salt Lake City owned and/or operated facilities (see SWMP appendix E for written inventory per 4.2.6.1 of permit) are considered during the evaluation process based on potential pollutants.
  - 1. Of those evaluated, several facilities were chosen to be inspected for further review to determine their risk level in accordance with the criteria in 4.2.6.2 of the MS4 permit.
  - 2. The facilities were inspected to evaluate the sites for the potential for pollution, including the following factors: amount of urban pollutants stored onsite, identification of improperly stored materials, activities that shall be performed outside (e.g. changing automotive fluids), and poor housekeeping practices.
  - 3. These inspected facilities were then categorized into “Priority” and “Other facilities” (per 4.2.6.3 of 2015 permit).
- B. The facilities deemed as “Priority” municipal facilities (Parks, Fleet, and Utilities) all formerly had UPDES Industrial permits (MSGP) under Sector P and have activities and storage that make them more likely to have a discharge - therefore requiring more oversight than the “Other facilities.” SWPPPs for those facilities were revised to meet 4.2.6.4. of the MS4 Permit and will need to be reviewed as part of the annual assessment of the priority facilities list.
- C. During our inspections and evaluation process the “Other facilities” were determined to be less of a risk for polluting the MS4; but, because some job duties were still relevant in protecting the MS4, they are required to conduct annual training and implement associated Standard Operating Procedures (SOPs).



## ACTIVITY: Water Quality - Priority Facilities – Assessment, Prioritization, and Inspection Program

Effective Date: 2/22/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### D. Annual review/update:

1. Process should be repeated annually so that priority facilities can be added, removed, or re-prioritized based off inspections, new information/businesses, land-use changes, reporting of spills/discharges
2. Update maps with new storm assets/infrastructure, or changes in land-use, zoning; add complaints and spill information
3. Staff should discuss the shifting priorities of the city when selecting high priority areas for each year.

### 3. Inspection

- A. Priority facilities should be inspected in accordance with the following frequencies and procedures; always prepare by obtaining equipment (PPE, credentials, camera, inspection form, field test equipment), scheduling with responsible party, requesting the SWPPP digitally prior to inspection (if available), and a pre-inspection review of all documentation:
1. Monthly visual inspections
    - a) Perform monthly visual inspections of "high priority" facilities, water quality controls measures, BMPs, and related storm water outfalls to verify performance of the BMPs and all other systems designed and placed to eliminate pollutant discharges.
    - b) Look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff.
    - c) The monthly inspections shall be tracked in a log for every facility and records kept.
    - d) The inspection log should also include any identified deficiencies and the corrective actions taken to fix the deficiencies.
    - e) Ensure training is ongoing for each facility.
  2. Semi-annual comprehensive inspections
    - a) Twice per year, conduct comprehensive inspections of "priority" facilities, including all storm water controls, shall be performed, with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar pollutant generating areas.
    - b) Ensure all BMPs have been properly installed and are regularly maintained.
    - c) An inspection report shall be created with includes any identified deficiencies and the corrective actions taken to remedy the deficiencies.
    - d) The semi-annual inspection results shall be documented on the O&M Priority Facilities inspections tracker and records kept on the i-drive subfolder for each respective facility, as well as the facility's SWPPP.
    - e) Review inspection form/findings with responsible party and discuss any necessary corrective actions (including timelines for correction).
    - f) Provide inspection report to responsible parties.
    - g) Distribute any applicable educational material.
    - h) If a corrective action is not completed within the timeframe provided in the inspection report, an "O&M\_CorrectiveActions\_FORM" will be filled out and signed by the responsible party and their supervisor. The form includes an "Expected Close Date" that will serve as the deadline for the corrective action. Failure to complete corrective actions by the Expected Close Date will result in a meeting between the responsible party's supervisor and the Storm Water Quality manager to determine the next step in escalating enforcement and ensuring completion of the corrective action.



**ACTIVITY: Water Quality - Priority Facilities – Assessment, Prioritization, and Inspection Program**

Effective Date: 2/22/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**3. Annual visual observation of stormwater discharges**

- a) During wet weather, visually observe the quality of the storm water discharges from "priority" facilities (unless climate conditions preclude doing so, in which case provide documentation as to why the monitoring was not possible).
- b) Visual observations shall be documented with photos and a datasheet (which serves as an inspection report), and records kept on i-drive.
- c) Any observed problems (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources or controls shall be remedied to prevent discharge to the storm drain system.
- d) Discuss any corrective action items and timeframes for compliance with the facility's responsible party.
- e) Distribute any educational material, as applicable/needed.
- f) The documentation (datasheet/report) shall also include any identified deficiencies and the corrective actions taken to remedy the deficiencies.

**4. Documentation**

- A. Maintain records of inspections (monthly, semi-annual comprehensive, and annual visual) on the tracking spreadsheet, saving reports and supporting documentation on the i-drive subfolder for each facility.
- B. Maintain records of corrective actions and enforcement.
- C. Maintain records of training.



## ACTIVITY: Water Quality – Special Events

Effective Date: 11/1/2017  
Revision Date: 12/13/2021

Prepared by: Storm Water Quality Division  
Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.6.7.1.

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for maintaining storm water quality during and after special events such as outdoor festivals, parades and street fairs.

#### Procedure:

##### 1. Preparation

- a. Attend monthly Event Review Committee (ERC) meetings for information on upcoming events.
- b. Review all events for the potential to discharge pollutants to the MS4 or waters of the state.
- c. Evaluate past events for cooperation and compliance from the event planners.

##### 2. Process

- a. Require that all events implement best management practices (BMPs) and or develop pollution prevention plans (P2) when necessary to minimize pollutant discharge to the maximum extent practicable.
- b. Coordinate with other City departments for housekeeping items, health and safety, and post event clean up requirements.
- c. Provide guidance, BMP material or make recommendations to ensure precautions are taken to protect the MS4 and waters of the State.

##### 3. Clean-Up

- a. Conduct post event site reconnaissance to ensure clean-up was adequately performed.

##### 4. Documentation

- a. Document any issues.
- b. Proceed with any enforcement actions as necessary.
- c. Document all BMP material distributed.





## ACTIVITY: Water Quality – Spill Response and Characterization of Illicit Discharge

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.5

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for the response, investigation and elimination process of spills/illicit discharges.

#### Responsibility:

##### 1. Dispatch

- a. Dispatcher who receives notification of spill or illicit discharge becomes responsible for delegating that request. The *Spill Incident Contact List* shall be referenced whenever there is a report of an actual or potential water quality risk to the MS4.

##### 2. Storm Water Quality Program Manager

- a. Responsible for the oversight and coordination of Storm Water Quality personnel response and follow up; as well as, any required reporting and notifications to State, County Health, and any other stakeholders.

##### 3. Storm Water Quality Coordinator/Responding Personnel

- a. Shall respond to notifications, tips, and/or, reports of illicit discharges/spills, and coordinate efforts for containment and ensure clean up or remediation is done to the maximum extent practicable. The person responding is responsible for documentation when applicable e.g. work orders, reports follow and enforcement letters.

##### 4. Salt Lake County Health Department

- a. Through the Memorandum of Understanding may respond, report, and enforce on illicit discharges/spills in coordination with and/or on behalf of SLCDPU.

#### Procedure:

##### 1. Notification

- a. When a report or notification comes in regarding storm water quality, the dispatch or notified party shall take the following steps:
  - i. In the event of an emergency call 911.
  - ii. Gather information from the caller/reporter including:
    1. Location of incident
    2. Pollutant associated with discharge and quantity
    3. Responsible party if identifiable
    4. Name and number of caller/reporters
  - iii. Refer to Spill Incident Response Contact List and make calls down the list until an available person can respond or address the report.



## ACTIVITY: Water Quality – Spill Response and Characterization of Illicit Discharge

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### 2. Response

- a. Once an IDDE report has been assigned, the delegated department/personnel shall:
  - i. Assess and characterize the nature of, and any potential public and environmental risks associated with discharge.
  - ii. Notify appropriate authorities i.e. State of Utah, Salt Lake County Health Dept.
  - iii. Contain spill or discharge to the maximum extent practicable.
  - iv. Investigate incident and identify responsible party if possible. Follow SOP/SOI: IDDE – Removing Illicit Discharges.
  - v. Coordinate and oversee clean up and any needed remediation or follow up. Follow SOP/SOI IDDE – Removing Illicit Discharges.

### 3. Documentation

- a. The responding personnel shall prepare, maintain and follow up with all appropriate documentation in accordance with applicable city policy.
- b. File all completed forms.
- c. Document any further action or enforcement taken.



## ACTIVITY: Water Quality – Tracing the Source of Illicit Discharges

Effective Date: 11/1/2017

Revision Date: 8/21/2019

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

### Permit Requirement 4.2.3.4

**Purpose:** To provide best management practices (BMPs) developed to minimize pollutant discharges to any municipal separate storm sewer system (MS4) during the completion of the task to the maximum extent practicable (MEP).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for tracing the source of illicit discharges.

#### Procedure:

##### 1. Preparation

- a. Review/consider information collected when illicit discharge was initially identified.
- b. Obtain storm drain mapping for the area of the reported illicit discharge.
- c. Gather all necessary equipment including: tap measure, clear container, clipboard with necessary forms, flashlight, and camera (optional).
- d. Acquire appropriate personal protective equipment (PPE) according to department policy.

##### 2. Process

- a. Ensure PPE is worn.
- b. Survey the general area/surrounding properties to identify potential sources of the illicit discharge.
- c. Trace illicit discharges using visual inspections of upstream points. Use available mapping to identify tributary pipes, catch basins, etc.
- d. If the source of the illicit discharge cannot be determined by a survey of the area or observation of the storm drain system, then consider the following additional steps:
  - i. Use weirs, sandbags, dams, or optical brightener monitoring traps to collect or pool intermittent discharges during dry weather.
  - ii. Smoke test or televise the storm drain system to trace high priority, difficult to detect illicit discharges.
  - iii. Dye test individual discharge points within suspected buildings.
  - iv. Consider collecting bacterial samples of flowing discharges to confirm/refute illicit discharge.
- e. If the source is located, follow SOP/SOI IDDE – Ceasing & Removing Illicit Discharges.
- f. If the source cannot be found, add the location to a future inspection program.

##### 3. Clean-Up

- a. Clean catch basin, storm drain, or initiate spill response as applicable. Follow relevant SOPs/SOIs.

##### 4. Documentation

- a. Document tracing results for future reference.
- b. Provide training on SOPs/SOIs.
- c. Document all spills in accordance with all local, state and federal standards.

**ACTIVITY: Wet Weather Monitoring**

Effective Date: 4/16/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

**Permit Requirement: 5.2.1**

**Purpose:** To characterize storm-driven pollutant loads at various land-uses, satisfying wet weather monitoring requirements of the MS4 permit (UPDES).

**Scope:** This document will provide standard operating procedures/instructions (SOPs/SOIs) for rain event sampling using water quality (and quantity) monitoring equipment.

**WET WEATHER MONITORING PROGRAM (OVERVIEW)**

Sampling is conducted at least twice per year, during the Spring and Fall. Parameters for sampling are determined by the UPDES permit. Sampling includes grab samples at the beginning of a representative storm, and a flow-weighted composite sample collected throughout the duration of the storm.

In accordance with the UPDES permits, storms that are *representative* of typical storms in this area are selected for monitoring. Three sampling stations representing various land uses have been established to conduct this monitoring:

JOR – 8      Mixed Land Use located at 900 S and Gale Street.

MIL – 03      Residential Land Use located at 1040 E 2650 S

LED – 02      Light Industrial Land Use located at 5600 W. on the Lee Drain (California Avenue)

The Event Mean Concentration is used to provide a measure of water quality taking into account pollutant load, precipitation, land use, and drainage area.

The following constituents (analytes) are required by permit (with holding times and preservation):

Constituent/Analyte	Holding Time	Preservation
Biochemical Oxygen Demand (BOD5)	48 hours	4°C
Total Suspended Solids (TSS)	7 days	4°C
Total Dissolved Solids (TDS)	7 days	4°C
Total Nitrogen (TN)	28 days	4°C; H2SO4
Ammonia-Nitrogen	28 days	4°C; H2SO4
Dissolved Nitrogen (DN)	48 hours	4°C
Total Kjeldahl Nitrogen (TKN)	28 days	4°C; H2SO4
Total Phosphorus (TP)	28 days	4°C; H2SO4
Dissolved Phosphorus (DP)	48 hours	4°C
Cadmium (Cd)	6 months	HNO3
Copper (Cu)	6 months	HNO3
Lead (Pb)	6 months	HNO3
Zinc (Zn)	6 months	HNO3
Selenium (Se)	6 months	HNO3
Mercury (Hg)	28 days	HNO3
total Hardness (TH)	6 months	HNO3
pH* (pH)	Immediately (in-field)	none



## ACTIVITY: Wet Weather Monitoring

Effective Date: 4/16/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

Oil and Grease* (O&G)	28 days	4°C; HCl
Cyanide* (Cyn)	14 days	4°C; NaOH
Discharge/flow (Q)	Instantaneous (available online)	N/A

\*identifies constituents measured in the Grab Sample.

**STORM EVENT REQUIREMENTS (QUALIFYING STORM)**

With regards to representative sampling, the UPDES Permit states, Part III B “Minimum monitoring expected to be accomplished each year shall be a planned monitoring frequency twice a year (spring and fall, subject to weather conditions)”. All samples shall be collected from a storm event that is ***greater than 0.2 inches of precipitation within a three-hour period*** that occurs at least 72 hours from the previously measurable rainfall greater than 0.1 inch. The grab sample of the first flush should be taken within 30-minutes of discharge but can be up to an hour if documenting reason for the delayed grab sample. The flow-weighted composite should include the full storm duration (or as much of it as possible) with a minimum of 3-hours of event. **If an event is sampled but does not end up meeting the qualifying storm criteria, go forward with sampling/compositing/analysis (in case another storm does not pan out, we need data for annual reporting) and plan to catch the next qualifying storm.**

**EQUIPMENT CLEANING, MAINTENANCE, AND INVENTORY CHECKS**

This should be done at the end of each deployment (sampling attempt); particularly if it is the last event of the season, but is good to do at the beginning of the season, too:

- Check desiccant (replacing as needed)
- Wipe every surface clean with Clorox wipes (but taking special care with any sensors, such as on the Flodar)
- Verify all screws/bolts/springs/wingnuts/wires/cables/connectors are all present and in good condition
- Clean out the siphon tubes with DI water (DI water can be taken from the wastewater laboratory at the Water Reclamation Facility) and determine if the hose is in need of replacement as noted by cracks, cuts, tears, severe discoloration or hardness accumulations
- Ensure laptop is fully charged
  - The laptop bag should have:
    - the USB cord for connecting to datalogger
    - the laptop’s power supply/charging cord
    - the inverter for use in the field (trucks) if the battery dies
- Ensure each sampler tote has all the necessary pieces:
  - Flodar
    - Unit
    - Connecting cable
  - Rain gauge
    - Unit
    - Debris screen
    - Funnel
    - 3 sets of springs/wingnuts/washers
    - Round Metal Plate
    - Duct tape is used to adhere debris screen to the top of the rain gauge



## ACTIVITY: Wet Weather Monitoring

Effective Date: 4/16/2019

Revision Date: 12/9/2021

Prepared by: Storm Water Quality Division

Reviewed by: Matthew Hendrix

- Autologger (FL900)
  - Unit
  - Connecting cable
- Autosampler (AS950) (not kept in tote, but should be stored with its respective tote)
  - Unit (3 parts: lid, control, base)
  - Siphon tube with debris screen
- Ensure all batteries are charged
  - 12-volt sampler batteries are currently being charged at station outside of Greg's office
    - If the battery is not holding a charge it must be replaced
    - We want to have 6 good 12-volt batteries on hand at all times (3 for deployment, 3 for backup)
  - 6-volt datalogger batteries are generally underneath the charging station,
    - 12 of these are needed (4 per datalogger) per sampling event
      - Can use less than 4 (2 or 3) 6-volt batteries if short on batteries, but is best to use all 4
    - These can be reused until power goes below 4-volts each (need to determine if this can be lower, but until we are sure: do not chance it!)
  - Use the volt-meter to verify charge status before using any battery in the field.
    - If 12-volt battery is <12, DO NOT USE!
- Ensure all auto-sampling bottles (3 sets of 24) are cleaned and free from accumulations of sediment/hardness
  - The 24-bottles for autosamplers can be cleaned in the dishwasher but must be thoroughly scrubbed of any solids/residues using a scrubbing-wand before placed in dishwasher
    - All bottles should be placed so the opening faces down and it will not flip
  - Use a very small amount of granular detergent (a little bit goes a LONG way) for each load

## MONITORING EQUIPMENT DEPLOYMENT

**Two (2) days prior to forecasted storm event, the following equipment is to be deployed (3 sites, so 3 sets of each):**

- Automatic sampler (AS950) with intake hose and debris screen
- Datalogger (FL900) with cable to connect to AS950
- Telemetry Antenna with cable to connect to FL900
- Rain Gauge with debris screen, funnel, 3-springs, 3-wingnuts, 3-washers, and cable to connect to FL900
- Velocity meter (Flodar) with cable to connect to FL900
- Batteries (one-12v for each sampler, and four-6v for each datalogger)

### Equipment Required for Deployment Procedure:

- Full set of keys for facilities/equipment at all 3 sites (key inventory is available I:\Storm water)
- Stormwater Laptop (password: Stormwater) w/charging cable (and USB cable to connect to FL900/AS950)
- Inverter for powering/charging laptop if battery dies during deployment/sampling
- Ladder



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- Manhole opening devices (poles & hooks)
- Waders
- Measuring Tape
- 5 Gal. Bucket
- 500 mL Graduated cylinder
- Sandbag
- Zip Ties
- Phillips Screwdriver
- Rope/chain to access Forest Dale culvert
- Wasp Spray
- Cellular Hotspot capability
  
- Compound Sampling Gauge/Pole (Sediment Measuring Device)
- Coordinator's Sampling Truck (with winch)

### Procedure for Deployment:

- Ensure all equipment and materials are collected before going into the field
- For access to the Go Industrial **construction site fence gate at Lee Drain, all gate codes are #2459.**
- **Install/Set-up rain gauge (and telemetry antenna)**
  - Using the ladder to access the gauge stand, place the rain gauge on top (the holes in the gauge line up with the mounting screws)
    - When placing the gauge, be sure to add springs, metal plate, washer, wingnuts to attach gauge to stand
      - NOTE: Springs go between the permanent stand and the round metal detachable plate, followed by the housing unit, with washer and then wingnuts on the top of the rain gauge housing unit
  - Use wingnuts to level the gauge (see level dot inside rain gauge)
    - You will need to pop the debris screen and funnel off to expose the bubble-level
    - The ladder is needed for this because you have to be standing with your face above the open gauge housing unit to see the bubble-level
  - Place antenna up high on the rain gauge permanent stand's pole, but below the gauge itself; make sure the antenna's flat part is facing the pole and the outside (convex bevel) is facing towards (line-of-sight) the nearest cell tower:
    - **900 South:** Northwest - 700 S & 600 W
    - **Lee Drain:** Southeast - 2100 S & 4000 W
    - **Forest Dale:** West/Northwest - 600 W & I 80
  - Closely/tightly run the cords from the gauge/antenna down the pole,
    - And then using zip-ties, stabilize the antenna, and the gauge/antenna cords using at least 2 zip-ties for stability (place one zip-tie just below the antenna and another further down the pole)
  - FINAL STEP ONCE FL900 (LOGGER) IS IN PLACE:
    - Connect antenna and rain gauge cables to the datalogger (use symbols on FL900)
    - Take care to ensure the cables are not being cut/cramped by the field box lid; if needed, fold over some duct tape to create a block to provide the necessary space
- **Install/Set-up "Flodar":**
  - For access to the mounting unit at each site:





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- **900 South:** Use key to open the lock and remove the arm that is pinning down the inlet grate; open the storm drain (lift the grate) and slide to the side
  - **Lee Drain:** Use key to open mounting unit's secure box
  - **Forest Dale:** Use key to opening mounting unit's secure box; use tow hitch/wench on truck to lift the gate (using a metal chain hooked to the truck and the culvert's grate); put in park and set brake (safety)
- Holding one end of the cable (or otherwise securing it), feed the Flodar cable through the field box port into the pipe (at 900 South and Forest Dale) very slowly to ensure it does not end up in the water (if present); once in hand, feed more cable through so that there is enough slack to connect to the Flodar (see next);
- Connect cable to the Flodar (remember to first unscrew the little plate that will pin the cable securely in place when properly connected to the Flodar unit; reinstall the plate once cable is securely attached)
- Lower the Flodar into place (VERY CAREFULLY) so that the cable points downstream and the sensors face upstream (using a hooked inlet/manhole opener through the round handle on top of the unit, to lower it down)
- Once in place, twist the connection on top of Flodar (can be done with the same hook used for lowering it) to engage locking-arms and secure it in place
- Verify that the bubble-level (dot) is in the center and that the Flodar housing unit hasn't shifted.
  - If it has shifted, we will need to reinstall the mounting unit or reach out to Hach tech support to determine possible solutions (**1-800-227-4224; ext #6063**)
- FINAL STEP ONCE FL900 (LOGGER) IS IN PLACE:
  - Attach the Flodar cable to the datalogger (FL900) inside the field box
  - Confirm settings/programming is correct (see installation of datalogger, below)
- **Install/Set-up Autosampler (AS950):**
  - Place entire sampler (Base, Unit, and Lid) inside the field box
  - Remove lid and attach 12v battery to the unit (clip in the rubber stabilizers)
  - Connect siphon tube to sampler unit (900 South and Forest Dale)
    - Be sure to use the black plastic guide-structure to prevent hose from shifting
    - Lee Drain requires threading the hose through the black PVC pipe and field box before connecting to the autosampler (see note, below)
  - Lower the siphon tube through the appropriate hole in the field sampling box
    - Lee Drain:
      - There is a hole at the corner of the field box which the unscreened end of hose goes through that must also be fed through the black (PVC) pipe; due to the dimensions of the pipe, this should be done in reverse order: feed the unscreened end of siphon tube through the black (PVC) pipe, then feed the unscreened end through the field box cut-out, then connect the siphon tube to the unit, using the black plastic guide-structure
    - 900 South and Forest Dale:
      - There is a hole in the floor of the field box through which you will lower the siphon tube (the end with the debris screen) into the pipe/culvert until it is in the water or on the ground (if dry); the siphon tube is then connected to the sampler unit
        - Take caution not to drop this siphon tube and/or debris screen
  - Check the programming for the AS950



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- Press Menu
- Select Programming (highlight and press “select”)
- Select “sample programming”
  - Total Bottles: 24
  - Bottle Volume: 575 ml
  - Tubing: 10 ft. of 3/8” tubing (Lee Drain) or record tubing length as appropriate; 10 ft at Forest Dale, and 12 ft at 900 South
  - Pacing: 30 Minutes (Lee; 12hrs) 10 minutes (900 S & Forest Dale; 4hrs)
  - Sample Volume: Fixed 500 ml
  - Distribution: 1 BPS (Bottle per sample), 1SPB (Sample per Bottle)
  - Program Start: On Trigger (Generally double check the trigger type is set to external)
    - Select “program start”
    - Select “on trigger”
    - Trigger type: External Aux (this will be the FL900 set up via computer)
    - Delay: none
    - Control: start only
  - Program End: 24 Samples
  - To start sampling press “Run/Halt” button and select “start program”
    - This will only start sampling once it is triggered
    - But can be done at the very end of the deployment procedure as a final verification that the program is running
- Calibrate sampler volume using graduated cylinder:
  - Manual function → Calibrate → pull 500 mL
    - Balance the sampler Unit (with the base/lid detached) on the edge of the field box (if able) and place the graduated cylinder under the sampler arm hose to collect the water that is pumped
  - Read the graduated cylinder volume that was collected and enter that value on the autosampler as the “Actual volume”, this will calibrate the unit for that location
  - NOTE: If water is not present in the field, place siphon tube in bucket of water but attempt to mimic the site conditions (particularly the length of tube and the height of the sampler over the expected water level (called the “head”))
- Test distribution arm operations
  - Manual Operations → Test distributor arm (be sure to verify which position/bottle it started and ended with, to confirm test)
- Check color of desiccant beads (sampler, pump, data logger, cables); replace, as needed
- The day before forecasted rain event, ensure that 24 (clean) bottles (clearly labeled 1 through 24 on lids, and placed in the proper alignment according to sampler base markings showing which bottle numbers go where)
  - Lids should be removed and placed in a ziplock bag when bottles are deployed (this will be verified during grab sampling)
- **Install/deploy Auto-logger (FL900)**
  - Ensure new/sufficiently-powered batteries (Four 6-volt batteries) are placed inside the logger (unscrew the bottom round panel while it is upside down and put the batteries in with the



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springs touching the metal pads of the logger itself; this will appear that they are ALSO upside down); screw the bottom round panel back on to the logger

- Connect the FL900 Datalogger to the Aux 1 port of the autosampler
- Connect the rain gauge cable to the datalogger (where noted by the rain gauge symbol)
- Connect the antenna to the datalogger (where noted by the antenna symbol)
- Using laptop (FSData Desktop) via the USB cable connect the laptop to the datalogger (see the port with the laptop symbol)
  - Once cables are connected, go to FSData Desktop and click “Connect” (upper right-hand corner);
  - Select the FL900 (USB is usually port: COM-3) and click OK
  - Allow the site name and info to auto-populate
  - Click on Flo-Dar (port 1, usually) and make sure setting is for 5-minute calling interval
    - NOTE: If equipment was deployed a few days before forecasted rain, this calling interval can be increased so less battery is used up before the event; however, it must be set back to 5-minutes (before rain event begins)
  - Check the alarms by clicking on “Sensors” tab, then “Alarms”
    - Power and rain are useful alarms, but the only TRIGGER alarm is “level” for each site
    - We’ve used “Level” as the parameter to start the samplers, but “Rain” can also be set; use approximately 0.10” if rain is required as a trigger. (However, we will almost always focus on level as trigger)
    - Verify and edit the recipients (phone number and email) of alarms by clicking the “Recipients” tab under “Alarms”.
  - There is generally a base flow in Lee Drain and 900 S. The trigger level will have to be set accordingly to what the base flow is. Forest Dale should have no flow so the trigger will likely remain the same.
  - To check/change these alarms, while laptop is connected to FL900, open up software program FSData on laptop
    - Go to alarms tab
    - Choose Channel alarms
      - Set channel: Pwr Supply & for Alarm type (for all sites): Low
        - Setpoint: 9.70 (fully charged battery should be about 13.0 V)
        - Deadband: 1.00
      - Set Channel: Lvl and Alarm type: High
        - Setpoint:
          - **900 South:** 5-8 inches above base flow (if present)
          - **Lee Drain:** 5-8 inches above base flow (if present)
          - **Forest Dale:** 2 inches above base flow (if present)
          - NOTE: Example level alarms: 2.00 inches (forest dale, assuming no baseflow); 11.00 for 900 S (but may vary depending on base flow; base was 6.00 when set at 11); 27.00 for lee drain (but may vary depending on base flow; base was 21.00).
        - Deadband: 1.00 inches (forest dale, 900 S, Lee Drain)



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- If baseflow is present at the time of deployment, there are two methods for removing baseflow readings from the sensor output. For each, first measure the water depth in the pipe (including sediment depth if any present) and compare to the level shown on FSDData
  - You can check the current site readings by clicking on the main dashboard, then selecting LIST (instead of map) and then each site will show up on the left with current data in a box on the right of screen; you must first click on a site in order to see its data);
    - If these don't match, the **water surface level** must be calibrated
    - Under the SENSORS tab, under the BASIC tab, go to "Level" and to the right of it click on the "Calculate" box which will bring up a window that requests that the "take a measurement" button be clicked (once clicked it takes ~40 seconds to get a reading) and then enter the ACTUAL reading from the manual depth measurement; this will calibrate the level
    - If the manual depth and sensor depth match, there is no need to calibrate.
  - If sediment is present in the pipe/culvert, measure the sediment depth in the pipe using the compound depth gauge/pole
    - Under Basic settings, type in the sediment depth.
      - This will automatically calibrate for depth/level
  - **BE SURE TO HIT "WRITE TO LOGGER" at the bottom (once finished) to allow the settings to be updated**
- Using laptop, verify correct **Flo-dar Settings**
  - Select "sensor ports" tab and then click on "Port 1 (Flo-dar)". The following settings are then found in the "general tab" and the "flow tab", please set each site accordingly.
    - **900 S:** sensor height: 60"; flow tab, type: "area velocity (rectangular)" and set Width: 46" and Height 60"
    - **Forest Dale:** Sensor Height: 36.13"; Flow tab, type: "area velocity (rectangular)", Width: 72" and Height: 48"
    - **Lee Drain:** Sensor Height: 72.75"; Flow tab, type: "area velocity (circular)", Diameter: 72"
- Once everything is connected and appears to be ready, take the little plastic post (attached by small wire to the logger) and place it over the "test" button, this will attempt to call from the logger to the server and will provide notifications that this occurred; if the test does not produce an alert, troubleshoot by checking all settings, connections, and ensure telemetry antenna is in place and directed at the nearest cell tower.
- **Ensure program is started ("Run Program") so that it will trigger sampler**
- Also, anytime (but best to do after fully deployed) a status update can be checked (while the autosamplers are operating or program is running) by texting "CURR?" to the following numbers
  - 900 S: (385) 299-5228
  - Lee Drain: (385) 299-6261
  - Forest Dale: (385) 299-6300
  - NOTE: An alert message/email should go out showing current status.



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- **If there are ANY errors with setup, deployment, and/or sample collection, call Hach customer support immediately (1-800-227-4224)**
- **Once deployment is complete at all sites, contact Scott (Storm Drainage) to ensure the upstream diversion gate is open at 900 South.**

### STORM EVENT SAMPLING PROCEDURES

#### Equipment/Materials Check List:

- Mobile Phone
- I-pad (D.O. meter requires an Apple device; I-phones will suffice)
- Stormwater Sampling Laptop (Password: Stormwater)
- Field notebooks ("write-in-rain" – kept in laptop bag)
- D.O. meter
- pH meter
- First aid Kit
- Marking pens (Sharpie for bottle labels, and regular ink pen for notes and/or COC)
- Keys to (all) sample stations and gates (full set needed; keep a set in the laptop bag)
- Grab Sample coolers (3 small coolers; and 1 large cooler)
- Grab Sample pole and bottle cradle
- Glass quart sampling bottle
- Extra tubing and clamps
- Tools (including nut driver set, screwdriver, wrenches and knife)
- Manhole/inlet opening tools (hooks, poles)
- Traffic Cones
- Flashlight & Spotlight
- Latex/nitrile gloves
- Paper towels
- Traffic cones
- Reflective safety vest
- Grab & Composite Sample bottles [labels partially filled out for the site name, sample date, and customer (SLCDPU-SWQ); time to be added once known]
- Zip ties (or bendable metal/rubber tie downs for securing sample bottle to pole)
- Rain gear including jacket, pants and boots
- Goggle/protective lenses
- PPE for anchoring (fall harness and tether) and floatation (PFD)

### PRE-SAMPLING TASKS

- **To be completed BEFORE heading into field (or the day before if time allows)**
  - NOTE1: Watch the weather and be prepared to drive to the office once alerted.
  - NOTE2: It is best not to wait until the alert if it looks like a forecasted storm is developing, as forecasted (since the goal is to get grab samples within 30 minutes of the start of discharge) but there is no requirement to arrive very early; just be ready to come in.
- Ensure all PPE, materials and equipment are collected from the checklist (above)
- Ensure laboratory sample bottles are collected, labeled, and ready for GRABS and COMPOSITES
  - GRABS Bottle Set



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- (3) 1-quart (plastic) unpreserved
  - (3) 1-pint (plastic) NaOH
  - (3) 250 mL (amber) unpreserved
  - (3) 250 mL (amber) H<sub>3</sub>PO<sub>4</sub>
  - (3) 1-quart (amber) HCl
- COMPOSITES Bottle Set
  - (3) ½ gallon (plastic) unpreserved
  - (3) 1-quart (plastic) unpreserved
  - (3) 1-pint (plastic) H<sub>2</sub>SO<sub>4</sub>
  - (3) 1-pint (plastic) HNO<sub>3</sub>
- (3) 1-quart (amber) HCl (only sampling if visual confirmation of sheen in clear glass)
- NOTE: **Labels should be filled out before the bottle gets wet** (either in the truck, or in the office before heading out) and should show the Site Name, Sample Date, and Customer Name fields filled out;
  - Sample TIME will be added once known (**to be added before bottle is placed on ice**)
- Ensure pH meter and D.O. meter have been calibrated and are ready to go (bring them for field analysis)
- Print 2 chains-of-custody forms which are located on I-drive → I:\Storm water\Sampling\Chains Of Custody
  - (#1) SLCPU-SWQ\_WetWeatherMonitoring\_GRAB\_COC.pdf
  - (#2) SLCPU-SWQ\_WetWeatherMonitoring\_COMPOSITE\_COC.pdf
  - NOTE: Before printing these, type in all the KNOWN info ahead of time and leave the blanks to be filled out by hand
- Ensure truck is full of gas and cleaned out enough for the task at hand
- Coordinate who will be sampling. (2 people needed for safety; 1 truck only)

### STORM EVENT SAMPLING STEPS

- Receive trigger alarm (and/or determine that forecasted storm is sure to pan out)
- Arrive at office
- Grab large cooler (in sampling “lab” underneath the DI-water)
  - This will need to be filled with ice (to be used for adding ice to autosampler bases during grab-sample collection, for preservation until composite-sampling)
  - Ice will be taken from the Public Utilities yard (“Metal Shops” building)
- Grab 3 separate (small) coolers with empty bottles for GRAB SAMPLING
  - **If bottles are already in cooler, pull them out (we want them dry for writing on labels)**
  - Half-fill these empty coolers with ice
  - If not already with the coolers, collect bottles for GRAB samples
- Within 30 minutes of the sampler starting (trigger alarm), go to each site and collect grab samples
  - Historically we’ve not been able to meet this requirement, so we are required to report the reason for collecting grab samples within 60 minutes
  - Add the sample TIME to the label and update the COC to reflect these times
- Use pH meter and D.O. meter to grab those readings from each site; add this info to the Chain of Custody (Grab Sample) form which has spaces for pH and D.O.
- Verify the 24-sample bottle lids are unscrewed and placed in ziplock bag



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- Add ice from large cooler to the sampler bases at each site (taking care not to disconnect the base while it is collecting a sample; meaning: don't interrupt the program. HINT: watch the timer on the autosampler screen which shows how long until the next sample)
  - The ice can be poured into the center ring (be sure to pull the bag of lids out of here when putting in the ice; can either put the Ziploc bag back in the center or place in the field box).
  - Do this for each site, taking extra caution to put the sampler back on its base correctly and make sure that nothing is blocking the distributor arm from moving (or pinching the tube).
    - HINT: The 3 latches have 2 widths: 1 wide, 2 not-as-wide (as long as these line up, it should be correctly lined up)
- Take Grab samples back to the office and put them in the sample refrigerator (until ready for submission to the laboratory)
  - Sample refrigerator is in the samplers office/lab in the kitchen at SLCDPU Admin Building
- **Return to field sites later to collect and composite samples** (need 12-hours for Lee Drain, 4-hours both for Forest Dale and 900 South)
  - **This is usually the next morning** if the rain occurred in the evening/night, but can vary
  - NOTE: It is a better use of time to do these at the same time (after the 12-hour program finishes at Lee Drain; however, if it's a warm day and there is a concern that the ice will melt, start with collecting the shorter (4-hour) programs and then come back later for Lee Drain)
- Verify program is complete (should have 24 samples, hopefully with 0 missed, but errors can happen; make sure to take note of any missed bottles)
- If program is complete: Connect the laptop (via USB) to the datalogger (at each site) and "DOWNLOAD" the data/program
  - NOTE: This will force the sampler to send the most updated data (if for some reason it hadn't already)
- Grab the (iced) sampler base and screw on the lids
- Return to office to complete post-processing and composite the samples

### RAIN EVENT SAMPLING (POST-PROCESSING) STEPS:

- Back in the office, gather monitoring/sampling data by going to <https://fcwb-us.fsn.hach.com/landing-page/>
  - Login using:
    - Username: slcms4
    - Password: Year2022!@#
  - Go to the "Data" tab; click on "Reports" tab for post rain event downloads:
    - "Data Summary Report"
    - "Graphs"
    - "Site Sample History Report"
    - "Summary Statistics Report"
    - "Tabular Data Report"
      - Export to text file (which will automatically create CSV files in excel to be converted to Excel spreadsheet; if not already in columnar form can use the "Text to columns" function of the data tab, or the CSV file can be opened using Excel and will automatically convert to .xlsx file-type when "saved as". (Can also do data entry instead, which was found to be easiest)
  - NOTE1: Save each report in the Sampling Events subfolders for each respective site





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- NOTE2: The total rain (event precipitation, inches), discharge volume (gallons), and storm duration (hours) info is taken from these reports and then used to fill out the Hydraulics info on the water quality spreadsheet, as well as an event summary report (these can be found in previous seasons/years and basically recreated for the most recent event)
- NOTE3: If data needs to be retrieved and online info is behind or not the most up-to-date, go to the online website and select the site then go to “Instruments”, then to “Site Tasks”, then click on “download data”, then hit save. This should give the most up-to-date data if needed for compositing information.
- NOTE4: Data needs for compositing is described in the compositing procedures section (below)
- **Storm Summary Write-Up (THIS STEP CAN BE COMPLETED ON THE NEXT BUSINESS DAY, but must be included in the Sampling Event file):**
  - Write up a **Storm Summary**, (per Rain Event Post-Processing Steps NOTE2, above) should include the following information:
    - Date
    - Samplers
    - Sampling Sites
    - Event summary description
    - Sample Site Summary (1 for each site)
      - Duration of Storm (hours)
      - Rainfall Amount (inches)
      - Duration between storm events (days)
      - Estimated Total Volume of Discharge Sampled (gallons)
        - Use the flow rates at each sampling interval; multiplying discharge and time (make sure units match for unit conversion and multiplication); this will provide a volume of discharge sampled
        - This should be compared to the summary reports to determine if the number provided by Hach (FSdata) is accurate
      - Event description:
        - Time of samples (grab v. composite)
        - Physical Parameters (odor, color, floatables)
        - Chemical Parameters (temperature, pH, DO)
        - Sample frequency/pacing
        - Number of samples taken
      - Lab Submittal Info (who/what/when)
  - Save the summary in the respective folder(s) of the Sampling Events subfolder for each site

### SAMPLE (FLOW-WEIGHTED) COMPOSITING PROCEDURES

- *Digital-Portion of Compositing Procedure:* Update the Composite spreadsheet template (“Flow-Weighted-Composite\_TEMPLATE.xls”; located on City’s server at I:\Storm water\Sampling\Wet Weather Monitoring), one worksheet tab for each site, to determine flow-proportional sample volumes from each bottle (be sure to “save as” and rename based on date, which will leave the original template in-tact):



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- Add the “time” and “flow rate (cfs)” data for each Sample bottle # to the spreadsheet
    - This will automatically calculate the “Volume Required (mL)” column and these values are used to do the actual (physical) compositing
  - Be sure to save this spreadsheet in the Sample Events subfolder
- *Physical-Portion of Compositing Procedure:* (to be done 3 times: 1 for each site)
  - Grab the 3 sets of appropriately preserved sample bottles with labels
    - Be sure to fill out the bottle labels before filling them with the composited sample (including date and time based on the FIRST sample that triggered the FL900 alarm)
  - Grab (clean) very large Nalgene bottle from lab (rinse thoroughly with deionized water between composites)
  - Grab 500mL graduated cylinder (should use smaller ones for smaller volumes, as able)
  - Grab stirring plate
  - Grab (clean) magnetic stirring bar
  - Add stirring bar to large Nalgene bottle and place the bottle on top of the stirring plate (turn the power on so the bar begins spinning once the samples are deep enough to allow it to start spinning; **make sure the spout is turned all the way off and the lid is not on so air can pass through and allow water to flow when ready to add to sample bottles**)
  - Pour the flow-weighted volumes (as calculated on the compositing spreadsheet) from each of the 24 bottles into the one large Nalgene bottle (using a graduated cylinder for measuring volume from each sample bottle and pouring into the large bottle.)
    - Be sure to thoroughly shake/mix each sample bottle before measuring in the graduated cylinder, and rinse the cylinder with DI water (between sample bottles) so as to minimize cross-contamination and minimize loss of sample)
    - Allow the stirring bar to continue spinning until ready to fill laboratory bottles (maintains mixture, prevents settling);
      - Always a good idea to manually shake/stir the large bottle up before pouring into each laboratory sample bottle
- After having filled the respective laboratory sample bottles (**which have appropriate preservation and labels have been filled out prior to compositing**) from the fully composited sample (large Nalgene bottle), put these lab samples in the refrigerator until taking them to the contract laboratory.
  - For which bottles to use, the (composite) bottle list identified in the pre-sampling procedures.
- If not already filled out, complete Chains-of-Custody for Grab and Composites
- Submit samples with chains-of-custody to the contract laboratory during regular business hours (**within holding times for any constituents being sampled**);
  - Be sure to deliver the samples on ice and always ensure the bottles are at least partially submerged in ice. (It is not good practice to let bottles float around above the ice, as temperature won't be properly regulated and could lead to poor results; temperature is always checked at the lab and they will notice if the bottle wasn't properly transported/stored on ice)

## POST-MONITORING PROCEDURES

- If all samples were collected and submitted with full satisfaction of regulatory and laboratory requirements, then the Wet Weather Monitoring is done (for the season) and the following should be completed:
  - Break down all field/lab/sampling equipment





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- Clean all field/lab/sampling equipment (including sampler bottles); see **EQUIPMENT CLEANING, MAINTENANCE, AND INVENTORY CHECKS** (section, above)
  - Store all field/lab/sampling equipment
  - Lock up all sampling infrastructure/equipment for safety and protection (both in the field and at 5<sup>th</sup> South or Public Utilities yard)
- Once results are received from the contract laboratory, these data should be entered into the master water quality spreadsheet “Sampling Data Master 12-22-2016.xlsx” (found here: I:\Storm water\Sampling\Sampling Data)
  - Take special note/care to put grab sample results in the grabs column, and composites sample results in the composites column (with dates added near the top of the column);
  - Also, ensure that these data are added to correct analytical method for each parameter (these methods have changed over time and we are keeping them separate for tracking purposes)
- Update the Sampling tracker “2021-2026\_StormEvents.xlsx” to reflect the status of the event and sample submissions or data entries (found here: I:\Storm water\Sampling\Sampling Events\2020 Sampling Events\Wet Weather Monitoring). This will be updated to a new spreadsheet for each permit cycle.
- NOTE: If samples were not able to be collected or the results thrown out for some reason, we will have to catch the next rain event;
  - This process repeats until we have a representative sample from each site for each season (Spring and Fall)
    - The City shares our sampling data with DWQ; contact is Lucy Parham ([lparham@utah.gov](mailto:lparham@utah.gov))

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX E – Salt Lake City Owned Facilities Inventory, Priority Facilities (O&M) List, and  
Site-Specific SOP Reference Pages for Individual Priority Facility SWPPPs (Targeting Specific  
Pollutants/Operations-of-Concern)**

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Parks Department	Offices, warehouse, shops, wash bay & conference room	Yes	1965 West 500 South 84104	38.2	Fuel, Turf & Tree chemicals, rubbish & Equipment Cleaning. (see priority list below)	Good Housekeeping, SOPs, Infiltration	TBD	TBD	TBD
11th Ave Park	Playground, Multi-purpose fields, Basketball, Tennis, Jogging/Walking Path, Drinking Fountain, Volleyball, Picnic Tables	No	581 N Terrace Hills Dr (890 E)	25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good Housekeeping & SOPs/SOIs	TBD	TBD	TBD
17th South River Park	Playground, Restroom, Multipurpose fields, Drinking Fountain	No	1150 W 1700 S	17	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
6th East	Playground	No	220 S 600 E	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
9th South River Park	Restroom, Picnic Tables	No	1000 W Genesee (850 S)	4.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Arcadia Trailhead	Jogging/Walking Path, Drinking Fountain	No	1825 S Lakeline Dr (2950 E)	0.25	N/A		TBD	TBD	TBD
Artesian Well	Drinking Fountain	No	808 S 500 E	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Beatrice Evans Park	Sandbox	No	1224 E Gilmer Dr (905 S)	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Bend-In-The-River Open Space	Natural Area	No	1054 W Fremont Drive	4.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Bonneville Shoreline Preserve Open Space	Natural Area	No		57.73	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Bonneville Shoreline Trail Open Space	Natural Area	No			Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
City Creek Open Space above Memory Grove	Natural Area	No	950 N City Creek Canyon	369.16	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Sediment basins	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
City Creek Park	Drinking Fountain	No	110 N State St	4	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Constitution Park (County)		No	1300 W 300 N	16.5			TBD	TBD	TBD
Cotton Park	Playground	No	1815 S 300 E	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Cottonwood Park	Playground, Restroom, Basketball, Jogging/Walking Path, Volleyball, Pavilion, Off-leash area, Picnic Tables	No	1580 W North Star Dr (300 N)	25	Maintenance activities: Tree & turf chemical applications, mowing, Rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Curtis Park	Playground	No	1421 S 2200 E	1.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Davis Park	Playground, Drinking Fountain	No	916 S 2000 E	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Dee Glen Smith Tennis	Restroom, Tennis, Reservation	No	1130 S Wasatch Dr (2520 E)	2.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Dilworth Park	Tennis, Softball	No	1953 S 2100 E	4.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Donner Trail Park	Playground, Jogging/Walking Path, Drinking Fountain, Picnic Tables	No	2903 E Kennedy Dr (985 S)	17	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Ensign Downs Park	Playground, Tennis, Softball, Jogging/Walking Path, Drinking Fountain, Volleyball	No	125 E Dorchester Dr (880 N)	7	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Ensign Peak Nature Park	Jogging/Walking Path	No	1002 N Ensign Vista Dr	0.25			TBD	TBD	TBD
Fairmont Park	Playground, Restroom, Multi-purpose fields, Basketball, Jogging/Walking Path, Drinking Fountain, Volleyball, Pavilion (reservations).	No	1040 E Sugarmont Dr (2225 S)	30	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fault line Park	Playground, Drinking Fountain, Picnic Tables	No	1041 E 400 S	1	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station Tennis	Tennis	No	1015 West 300 N.	0.5			TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
First Encampment Park		No	1704 S 500 E	0.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Gallagher Park	Playground	No	644 S Park St (540 E)	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Gilgal Garden		No	749 E 500 S	3	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Glendale Park	Restroom, Tennis, Softball, Drinking Fountain, Picnic Tables	No	1375 W 1700 S	6	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Guadalupe Park	Playground, Basketball, Picnic Tables	No	619 W 500 N	1	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Herman Franks Park	Playground, Restroom, Baseball, Off-leash area	No	1371 S 700 E	10	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Hidden Hollow	Jogging/Walking Path, Drinking Fountain, Natural Area	No	1229 E Wilmington Ave (2195 S)	5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Hillcrest Park		No	1927 E Hillcrest Ave	0.75			TBD	TBD	TBD
H-Rock Open Space	Natural Area	No	1865 S Devonshire Drive	50.25			TBD	TBD	TBD
Inglewood Park	Playground, Drinking Fountain	No	1159 S McClelland St (1040 E)	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
International Peace Gardens	Drinking Fountain, restrooms, pavilions	No	1060 S 900 W	12	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Jackson Park	Playground, Picnic Tables	No	481 N Grant St (740 W)	1	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Jefferson Park	Playground	No	110 W Fremont Ave (1115 S)	3.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Jordan Meadows Park	Playground, Jogging/Walking Path, Drinking Fountain, Picnic Tables	No	1920 W 400 N	2.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Jordan Park	Playground, Restroom, Tennis, Softball, Drinking Fountain, Volleyball, Pavilion (reservations), Off-leash area, Picnic Tables, Skate Park, Horseshoes	No	1060 S 900 W	33.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Jordan River Parkway	Jogging/Walking Path	No	2100 S 2400 N		Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Kay Rees Park	Multi-purpose fields	No	535 E 14th Ave (700 N)	0.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Kletting Park	Playground	No	164 N B St (250 E)	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Laird Park	Playground, Multi-purpose fields, Softball, Drinking Fountain, Picnic Tables, Sandbox	No	1185 S 1800 E	1.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Liberty Park	Playground, Restroom, Basketball, Tennis, Jogging/Walking Path, Drinking Fountain, Volleyball, Pavilion (reservations), Picnic Tables, Swimming Pool, Horseshoes	No	600 E 900 S	100	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste. (See evaluation inspection)	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Lindsey Gardens	Playground, Restroom, Baseball, Drinking Fountain, Pavilion (reservations), Off-leash area, Picnic Tables	No	426 N M ST (800 E)	15.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Madsen Park	Playground, Basketball, Softball, Picnic Tables	No	9 N Chicago St (940 W)	2	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Memory Grove	Restroom, Jogging/Walking Path, Drinking Fountain, Off-leash area, Picnic Tables	No	300 North Canyon Road	8.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Miami Park	Playground	No	1571 N Miami Rd (1780 W)	1	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Miller Park	Jogging/Walking Path, Natural Area	No	1708 E 900 S	8.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Modesto Park	Playground, Jogging/Walking Path	No	1175 S 1000 W	5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
North Gateway Park	Restroom, Jogging/Walking Path, Drinking Fountain	No	910 N Beck St (300 W)	5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Oak Hills Ball Diamonds	Restroom, Baseball, Drinking Fountain	No	1216 S Wasatch Dr (2520 E)	2.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Parley's Historic Nature Park	Jogging/Walking Path, Off-leash area	No	2740 S 2700 E	87	Pet Waste, Maintenance Activities	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Parley's Way	Playground	No	2848 E Wilshire Dr. (2565 S)	2.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
People's Freeway Park	Playground	No	1560 S West Temple St (100 W)	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Pioneer Park	Playground, Restroom, Basketball, Tennis, Jogging/Walking Path, Drinking Fountain, Volleyball, Off-leash area	No	350 S 300 W	10	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Poplar Grove Park	Playground, Restroom, Basketball, Tennis, Baseball, Drinking Fountain, Volleyball, Pavilion (reservations), Horseshoes	No	800 S Emery St (1170 W)	6.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Popperton Park	Playground, Multi-purpose fields, Jogging/Walking Path, Picnic Tables	No	1400 E Popperton Park Way (360 N)	8	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Post Street	Playground, Drinking Fountain	No	487 S Post St (940 W)	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Pugsley Ouray Park	Playground	No	343 W 500 N	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Redwood Meadows Park	Playground	No	1768 W 400 N	1.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Regional Athletic Complex	Multi-purpose fields and more amenities to come in the future	No	2100 N Rose Park Lane	160	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Reservoir Park	Playground, Multi-purpose fields, Tennis, Drinking Fountain, Picnic Tables	No	42 S University St (1345 E)	6.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Richmond Park	Playground, Drinking Fountain, Volleyball	No	444 E 600 S	2	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Riverside Park	Playground, Restroom, Multi-purpose fields, Basketball, Tennis, Softball, Baseball, Drinking Fountain, Volleyball, Pavilion (reservations), Picnic Tables, Sandbox, Horseshoes	No	1490 W 600 N	28.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Rosewood Park	Playground, Restroom, Multi-purpose fields, Tennis, Softball, Baseball, Jogging/Walking Path, Drinking Fountain, Volleyball, Picnic Tables, Skate Park	No	1400 N 1200 W	22.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Rotary Glen Park	Restroom, Drinking Fountain, Pavilion, Picnic Tables	No	2850 E Sunnyside (840 S)	24.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Rotary Park	Picnic Tables, Natural Area	No	Up City Creek Canyon (2380 N 2500 E)		Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD



Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Sherrwood Park	Playground, Restroom, Baseball, Drinking Fountain, Volleyball, Pavilion (reservations), Picnic Tables	No	1450 W 400 S	12.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Shipp Park	Playground	No	579 E 4th Ave (200 N)	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Silver Park	Playground, Drinking Fountain	No	126 W 500 N	0.25	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Steenblik Park	Playground, Drinking Fountain, Picnic Tables	No	1050 W 800 N	2	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Stratford Park	Playground, Multi-purpose fields	No	2635 S Preston St (1930 E)	2	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Sunnyside Park	Playground, Restroom, Multi-purpose fields, Basketball, Tennis, Softball, Baseball, Drinking Fountain, Volleyball, Pavilion (reservations), Picnic Tables	No	1735 E Sunnyside Ave (840 S)	25.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Swede Town Park	Playground, Basketball, Sandbox	No	840 W 1500 N	0.75	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Taufer Park	Playground	No	680 S 300 E	1	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Victory Park	Playground, Tennis, Drinking Fountain	No	237 S 1000 E	3	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Warm Springs Park	Playground, Restroom, Multi-purpose fields, Tennis, Drinking Fountain, Picnic Tables	No	840 N Beck St (300 W)	9	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Wasatch Hollow Open Space	Natural Area	No	1700 S 1650 E	10	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Wasatch Hollow Park	Playground, Restroom, Drinking Fountain	No	1631 E 1700 S	20	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Washington Park	Playground, Restroom, Softball, Volleyball, Pavilion (reservations), Picnic Tables, Horseshoes	No	Canyon. Exit 134 on I-80 East	20	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Washington Square	Benches	No	451 S State Street		Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Westminster Park	Playground	No	986 E 1700 S	0.5	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
WestPoint Park	Playground, Restroom, Multi-purpose fields, Basketball, Tennis, Softball, Baseball, Jogging/Walking Path, Drinking Fountain, Volleyball, Pavilion (reservations), Picnic Tables, Sandbox	No	1920 W Colonel Rd (1100 N)	23	Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Department	No exposure	No	315 East 200 South, 7th		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 1	No exposure	No	211 South 500 East 84111		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 2	No exposure	No	270 West 300 North		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 3	No exposure	No	1085 East Simpson Ave.		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 4	No exposure	No	830 East 11th Ave, 84103		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 5	No exposure	No	1023 East 900 South		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 6	No exposure	No	948 West 800 South		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 7	No exposure	No	273 North 1000 West		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 8	No exposure	No	15 West 1300 South		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 9	No exposure	No	5822 West Amelia Earhart Drive 84116		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 10	No exposure	No	785 Arapeen Drive 84108		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 11	No exposure	No	581 North 2360 West		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 12	No exposure	No	4030 West 1085 North		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Fire Station No. 13	No exposure	No	2360 East Parleys Way		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Fire Station No. 14	No exposure	No	1560 Industrial Road		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Police Department	No exposure	No	315 East 200 South		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Police Pioneer Precinct	No exposure	No	1040 West 700 South		No exposure	Good housekeeping & SOPs/SOIs	TBD	TBD	TBD
Golf Maintenance & Operations (Seasonal Operations)	No exposure	No	2375 South 900 East				TBD	TBD	TBD
Bonneville Golf Course	Restrooms, golf course, club house, restaurant	No	954 Connor Street		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Forest Dale Golf Course	Restrooms, golf course, club house, restaurant	No	2375 South 900 East		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Glendale Golf Course	Restrooms, golf course, club house, restaurant	No	1630 West 2100 South		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Mountain Dell Golf Course	Restrooms, golf course, club house, restaurant	No	Parley's Canyon		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Nibley Golf Course	Restrooms, golf course, club house, restaurant	No	2730 South 700 East		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Rose Park Golf Course	Restrooms, golf course, club house, restaurant	No	1386 North Redwood Road		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Wingpointe Golf Course	CLOSED	No	3602 West 100 North	CLOSED	CLOSED	CLOSED	TBD	TBD	TBD
Airport Authority		No	776 North Terminal Drive		Individual Permit	Airport oversees their permit. UT0024988	TBD	TBD	TBD
Arts Council		No	5454 Finch Lane (Office)		No Exposure		TBD	TBD	TBD
City Cemetery	Burial Plots	No	200 N Street		Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. Chemicals stored onsite. (See evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Emergency Management	Office	No	349 So. 200 East Suite 200 (Office)		No Exposure		TBD	TBD	TBD
Forestry (Urban Forester)	Office	No	1965 West 500 South Second Floor		See Parks Facility (Priority)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
Gallivan Center	Special Events Center	No	239 South Main		Mobile food vendors, special events, lawn care and general facility maintenance.	Good Housekeeping, SOPs/SOIs,	TBD	TBD	TBD
Impound Lot	CLOSED	No	2150 West 500 South	CLOSED	CLOSED	CLOSED	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Parking Enforcement/CBD/Traffic Control Center	Material Storage Yard, office Buildings	No	212-260 East 600 South		Waste bins, material storage, (see evaluation inspection)	Good Housekeeping, SOPs/SOLs	TBD	TBD	TBD
Streets and Sanitation	See Priority List below	Yes	1990 west 500 south		See Priority List	See Priority List	TBD	TBD	TBD
PSMF Fueling Station/fleet	See Priority List below	Yes	1995 West 500 South		See Priority List	See Priority List	TBD	TBD	TBD
Public Utilities	See Priority List below	Yes	1530 South West Temple		See Priority List	See Priority List	TBD	TBD	TBD
Public Utilities	See Priority List below	Yes	1530 South West Temple		See Priority List	See Priority List	TBD	TBD	TBD
Justice Courts	Building/Parking Lot	No	333 S. 200 East		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
IMS Transmitter		No	Ensign Peak		No exposure		TBD	TBD	TBD
Main Library	Building/Parking Lot	No	210 East 400 South		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Anderson Foothill Library	Building/Parking Lot	No	1135 south 2100 East		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Chapman Library	Building/Parking Lot	No	577 South 900 West		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Corrine and Jack Sweet	Building/Parking Lot	No	455 F Street (9th Ave)		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Day- River side	Building/Parking Lot	No	1575 west 1000 north		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Streets	Storage yard	No	1990 West 500 South/700 So. Delong Street.		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Salt piles (Guardsman way)	Salt Storage	No	645 So. Guardsman way		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Salt piles (Victory Road)	Salt Storage	No	Approximately 600 N. Victory Rd.		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Salt piles (Forest Dale)	Salt Storage	No	2375 South 900 East		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Salt piles (Bonneville)	Salt Storage	No	783 N. Bonneville Blvd.		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Salt piles (Delong Street)	Salt Storage	No	700 So. Delong Street		Salt Piles (seasonal)	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
Glendale Library	Building/Parking Lot	No	1375 South Concord (1240 west) Salt Lake City, UT 84104		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Sprague Library	Building/Parking Lot	No	2131 south 1100 East		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Marmalade	Building/Parking Lot	No	500 North 300 West Salt Lake City, UT 84103		No exposure	Good Housekeeping, SOPs/SOLs,	TBD	TBD	TBD
Big Cottonwood WTP	Water Treatment facility- offices, material storage	No	4101 E. Big Cottonwood		Indoor storage-chemicals and treatment material	No exposure, good housekeeping	TBD	TBD	TBD
City Creek WTP	Water Treatment facility- offices, material storage	No	2200 N. City Creek Canyon		Indoor storage-chemicals and treatment material	no exposure, good housekeeping	TBD	TBD	TBD
Parleys WTP	Water Treatment facility- offices, material storage	No	Exit 1331 I-80		Indoor storage-chemicals and treatment material	no exposure, good housekeeping	TBD	TBD	TBD
POTW Permitted UT0021725 (WRF)	Waste Water Treatment Plant (Site has individual permit)	No	1365 West 2300 North		Chemicals, material storage, waste treatment facility, (see annual inspections)	SWPPP, Quarterly Insp., SW monitoring, annual training, Annual Insp from SWQ group. Good Housekeeping,	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Fleet	Office bldgs. And automotive repair and maintenance	Yes	1990 west 500 south & Delong street 721 So. Delong (yard)		Automotive fluids, metals, truck wash, chemical storage, fueling, machinery, trash and metal recycling bins, salt storage, and material storage	SWPPP, Weekly and Quarterly Insp, SW Monitoring, Employee training, vegetative Swales, Oil Water Separator, Good Housekeeping, SOPs	44	FLEET BLDG: Fabrication Bay North Shop (Fleet Building) – 2 floor drains FLEET BLDG: North Shop (fleet Building) – 4 floor drains FLEET BLDG: South Sop (fleet Building) – 1 floor drain FLEET BLDG: Janitor closets (fleet Building) – 3 floor drains FLEET BLDG: Men' and women's Bathrooms (Fleet Building) – 7 floor drains FLEET BLDG: Boiler Room (above mezzanine Fleet Building) – 2 floor drains STREETS BLDG: Men's and Women's Bathrooms (streets Admin Building) – 2 floor drains STREETS BLDG: Combined Crew Break Rooms – 1 floor drain STREETS BLDG: Men's and women's bathrooms (streets crew area) – 2 floor drains STREETS BLDG: Misc. work areas, offices (streets crew work area) – 10 floor drains STREETS BLDG: Hallway Ice machine/sink area (streets crew area) – 2 floor drains STREETS BLDG: Can Wash area (Sanitation work area) – 3 floor drain FUEL/WASHBAY BLDGS: Restroom next auto car wash – 1 floor drain FUEL/WASHBAY BLDGS: Maintenance room next to auto car wash – 2 floor drains FUEL/WASHBAY BLDGS: Maintenance room next to truck wash – 2 floor drains	Yes
Public Utilities	Office bldgs. And storage yard	Yes	1530 South West Temple & 4600 West 700 So.(Yard)		Stockpiles (e.g. salt, road base, sand) , fueling, chemical storage, automotive fluids, machinery, concrete waste, truck wash, trash and metal recycling bins and material storage	SWPPP, Weekly and Quarterly Insp, SW Monitoring, Employee training, sand/oil separator, Limited exposure, SOPs, Good Housekeeping.	27	SLCDPU ADMIN BLDG: Men's & Women's Upstairs Restroom – 2 floor drains SLCDPU REAGAN BLDG: Men's & Women's Restroom – 2 floor drains SLCDPU REAGAN BLDG: Kitchen – 1 floor drain SLCDPU SHOPS BLDG: Men's Restroom & locker – 2 floor drains SLCDPU SHOPS BLDG: Boot wash – 1 floor drain SLCDPU SHOPS BLDG: Carpenter Shop – 1 floor drain SLCDPU SHOPS BLDG: Shops Bay – 1 floor drain SLCDPU SHOPS BLDG: Machine Shop – 5 floor drains SLCDPU SHOPS BLDG: Warehouse – 1 floor drain SLCDPU SHOPS BLDG: Men's & Women's Restroom – 2 floor drains SLCDPU SHOPS BLDG: Electrical Shop – 1 floor drain SLCDPU SHOPS BLDG: Distribution Shop – 1 floor drain SLCDPU DISTRO BARN: Distro Barn – 1 floor drain SLCDPU VACTOR BARN: Old vactor barn – 2 floor drains SLCDPU VACTOR BARN: New Vactor barn – 1 floor drain SLCDPU WELDING SHOP: Welding Shop – 2 floor drains SLCDPU WELDING SHOP: Restroom – 1 floor drain	Yes
Parks Department	Office bldgs. And storage yard	Yes	1965 West 500 South Second Floor		Stockpiles, waste and recycling bins, chemical storage e.g. herbicides/pesticides, material storage	SWPPP, Weekly and Quarterly Insp, SW Monitoring, employee training, SW detention/infiltration. Limited exposure, SOPs, Good Housekeeping	31	PARKS & PUBLIC LANDS MAIN BLDG: Warehouse – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Carwash Bay (door 5) – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: East Shop Area (doors 6 & 7) – 2 floor drains PARKS & PUBLIC LANDS MAIN BLDG: Main Maintenance Shop Area – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Underneath Main Shop Covered Area – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Weld Shop – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Compressor Room – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Urban Forestry Shop – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: District 1 & 2 Shop – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: District 3 & 4 Shop – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Men's Locker Room – 5 floor drains PARKS & PUBLIC LANDS MAIN BLDG: Women's Locker Room – 2 floor drains PARKS & PUBLIC LANDS MAIN BLDG: Downstairs Men's Restroom – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Downstairs Women's Restroom – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Upstairs Furnace Room – 2 floor drains PARKS & PUBLIC LANDS MAIN BLDG: Upstairs Men's Restroom – 1 floor drain PARKS & PUBLIC LANDS MAIN BLDG: Upstairs Women's Restroom – 1 floor drain PARKS & PUBLIC LANDS GRAFFITI BLDG: Main Shop – 4 floor drains PARKS & PUBLIC LANDS GRAFFITI BLDG: Paint Storage Room – 1 floor drain PARKS & PUBLIC LANDS GRAFFITI BLDG: Restroom – 1 floor drain PARKS & PUBLIC LANDS GRAFFITI BLDG: Mechanical Room – 1 floor drain	Yes
PLAZA 350	Office Space same as 349 S 200 east	No	350 SOUTH 200 EAST				TBD	TBD	TBD
WAREHOUSE	Storage	No	15 S. 1000 W.		No Exposure		TBD	TBD	TBD
ART BARN	Storage	No	54 FINCH LANE		No Exposure		TBD	TBD	TBD
C&C/LIBRARY BOILER ROOM	Boiler	No	261 EAST 500 SOUTH		No Exposure		TBD	TBD	TBD
CITY AND COUNTY BUILDING	Office Space	No	451 SOUTH STATE		No Exposure		TBD	TBD	TBD
WASHINGTON SQUARE CAFE	Restaurant	No	451 S STATE ST		No Exposure		TBD	TBD	TBD
COMPLIANCE	Building/Parking Lot	No	212 EAST 600 SOUTH				TBD	TBD	TBD
COMMUNICATIONS TRANSMISSION STATION	Communications Transmission Status	No	COMMUNICATIONS TRANSMISSION STATION				TBD	TBD	TBD
FACILITIES DIVISION/ PUBLIC SERVICES	Building/Parking Lot	No	248 EAST 600 SOUTH				TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
FIRE TRAINING CENTER	Office Space & Vehicle/Equipment Storage	No	1600 SOUTH INDUSTRIAL RD		Water & ash (AFFP) ?	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
GLOBAL ARTWAYS AT FAIRMOUNT	Office Space (Fairmont Park)	No	2265 McCLELLAND AVE		No Exposure	Trash cans, good housekeeping.	TBD	TBD	TBD
IMPOUND LOT	Office Space & Vehicle/Equipment Storage	No	2150 WEST 500 SOUTH				TBD	TBD	TBD
GREEN HOUSE AT JORDAN PARK	Building	No	1060 South 900 West, Jordan Park		Growing plants/flowers for parks	Containment, Good Housekeeping, SOPs	TBD	TBD	TBD
LIBERTY CONCESSION BLDG	Concession Stand	No	1300 SOUTH/LIBERTY CONCESSION		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
LIBERTY TENNIS FACILITY	Recreation Center (Tennis Courts)	No	700 EAST 1300 SOUTH				TBD	TBD	TBD
LIBERTY YOUTH AND FAMILY	Youth and family - Building	No	YOUTH AND FAMILY AT LIBERTY PARK				TBD	TBD	TBD
GREEN HOUSE & MNT. LIBERTY PARK	Plant Studies - Building/Green House	No	LIBERTY GREEN HOUSE		Growing plant/flowers for parks		TBD	TBD	TBD
LIBRARY PARKING STRUCTURE	Parking Structure	No	241 EAST 500 SOUTH				TBD	TBD	TBD
POLICE OPERATIONS	Office Space & Vehicle/Equipment Storage	No	315 EAST 200 SOUTH		No operations storage only		TBD	TBD	TBD
PUBLIC SAFETY WAREHOUSE	Office Space & Vehicle/Equipment Storage	No	635 WEST 700 SOUTH		No operations storage only	No exposure	TBD	TBD	TBD
SBD SHOP (RDA)	Building/Office	No	8D SHOP 1095 E SIMPSON AVE		No operations	No exposure	TBD	TBD	TBD
SMITHS BALL PARK	Sports, Entertainment, Vehicle/Equipment/ Materials Storage	No	1365 SOUTH WEST TEMPLE		Pesticides, Herbicides, Fueling, minor eqpt maintenance repair & landscaping activities. (see evaluation inspection)	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
SORENSEN UNITY CENTER	Building Rec. center	No	1383 SOUTH 900 WEST		No exposure	Good Housekeeping, limited exposure.	TBD	TBD	TBD
6TH SOUTH TRAFFIC OPERATIONS	Office Space & Vehicle/Equipment Storage	No	260 EAST 600 SOUTH		No exposure	No exposure	TBD	TBD	TBD
CHASE HOME IN LIBERTY PARK	Museum	No	CHASE HOME MUSEUM		No exposure	No exposure	TBD	TBD	TBD
CHILDREN'S MUSEUM BUILDING	Museum/Park	No	840 NORTH 300 WEST		Maintenance activities: Tree & turf chemical applications, mowing, rubbish, equipment fluid leaks. & pet waste.	Good Housekeeping, limited exposure, SOPs/SOI	TBD	TBD	TBD
WEST-SIDE SENIOR CENTER	Recreation Center	No	868 WEST 900 SOUTH		No exposure	Good Housekeeping, limited exposure.	TBD	TBD	TBD
SOLAR FARM FLEET	Solar Power Generation	No	1995 W 500 S		No exposure	Pervious surface	TBD	TBD	TBD
MEMORIAL HOUSE	Museum	No	485 NORTH CANYON RD		No exposure	Good Housekeeping, limited exposure.	TBD	TBD	TBD
DEE GLEN TENNIS	Recreation Center	No	1216 SOUTH WASATCH DR		No exposure	No exposure	TBD	TBD	TBD
STEINER AQUATICS CENTR	Aquatic Recreation Center	No	645 GUARDSMAN WAY		No exposure	Good Housekeeping, limited exposure.	TBD	TBD	TBD
WAREHOUSE	Storage	No	15 S. 1000 W.		No exposure	Good Housekeeping, limited exposure.	TBD	TBD	TBD
Morris Reservoir	Water Reservoirs and Tanks	No	18th Ave & J Street		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Capitol Hills Tanks	Water Reservoirs and Tanks	No	150 East Girard Ave.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Wilson Reservoir	Water Reservoirs and Tanks	No	1213 Chandler Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
North Bench Tank	Water Reservoirs and Tanks	No	M Street & North Ridge Dr.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
15th. East Reservoir	Water Reservoirs and Tanks	No	1500 East 500 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Military Reservoir	Water Reservoirs and Tanks	No	400 South 2100 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Baskin Reservoir	Water Reservoirs and Tanks	No	1200 South Wasatch Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
East Bench Tanks	Water Reservoirs and Tanks	No	1900 South Lakeline Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Park Reservoir	Water Reservoirs and Tanks	No	3107 South 3300 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Marcus Reservoir	Water Reservoirs and Tanks	No	279 East Gordon Lane		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Eastwood Tanks	Water Reservoirs and Tanks	No	3650 East 3390 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Teton Tanks	Water Reservoirs and Tanks	No	3400 South Crestwood Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Millcreek Tank	Water Reservoirs and Tanks	No	3870 East 3800 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
White Reservoir	Water Reservoirs and Tanks	No	4200 East 4300 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Olympus Cove Tank	Water Reservoirs and Tanks	No	4505 South Gilead Way		Chlorinated Water	Routine Inspection	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Mount Olympus Tanks	Water Reservoirs and Tanks	No	4500 South 3800 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Tanner Reservoir	Water Reservoirs and Tanks	No	6200 South 2900 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Canyon Cove Upper Tank	Water Reservoirs and Tanks	No	6300 South Crest Mount Cir.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Canyon Cove Lower Tank	Water Reservoirs and Tanks	No	6430 South Crest Mount Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Ferguson Tank	Water Reservoirs and Tanks	No	7500 South Timberline Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Telford Reservoir	Water Reservoirs and Tanks	No	9500 South Wasatch Blvd.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
McIntire Reservoir	Water Reservoirs and Tanks	No	7384 South 2700 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Victory Road Reservoir	Water Reservoirs and Tanks	No	650 No. Victory Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Perry's Hollow Tank	Water Reservoirs and Tanks	No	1/2 Mile North of Wilson Res.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Neffs Canyon Tank	Water Reservoirs and Tanks	No	3/4 Mile East of White Res.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Fort Douglas Reservoir	Water Reservoirs and Tanks	No	North Slope of Red Butte Cyn.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Carrigan Cove Reservoir	Water Reservoirs and Tanks	No	3600 E. Carrigan Cove Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Ensign Downs Lower Reservoir	Water Reservoirs and Tanks	No	1343 North Oak Forrest Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Ensign Downs Upper Reservoir	Water Reservoirs and Tanks	No	1343 North Oak Forrest Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Emigration Reservoir	Water Reservoirs and Tanks	No	440 South Maryfield Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Tavaci	Water Reservoirs and Tanks	No	7197 South City View Dr		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Granite Oaks	Water Reservoirs and Tanks	No	9311 South North Little Cottonwood Rd		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
North Bench	Above Ground Water Pump Station	No	18th. Ave & J Street		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Arlington Hills	Above Ground Water Pump Station	No	1213 East Chandler Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
5th. Ave & U Street	Below Ground Water Pump Station	No	5th. Ave & U Street		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
University	Below Ground Water Pump Station	No	500 South 1600 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Reasearch Park	Below Ground Water Pump Station	No	2241 East Sunnyside Ave		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Oakhills	Below Ground Water Pump Station	No	2960 East 1185 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Bonneville	Above Ground Water Pump Station	No	1200 South Wasatch Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
East Bench	Above Ground Water Pump Station	No	1700 South Wasatch Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Third East	Below Ground Water Pump Station	No	2450 South 300 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
33rd South Booster	Below Ground Water Pump Station	No	3125 East 3300 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Kenton Drive Booster	Below Ground Water Pump Station	No	2971 South 3300 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Virginia & Millcreek Booster	Below Ground Water Pump Station	No	3470 East Millcreek Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Eastwood	Above Ground Water Pump Station	No	3650 East 3390 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Lower Boundary / Millcreek	Above Ground Water Pump Station	No	3780 East 3800 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Zarahemla	Below Ground Water Pump Station	No	4355 South Zarahemla Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Mount Olympus	Below Ground Water Pump Station	No	3800 East 4500 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
4500 South	Above Ground Water Pump Station	No	4500 South Wasatch Blvd.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
39th. & Birch	Below Ground Water Pump Station	No	3330 East 3900 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Canyon Cove	Above Ground Water Pump Station	No	6465 South Wasatch Blvd.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
70th. South	Above Ground Water Pump Station	No	3480 East 7000 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
7800 South	Above Ground Water Pump Station	No	3190 East 7800 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Golden Hills	Below Ground Water Pump Station	No	8763 South Kings Hill Dr.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Carrigan Cove	Above Ground Water Pump Station	No	1910 South Lakeline Dr.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Little Willow	Below Ground Water Pump Station	No	3390 East Danish Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
39th. South Booster	Below Ground Water Pump Station	No	3200 East 3900 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
6200 Irrigation	Below Ground Water Pump Station	No	2080 East 6200 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Ensign Downs	Below Ground Water Pump Station	No	1343 North Oak Forrest Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Emigration	Below Ground Water Pump Station	No	2500 East Emigration Cyn Rd		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Military	Below Ground Water Pump Station	No	400 South 2100 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Tavaci	Above Ground Water Pump Station	No	Canyon Estate Dr.		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Granite Oaks	Above Ground Water Pump Station	No	9311 South North Little Cottonwood Rd		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Fourth Ave & Canyon Road	Above Ground Water Well Station	No	202 No. Canyon Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Fifth So. & Fifteenth East	Below Ground Water Well Station	No	1511 East 500 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Sugarhouse Park	Below Ground Water Well Station	No	2400 South 1700 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Thirteenth East	Below Ground Water Well Station	No	1297 East 2700 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Nineteenth East	Below Ground Water Well Station	No	1905 East 2700 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Willcreek	Above Ground Water Well Station	No	2100 East 3500 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Brinton Springs	Above Ground Water Well Station	No	4800 South Highland Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Fourty Eighth South	Above Ground Water Well Station	No	4800 South 900 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Edgewood	Above Ground Water Well Station	No	5400 South Edgewood Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Diagonal Route	Above Ground Water Well Station	No	5500 South Vanwinkle Express		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Fontaine Bleu	Above Ground Water Well Station	No	5900 South Vanwinkle Express		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Sixty Two Hundred South	Above Ground Water Well Station	No	6200 South 2080 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Upper Ellison	Below Ground Water Well Station	No	2625 East 6485 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Dyer's Inn	Below Ground Water Well Station	No	2855 East 6200 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Greenfield Village	Above Ground Water Well Station	No	1744 East Villagegreen Road		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Little Cottonwood	Above Ground Water Well Station (not SLC)	No	7901 South Highland Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Walker Lane	Above Ground Water Well Station	No	5455 South Highland Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Nila Way	Above Ground Water Well Station	No	4171 South 2700 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
4280 South 2700 East	Below Ground Water Well Station	No	4280 South 2700 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Lisa Way (Neffs Draw)	Above Ground Water Well Station	No	4050 South Lisa Way		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Well #4	Above Ground Water Well Station	No	3281 South 3580 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Well #5	Above Ground Water Well Station	No	3280 South 3580 East		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Artesian Basin One	Above Ground Water Well Station	No	1200 East 4900 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Artesian Basin Two	Above Ground Water Well Station	No	1100 East 4900 South		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Richards Ditch	Above Ground Water Well Station	No	8100 South Royal Lane		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Emigration	Above Ground Water Well Station	No	440 Maryfield Drive		Chlorinated Water	Routine Inspection	TBD	TBD	TBD
Morton	Below Ground Sanitary Pump Station	No	1890 West 1125 North		Domestic waste water	Routine Inspection	TBD	TBD	TBD
New Rose Park	Below Ground Sanitary Pump Station	No	1805 West Independence Blvd		Domestic waste water	Routine Inspection	TBD	TBD	TBD
1700 North	Below Ground Sanitary Pump Station	No	1700 North Redwood Road		Domestic waste water	Routine Inspection	TBD	TBD	TBD
North Lift	Below Ground Sanitary Pump Station	No	925 North 2200 West		Domestic waste water	Routine Inspection	TBD	TBD	TBD
South Lift	Below Ground Sanitary Pump Station	No	2250 West North Temple		Domestic waste water	Routine Inspection	TBD	TBD	TBD



Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
	Panels Above Ground; Sanitary Pumps/Tanks Below Ground	No					TBD	TBD	TBD
Cannon	Above Ground Sanitary Pump Station	No	1510 South 1000 West		Domestic water	Routine Inspection	TBD	TBD	TBD
Bonneville	Above Ground Sanitary Pump Station	No	962 South Shire cliff Road		Domestic water	Routine Inspection	TBD	TBD	TBD
700 South	Above Ground Sanitary Pump Station	No	4650 West 700 South		Domestic water	Routine Inspection	TBD	TBD	TBD
	Panels Above Ground; Sanitary Pumps/Tanks Below Ground	No					TBD	TBD	TBD
40th West	Above Ground Sanitary Pump Station	No	South of Airport Observation Deck		Domestic water	Routine Inspection	TBD	TBD	TBD
900 North	Below Ground Sanitary Pump Station	No	895 North Redwood Road		Domestic water	Routine Inspection	TBD	TBD	TBD
350 North	Above Ground Sanitary Pump Station	No	330 North 4800 West		Domestic water	Routine Inspection	TBD	TBD	TBD
600 North	Above Ground Sanitary Pump Station	No	595 North 4800 West		Domestic water	Routine Inspection	TBD	TBD	TBD
Billy Mitchell	Above Ground Sanitary Pump Station	No	450 North Billy Mitchell Rd.		Domestic water	Routine Inspection	TBD	TBD	TBD
5300 West	Below Ground Sanitary Pump Station	No	5300 West North Temple		Domestic water	Routine Inspection	TBD	TBD	TBD
Amelia Earhart	Above Ground Sanitary Pump Station	No	5850 West Amelia Earhart Dr.		Domestic water	Routine Inspection	TBD	TBD	TBD
Centennial	Above Ground Sanitary Pump Station	No	4130 West 1820 South		Domestic water	Routine Inspection	TBD	TBD	TBD
Pioneer	Above Ground Sanitary Pump Station	No	1100 South Pioneer Rd.		Domestic water	Routine Inspection	TBD	TBD	TBD
Industrial	Above Ground Sanitary Pump Station	No	1850 West Industrial Road		Domestic water	Routine Inspection	TBD	TBD	TBD
Deicer #1	Below Ground Sanitary Pump Station	No	3900 West 2200 North				TBD	TBD	TBD
Deicer #2	Below Ground Sanitary Pump Station	No	3600 West 2200 North				TBD	TBD	TBD
Deicer #3	Below Ground Sanitary Pump Station	No	2800 West 2200 North				TBD	TBD	TBD
Deicer #4	Below Ground Sanitary Pump Station	No	2200 West 1995 North				TBD	TBD	TBD
	Panels Above Ground; Sanitary Pumps/Tanks Below Ground	No					TBD	TBD	TBD
Concord	Below Ground Sanitary Pump Station	No	1304 South Concord Street		Domestic water	Routine Inspection	TBD	TBD	TBD
500 West	Above Ground Sanitary Pump Station	No	1750 South 500 West		Domestic water	Routine Inspection	TBD	TBD	TBD
North Cove	Below Ground Sanitary Pump Station	No	355 East Canyon Oaks Way		Domestic water	Routine Inspection	TBD	TBD	TBD
West Lift	Below Ground Sanitary Pump Station	No	1200 North 3800 West		Domestic water	Routine Inspection	TBD	TBD	TBD
California Pl.	Above Ground Sanitary Pump Station	No	1064 West Modesto Ave.		Domestic water	Routine Inspection	TBD	TBD	TBD
	Panels Above Ground; Sanitary Pumps/Tanks Below Ground	No				Routine Inspection	TBD	TBD	TBD
Westport	Above Ground Sanitary Pump Station	No	5700 West 300 South		Domestic water	Routine Inspection	TBD	TBD	TBD
Apollo	Above Ground Sanitary Pump Station	No	121 North Apollo Rd.		Domestic water	Routine Inspection	TBD	TBD	TBD
Nintech	Above Ground Sanitary Pump Station	No	3800 West California Ave.		Domestic water	Routine Inspection	TBD	TBD	TBD
Legacy	Above Ground Sanitary Pump Station	No	6375 West 300 South		Domestic water	Routine Inspection	TBD	TBD	TBD
Airport South	Above Ground Sanitary Pump Station	No	322 North Jockey Service Rd		Domestic water	Routine Inspection	TBD	TBD	TBD
Airport East	Above Ground Sanitary Pump Station	No	699 North Terminal drive		Domestic water	Routine Inspection	TBD	TBD	TBD
Airport West	Above Ground Sanitary Pump Station	No	700 North 4000 West		Domestic water	Routine Inspection	TBD	TBD	TBD
Amazon	Above Ground Sanitary Pump Station	No	777 North 5600 West		Domestic water	Routine Inspection	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
Stadler	Above Ground Sanitary Pump Station	No	160 South 5960 West		Domestic waste water	Routine Inspection	TBD	TBD	TBD
Taxi Way	Above Ground Sanitary Pump Station	No	4290 West 1035 North		Domestic waste water	Routine Inspection	TBD	TBD	TBD
Tunnel	Above Ground Sanitary Pump Station	No	3850 West 1035 North		Domestic waste water	Routine Inspection	TBD	TBD	TBD
500s	Above Ground Sanitary Pump Station	No	1863 West 500 South		Domestic waste water	Routine Inspection	TBD	TBD	TBD
PS 2	Above Ground Sanitary Pump Station	No	6904 West 700 North		Domestic waste water	Routine Inspection	TBD	TBD	TBD
7	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No					TBD	TBD	TBD
Under Drain (By Ditch)	Above Ground Storm Water Pump Station	No	2026 West Sir Timothy		Storm Water	Routine Inspection	TBD	TBD	TBD
1000 North	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	601 West 1000 North		Storm Water	Routine Inspection	TBD	TBD	TBD
Golf Course (Rose Park)	Above Ground Storm Water Pump Station	No	1550 West Sunset Dr.		Storm Water	Routine Inspection	TBD	TBD	TBD
Oakley	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1200 North 1200 West		Storm Water	Routine Inspection	TBD	TBD	TBD
1400 North	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1413 North Redwood Road		Storm Water	Routine Inspection	TBD	TBD	TBD
WestPoint	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1910 West 1030 North		Storm Water	Routine Inspection	TBD	TBD	TBD
Montague	Above Ground Storm Water Pump Station	No	1000 West Montague Ave		Storm Water	Routine Inspection	TBD	TBD	TBD
Lt. Underdrain	Above Ground Storm Water Pump Station	No	2026 West 1257 North		Storm Water	Routine Inspection	TBD	TBD	TBD
Liberty Park	Above Ground Storm Water Pump Station	No	500 East 1300 South		Storm Water	Routine Inspection	TBD	TBD	TBD
300 West	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	300 West 1300 South		Storm Water	Routine Inspection	TBD	TBD	TBD
400 West (No. Side)	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	400 West 1295 South		Storm Water	Routine Inspection	TBD	TBD	TBD
400 West (So. Side)	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1305 South 400 West		Storm Water	Routine Inspection	TBD	TBD	TBD
Paxton	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	703 West Paxton Ave.		Storm Water	Routine Inspection	TBD	TBD	TBD
West Temple	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1105 South West Temple		Storm Water	Routine Inspection	TBD	TBD	TBD
Oil Ditch (County Pumps)	Above Ground Storm Water Pump Station	No	1250 West 2000 North		Storm Water	Routine Inspection	TBD	TBD	TBD
Lee Drain	Above Ground Storm Water Pump Station	No	1559 South 2975 West		Storm Water	Routine Inspection	TBD	TBD	TBD
Hartland	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	NEC Hartland Apts.		Storm Water	Routine Inspection	TBD	TBD	TBD
1700 South	Above Ground Storm Water Pump Station	No	1201 West 1700 So.		Storm Water	Routine Inspection	TBD	TBD	TBD
700 North	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	700 North 400 West (SEC)		Storm Water	Routine Inspection	TBD	TBD	TBD
200 South	Above Ground Storm Water Pump Station	No	200 South @ 1250 West		Storm Water	Routine Inspection	TBD	TBD	TBD
Bridgecrest Underdrain	Above Ground Storm Water Pump Station	No	2026 West 1660 North		Storm Water	Routine Inspection	TBD	TBD	TBD
800 West	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	1300 South 800 West		Storm Water	Routine Inspection	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
500 North	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	650 West 500 North		Storm Water	Routine Inspection	TBD	TBD	TBD
Gladiola	Above Ground Storm Water Pump Station	No	1554 South Gladiola St.		Storm Water	Routine Inspection	TBD	TBD	TBD
Indiana	Above Ground Storm Water Pump Station	No	880 South 2400 West		Storm Water	Routine Inspection	TBD	TBD	TBD
500 South	Panels Above Ground; Storm Water Pumps/Tanks Below Ground	No	2819 West 500 South		Storm Water	Routine Inspection	TBD	TBD	TBD
HERMAN FRANKS PARK	Concession Stand Duplicate	No	1351 S 700 E		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
HERMAN FRANKS PARK	Concession Stand	No	1351 S 700 E		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
LIBERTY PARK	Concession Stand	No	589 E 1300 S		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
LINDSEY GARDENS	Concession Stand	No	426 N M ST		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
LINDSEY GARDENS	Concession Stand	No	426 N M ST		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
MODELPORT	Concession Stand	No	7290 W CALIFORNIA AVE		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
OAK HILL BALL DIAMOND	Concession Stand	No	1216 S WASATCH DR		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
POPLAR GROVE PARK	Concession Stand	No	775 S 1200 W		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
RIVERSIDE PARK	Concession Stand	No	1476 W 600 N		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
RIVERSIDE PARK	Concession Stand	No	1476 W 600 N		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
RIVERSIDE PARK	Concession Stand	No	1476 W 600 N		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
SHERWOOD PARK	Concession Stand	No	1456 W 400 S		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
SUNNYSIDE PARK	Concession Stand	No	1735 E SUNNYSIDE AVE		food products e.g. popcorn, cotton candy, hot dog, and beverages.	Trash cans, good housekeeping.	TBD	TBD	TBD
1700 SOUTH RIVER PARK	Restroom	No	1180 W 1700 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
900 SOUTH RIVER PARK	Restroom	No	999 W GENESEE AVE		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
COTTONWOOD PARK	Restroom	No	1600 W NORTHSTAR DR		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
FAIRMONT PARK	Restroom	No	1030 E SUGARMONT DR		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
FAIRMONT PARK	Restroom	No	1030 E SUGARMONT DR		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
FAIRMONT PARK	Restroom	No	1030 E SUGARMONT DR		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
GLENDALE PARK	Restroom	No	1200 W 1700 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
HERMAN FRANKS PARK	Restroom	No	1351 S 700 E		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
HERMAN FRANKS PARK	Restroom	No	1351 S 700 E		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
JORDAN PARK	Restroom	No	1040 S 900 W		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
JORDAN PARK	Restroom	No	1040 S 900 W		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
LIBERTY PARK	Restroom	No	589 E 1300 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
LIBERTY PARK	Restroom	No	589 E 1300 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
LIBERTY PARK	Restroom	No	589 E 1300 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD
LIBERTY PARK	Restroom	No	589 E 1300 S		Domestic Water waste	Routine Inspection	TBD	TBD	TBD

Building/Facility Name	Amenities/Building Use	Priority Facility? (y/n)	Address	Acres	Operations & Potential Pollutants	SW Controls	# of Floor Drains	Notes about Floor Drains	Floor Drain Confirmed? (y/n)
LINDEY GARDENS	Restroom	No	426 N M ST		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
LOWER WASHINGTON PARK	Restroom	No	EXIT 134 ON I-80 EAST		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
MEMORY GROVE	Restroom	No	485 N CANYON RD		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
MODELPORT	Restroom	No	7290 W CALIFORNIA AVE		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
NORTH GATE WAY PARK	Restroom	No	840 N BECK ST		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
OAK HILL BALL DIAMOND	Restroom	No	1216 S WASATCH DR		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
POPLAR GROVE PARK	Restroom	No	775 S 1200 W		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
REGIONAL ATHLETIC COMPLEX	Restroom	No	2250 N ROSE PARK LN		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
REGIONAL ATHLETIC COMPLEX	Restroom	No	2250 N ROSE PARK LN		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
RIVERSIDE PARK	Restroom	No	1476 W 600 N		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
RIVERSIDE PARK	Restroom	No	1476 W 600 N		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
RIVERSIDE PARK	Restroom	No	1476 W 600 N		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
RIVERSIDE PARK	Restroom	No	1476 W 600 N		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
ROSEWOOD PARK	Restroom	No	1380 N 1200 W		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
ROTARY GLEN PARK	Restroom	No	2820 E EMIGRATION CANYON RD		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
ROTARY GLEN PARK	Restroom	No	2820 E EMIGRATION CANYON RD		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
SHERWOOD PARK	Restroom	No	1456 W 400 S		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
SUNNYSIDE PARK	Restroom	No	1735 E SUNNYSIDE AVE		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
UPPER WASHINGTON PARK	Restroom	No	EXIT 134 ON I-80 EAST		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
WARM SPRINGS PARK	Restroom	No	840 N BECK ST		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
WASATCH HOLLOW PARK	Restroom	No	1631 E 1700 S		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
WESTPOINTE PARK	Restroom	No	1155 N COLONEL RD		Domestic Water	waste Routine Inspection	TBD	TBD	TBD
WESTPOINTE PARK	Restroom	No	1155 N COLONEL RD		Domestic Water	waste Routine Inspection	TBD	TBD	TBD

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX F: 2020 Public Survey**

# **2020 General Public Stormwater Mixed-mode Survey Results**

December

Prepared for

## **Salt Lake County**



**Lighthouse Research & Development, Inc.**

[www.golighthouseco.com](http://www.golighthouseco.com)

## SURVEY RESULTS

Hello. This is \_\_\_\_\_ calling from Lighthouse Research. We are speaking with residents of Salt Lake County to get feedback on environmental issues in your area.

1. First, I need to verify that you are a resident of Salt Lake County. Is this correct?

	n=404	%
Yes	404	100%
No	0	0%

2. Which city do you live in?

	n=404	%
Alta	1	0%
Bingham Canyon	1	0%
Bluffdale	10	2%
Copperton	1	0%
Cottonwood Heights	13	3%
Draper	12	3%
Herriman	26	6%
Holladay	13	3%
Kearns	7	2%
Magna	4	1%
Midvale	14	3%

	n=404	%
Millcreek	21	5%
Murray	15	4%
Riverton	16	4%
Salt Lake City	92	23%
Sandy	23	6%
South Jordan	30	7%
South Salt Lake	9	2%
Taylorsville	20	5%
West Jordan	50	12%
West Valley City	24	6%
White City	2	0%

3. Which of the following categories includes your age?

	<b>n=404</b>	<b>%</b>
18 to 24	46	11%
25 to 34	89	22%
35 to 44	86	21%
45 to 54	64	16%
55 to 64	57	14%
65 or Older	62	15%

4. Do you identify as male, female, or do you prefer to self-identify?

	<b>n=404</b>	<b>%</b>
Male	202	50%
Female	198	49%
Self-identify (Specify)	4	1%

*(For a list of verbatim 'self-identify' responses, see Appendix B.)*



**I would now like to ask you some questions about stormwater.**

5. Which of the following best defines "stormwater"? Would you say storm water is...

	n=403	%
Water from Storms, Precipitation, Rain, and Snow	249	62%
Water Collected in Gutters and Drains	121	30%
Excess Water from Flooding	12	3%
Waste Water	4	1%
Don't Know	17	4%

**For the purpose of this survey, stormwater is water from rain, melted snow, and sleet. Stormwater flows into the nearest waterway or body of water, either directly or through storm drains in streets, gutters, and parking lots.**

6. From what you know or have heard, how much of Salt Lake County's stormwater goes to a treatment plant? Would you say all of it, some of it, or none of it?

	n=404	%
All of It	36	9%
Some of It	200	50%
None of It	54	13%
Don't Know	114	28%

7. Please tell me if you agree or disagree with the following statement: “Stormwater runoff can be a harmful source of pollution to the environment.”

	<b>n=401</b>	<b>%</b>
Strongly Disagree	41	10%
Somewhat Disagree	90	22%
Neutral	40	10%
Somewhat Agree	125	31%
Strongly Agree	70	17%
Don't Know	35	9%

8. Do you know where the nearest storm drain is in your neighborhood?

	<b>n=403</b>	<b>%</b>
Yes	251	62%
No	152	38%

9. How serious a problem do you feel stormwater pollution is in Salt Lake County? Would you say it is...

	<b>n=404</b>	<b>%</b>
Not at all Serious	27	7%
Not Very Serious	100	25%
Somewhat Serious	170	42%
Very Serious	42	10%
Don't Know	65	16%

10. What are **THREE** ways that stormwater in Salt Lake County can be polluted?

First Mention	n=403	%
Dumping Chemicals / Paint / Oils	79	20%
Trash in the Gutter/Drain	66	16%
Oil / Chemical Spills on Driveway	43	11%
Fertilizer on the Lawn	30	7%
Air Pollution	26	6%
Oil / Chemicals / Debris Picked Up from Surfaces (Roads, Gutters, etc.)	23	6%
Pollution from Factories, Mining, etc.	15	4%
Pesticides or Herbicides	12	3%
Cars, in General	12	3%
Oil / Chemicals from Cars	11	3%
Salt from Roads or Driveways	9	2%
Animals / Agriculture	6	1%
Humans / Households	6	1%
Pet Waste Left on Grass, Sidewalks, or Driveway	5	1%
Washing Cars on Driveway	2	0%
Hosing or Sweeping Sidewalk / Driveway into Gutter	1	0%
Leaving Leaves on the Lawn	1	0%
Other (Specify)	23	6%
Don't Know	33	8%

*(For a list of verbatim 'other' responses, see Appendix C.)*

Second Mention	n=369	%
Dumping Chemicals / Paint / Oils	49	13%
Trash in the Gutter/Drain	39	11%
Oil / Chemical Spills on Driveway	32	9%
Fertilizer on the Lawn	28	8%
Oil / Chemicals / Debris Picked Up from Surfaces (Roads, Gutters, etc.)	23	6%
Pet Waste Left on Grass, Sidewalks, or Driveway	21	6%
Pesticides or Herbicides	19	5%
Pollution from Factories, Mining, etc.	16	4%
Air Pollution	16	4%
Animals / Agriculture	15	4%
Oil / Chemicals from Cars	13	4%
Washing Cars on Driveway	11	3%
Salt from Roads or Driveways	7	2%
Hosing or Sweeping Sidewalk / Driveway into Gutter	6	2%
Cars, in General	3	1%
Humans / Households	2	1%
Leaving Leaves on the Lawn	1	0%
Other (Specify)	24	7%
Don't Know / No Others	44	12%

*(For a list of verbatim 'other' responses, see Appendix C.)*

Third Mention	n=322	%
Trash in the Gutter/Drain	35	11%
Dumping Chemicals / Paint / Oils	28	9%
Pollution from Factories, Mining, etc.	24	7%
Fertilizer on the Lawn	22	7%
Pet Waste Left on Grass, Sidewalks, or Driveway	19	6%
Oil / Chemical Spills on Driveway	14	4%
Humans / Households	12	4%
Animals / Agriculture	9	3%
Air Pollution	8	2%
Hosing or Sweeping Sidewalk / Driveway into Gutter	7	2%
Pesticides or Herbicides	6	2%
Salt from Roads or Driveways	6	2%
Oil / Chemicals / Debris Picked Up from Surfaces (Roads, Gutters, etc.)	6	2%
Oil / Chemicals from Cars	5	2%
Washing Cars on Driveway	3	1%
Leaving Leaves on the Lawn	3	1%
Cars, in General	1	0%
Other (Specify)	28	9%
Don't Know / No Others	86	27%

*(For a list of verbatim 'other' responses, see Appendix C.)*

All Mentions	n=403	%
Dumping Chemicals / Paint / Oils	156	39%
Trash in the Gutter / Drain	140	35%
Oil / Chemical Spills on Driveways	89	22%
Fertilizer on the Lawn	80	20%
Pollution from Factories, Mining, etc.	55	14%
Oil / Chemicals / Debris Picked Up from Surfaces (Roads, Gutters, etc.)	52	13%
Air Pollution	50	12%
Pet Waste Left on Grass, Sidewalks, or Driveway	45	11%
Pesticides or Herbicides	37	9%
Animals / Agriculture	30	7%
Oil / Chemicals from Cars	29	7%
Salt From Roads or Driveways	22	5%
Humans / Households	20	5%
Washing Cars on Driveway	16	4%
Cars, in General	16	4%
Hosing or Sweeping Sidewalk / Driveway into Gutter	14	3%
Leaving Leaves on the Lawn	5	1%
Other	64	16%
Don't Know <i>[First Mention Only]</i>	33	8%

11. **WHO** do you think is the largest contributor to stormwater pollution? Would you say it is...

	n=404	%
Residents, People, and Their Pets	183	45%
Industrial, Commercial, and Institutional Businesses	173	43%
Construction and Development	73	18%
Some Other Source (Specify)	11	3%
Don't Know	36	9%

*(For a list of verbatim 'some other source' responses, see Appendix C.)*

12. Do you generally mow your own lawn or does someone else?

	n=404	%
Yes	247	61%
No, Someone Else Does It	94	23%
Don't Have a Lawn	63	16%
Other (Specify)	0	0%

13. *If respondent has a lawn and someone else mows the lawn:* Who generally mows your lawn?

	n=94	%
Family Member	9	10%
Professional	37	39%
Teenage Neighbor	10	11%
HOA / Landlord	34	36%
Other (Specify)	0	0%
Don't Know	4	4%

14. *If respondent has a lawn:* What happens with your lawn clippings?

	n=341	%
Leave on the Lawn/Mulch	74	22%
Put in Garbage	100	29%
Put in Green Waste Bin	72	21%
Put in Compost Bin or Garden	44	13%
Someone Else Deals with My Lawn Clippings	40	12%
Other (Specify)	6	2%
Don't Know	15	4%

*(For a list of verbatim 'other' responses, see Appendix C.)*

15. *If respondent has a lawn:* Is it harmful to the environment to sweep or hose natural things like grass clippings, dirt, and leaves from your sidewalk or driveway into the gutter?

	n=341	%
Yes	222	65%
No	69	20%
Don't Know	50	15%



16. *If respondent has a lawn:* Who applies lawn treatments to your lawn, such as fertilizer, weed killer, or other similar products?

	n=341	%
Self	161	47%
Professional	81	24%
HOA / Landlord	29	9%
Family Member	17	5%
Teenage Neighbor	0	0%
Don't Use Lawn Treatments	44	13%
Other (Specify)	0	0%
Don't Know	10	3%

17. *If respondent has a lawn and personally applies lawn treatments:* Do you leave excess fertilizer on the sidewalk? Would you say...

	n=161	%
Never	109	68%
Sometimes	46	29%
Every Time	0	0%
Don't Know	6	4%

18. *If respondent has a lawn:* Please tell me if you agree or disagree with each of the following statements.

**Applying fertilizer before a rainstorm makes it work better.**

	n=340	%
Strongly Disagree	48	14%
Somewhat Disagree	65	19%
Neutral	39	11%
Somewhat Agree	85	25%
Strongly Agree	68	20%
Don't Know	35	10%

**Over fertilizing can cause a problem for the environment.**

	n=339	%
Strongly Disagree	16	5%
Somewhat Disagree	6	2%
Neutral	17	5%
Somewhat Agree	102	30%
Strongly Agree	190	56%
Don't Know	8	2%

19. Do you currently own a dog?

	<b>n=404</b>	<b>%</b>
Yes	199	49%
No	205	51%

20. *If respondent owns a dog:* How do you generally dispose of your dog's waste at home?

	<b>n=199</b>	<b>%</b>
Bag It / Throw in Trash	178	89%
Bury It	1	1%
Wash It Away with Hose	1	1%
Leave It / I Do Nothing	12	6%
Other (Specify)	4	2%
Use It as Fertilizer	3	2%

*(For a list of verbatim 'other' responses, see Appendix C.)*

21. *If respondent owns a dog:* When you have your dog in public places, what do you generally do with its waste?

	<b>n=197</b>	<b>%</b>
Bag It / Throw in Trash	179	91%
Bury It	1	1%
Wash It Away with Hose	0	0%
Leave It / I Do Nothing	0	0%
Other (Specify)	0	0%
Don't Take Dog Out in Public	17	9%

22. *If respondent owns a dog:* When you have your dog in public places, do you believe that someone else will pick up after your dog or do you feel it is your responsibility?

	n=199	%
Someone Else Will Pick Up	1	1%
My Responsibility	198	99%
Other (Specify)	0	0%
Don't Know	0	0%

23. *If respondent owns a dog:* Do you believe pet waste is dangerous to our waterways?

	n=199	%
Yes	157	79%
No	25	13%
Don't Know	17	9%

24. From what you know or have heard, is it legal or okay to dispose of any material like oil, paint, fertilizer, and detergent in storm drains and gutters? Would you say...

	n=404	%
Yes	40	10%
No	358	89%
Don't Know	6	1%

25. Where do you dispose of your leftover household chemicals like paint, antifreeze, pesticides, and household cleaners?

	n=404	%
Disposal Facility	222	55%
Garbage	106	26%
I Keep It or Use It All / Don't Have to Dispose	38	9%
Someone Else Takes Care of It	18	4%
Down the Drain	9	2%
Store or Business Drop-offs	9	2%
Pick-up Service	7	2%
Use All-natural Cleaner	1	0%
Other (Specify)	21	5%
Don't Know	16	4%

*(For a list of verbatim 'other' responses, see Appendix C.)*

26. Have you heard or seen any promotions or ads about stormwater or the prevention of stormwater pollution?

	<b>n=404</b>	<b>%</b>
Yes	125	31%
No	268	66%
Don't Remember	11	3%

27. If respondent is aware of stormwater ads: Where did you hear or see those promotions or ads?

	<b>n=125</b>	<b>%</b>
Television/TV Commercials	87	70%
Radio	9	7%
Near or On Storm Drains	8	6%
Online Ads (Non-social Media)	7	6%
Billboards	4	3%
Social Media	1	1%
Word of Mouth (Friends, Family, Co-workers)	1	1%
Movie Theater Previews	0	0%
Buses	0	0%
Other (Specify)	19	15%
Don't Remember	3	2%

*(For a list of verbatim 'other' responses, see Appendix C.)*

28. If respondent is aware of stormwater ads: What can you remember about those promotions or ads?

	n=125	%
Variation of "We All Live Downstream"	45	36%
Don't Put Things Down Storm Drains	33	26%
Things Put in Storm Drains are Washed Downstream	10	8%
Man Climbing Out of a Storm Drain	5	4%
Fish	3	2%
Stop the Flow	3	2%
Information About Treatment Facilities	2	2%
Messages On/Near Storm Drains	2	2%
Miscellaneous Responses	9	7%
Nothing, Don't Know	13	10%

*(For a list of categorized verbatim responses, see Appendix B.)*

29. Have you ever heard the slogan, "We All Live Downstream?"

	n=404	%
Yes	316	78%
No	82	20%
Don't Remember	6	1%

30. *If respondent is aware of slogan and/or stormwater ads:* Have the ads caused you to change your behavior with regards to stormwater and stormwater pollution?

	n=319	%
Yes	138	43%
No	181	57%

31. Based on what you know, are local governments required to keep stormwater clean?

	n=404	%
Yes	201	50%
No	51	13%
Don't Know	152	38%

32. Overall, how important do you feel it is to protect our stormwater? Would you say it is...

	n=403	%
Not at all Important	1	0%
Not Very Important	5	1%
Somewhat Important	90	22%
Very Important	299	74%
Don't Know	8	2%



**I just have a few final questions for statistical purposes.**

33. How many years have you lived in Salt Lake County?

	<b>n=403</b>	<b>%</b>
Less than 1 Year	3	1%
1 to 4 Years	40	10%
5 to 9 Years	40	10%
10 to 14 Years	37	9%
15 to 19 Years	30	7%
20 to 29 Years	90	22%
30 or More Years	163	40%

34. Do you own or rent your home?

	<b>n=401</b>	<b>%</b>
Own	293	73%
Rent	91	23%
Live with Family	16	4%
Other (Specify)	1	0%

*(For a list of verbatim 'other' responses, see Appendix C.)*

35. What is the last level of education you completed?

	<b>n=400</b>	<b>%</b>
Some High School	2	0%
High School Graduate / GED	48	12%
Some College or Technical School	126	32%
Bachelor's Degree	131	33%
Post-graduate Degree	93	23%

36. Which of the following categories includes your annual household income?

	n=386	%
Less than \$25,000	27	7%
\$25,000 to \$49,999	62	16%
\$50,000 to \$99,999	137	35%
\$100,000 or More	160	41%

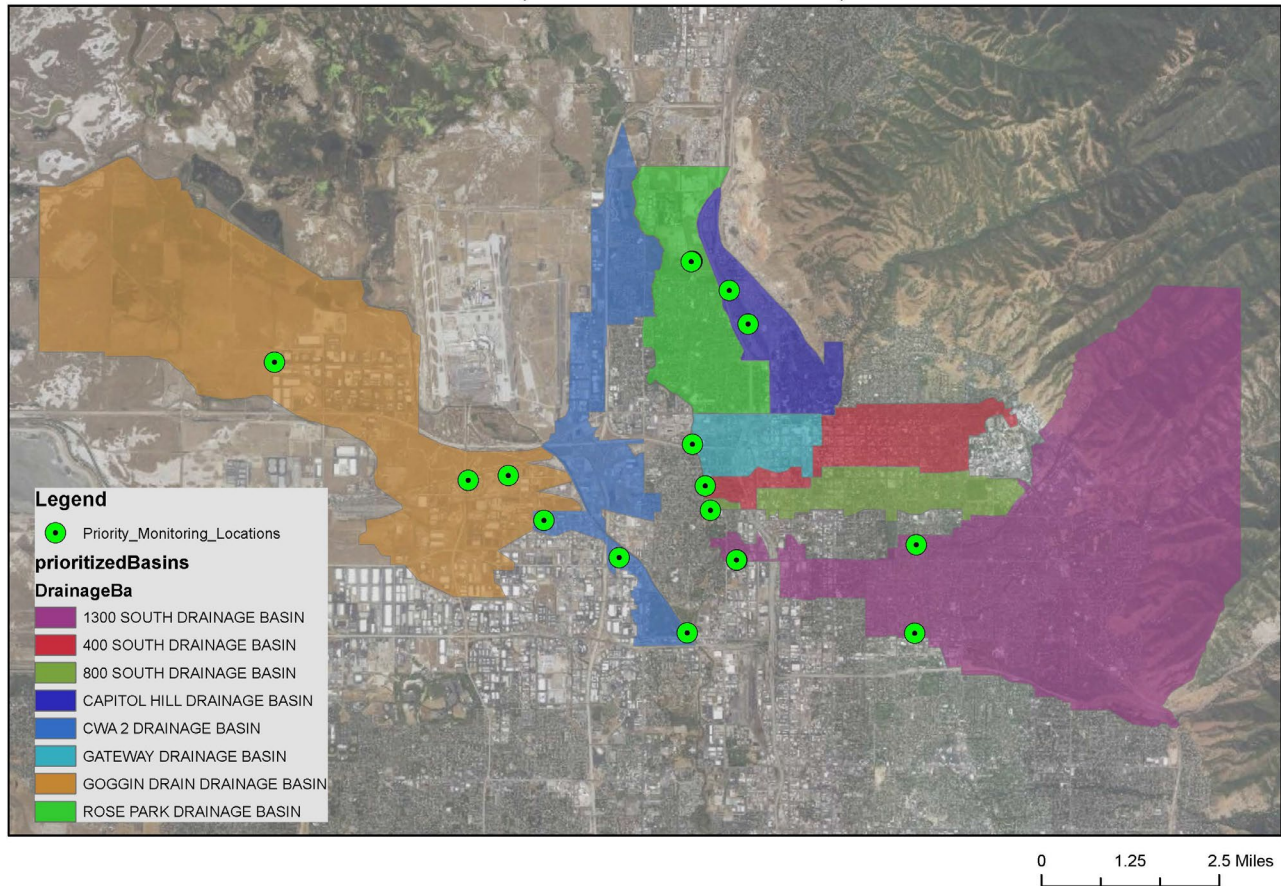
**This concludes our survey. Thank you for your time and opinions.**

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

**APPENDIX G: Priority Area (IDDE) Assessment and Mapping**

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002

Priority Areas (IDDE)  
Drainage Basins & Monitoring Locations  
(FY2021-2022 Assessment)



SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
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Table 11.1: Priority Areas (IDDE) Basins and Locations

PriorityLocation (DrainageBasin-#)	Priority Status (FY)	Notes	Reasons for Prioritization
1300 South - 1	2021-2022	Red Butte Creek daylights	basin score >40; an access point for monitoring Red Butte Creek before it enters Liberty Park
1300 South - 2	2021-2022	Parleys Creek daylights	basin score >40; an access point for monitoring Parleys Creek before it enters Liberty Park
1300 South - 3	2021-2022	North of 2 lines on 1300 South @ 800 West	basin score >40; large trunk line to the river has access at 800 West; this captures the drainage between Liberty Park and 800 West
1300 South - 4	2021-2022	South of 2 lines on 1300 South @ 800 West	basin score >40; large trunk line to the river has access at 800 West; this captures the drainage between Liberty Park and 800 West
400 South	2021-2022	Outfall JR-25	basin score >40; trunk line to the river drains this basin with inputs from central city and the lower avenues (mostly due to IDDE)
800 South	2021-2022	Outfall JR-30a	basin score >40; large trunk line to the river; this captures the drainage along 800 South and has a mix of industrial (MSGP) and IDDE
Capitol Hill - 1 (historic priority)	2021-2022	1500 N Warm Springs Rd	basin score >40; historic IDDE site that drains the refinery and industrial areas; keeping this as priority
Capitol Hill - 2 (historic priority)	2021-2022	900 N Warm Springs Rd	basin score >40; historic IDDE site that drains the refinery and industrial areas; keeping this as priority
CWA2 - 1	2021-2022	Outfall SC-01	basin score >40; small drainage area at the south end of CWA2 but a history of IDDEs
CWA2 - 2	2021-2022	outfall on CWA-2	basin score >40; industrial (MSGP) and construction (CGP) area with a history of IDDE in the middle of CWA2 drainage basin
CWA2 - 3	2021-2022	start of CWA-2	basin score >40; industrial (MSGP) and construction (CGP) area in the middle of CWA2 drainage basin
Gateway	2021-2022	Outfall JR-12	basin score >40; central outfall at river draining most of the Gateway basin which has multiple industrial (MSGP) and a history of IDDE
Goggin Drain - 1	2021-2022	start of Middle Branch Brighton	basin score >40; industrial (MSGP) and construction (CGP) area with a history of IDDE
Goggin Drain - 2	2021-2022	outfall on Little Goggin Canal	basin score >40; outfall drains an industrial (MSGP) and construction (CGP) area with some IDDE history; also, this location can be used to monitor flows from upstream which has more industrial (MSGP)
Goggin Drain - 3	2021-2022	outfall on Goggin Drain	basin score >40; outfall drains an industrial (MSGP) and construction (CGP) area with some IDDE history; also, this location can be used to monitor flows from upstream which has more industrial (MSGP)
Rose Park - 1	2021-2022	outfall at the start of North Drain	basin score >40; outfall drains a mixed residential/industrial area with a history of IDDE; also this is the point where the north drain starts
Rose Park - 2 (historic priority)	2021-2022	1589 N 1200 West	basin score >40; historic IDDE site that drains the refinery and industrial areas; keeping this as priority

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**Table 11.1: Priority Areas (IDDE) Assessment Scoring Matrix**

Potential Priority Basins	Older Infrastructure	History SSO	OSSFs	Zoning	MSGP Permitted Sites	Pretreatment Permitted Sites	Upstream of Sensitive	History IDDE	Total Score*
CWA2	9.50	9.00	10.00	7.00	9.00	8.00	0.00	8.00	60.50
1300 South	8.50	10.00	7.00	4.00	3.00	8.00	10.00	10.00	60.50
Capitol Hill	7.50	6.00	9.00	5.00	7.00	9.00	0.00	9.00	52.50
Gateway	3.50	6.00	1.00	4.00	5.00	10.00	10.00	8.00	47.50
Goggin Drain	3.00	1.00	5.00	10.00	10.00	10.00	0.00	8.00	47.00
800 South	4.00	8.00	0.00	3.00	6.00	7.00	10.00	9.00	47.00
400 South	4.50	8.00	1.00	4.00	4.00	6.00	10.00	9.00	46.50
Rose Park	6.50	7.00	6.00	5.00	7.00	3.00	0.00	8.00	42.50
Lee Drain	0.50	0.00	1.00	8.00	10.00	10.00	0.00	8.00	37.50
900 South	3.00	4.00	2.00	2.00	6.00	5.00	10.00	3.00	35.00
1700 South	2.50	3.00	2.00	3.00	2.00	5.00	10.00	5.00	32.50
Jordan River	6.00	7.00	5.00	1.00	0.00	2.00	10.00	1.00	32.00
Airport	6.50	5.00	8.00	5.00	1.00	4.00	0.00	1.00	30.50
2700 South	3.00	4.00	2.00	2.00	0.00	2.00	10.00	4.00	27.00
CWA3	0.00	0.00	0.00	4.00	8.00	10.00	0.00	4.00	26.00
CWA4	2.50	1.00	4.00	3.00	5.00	4.00	0.00	6.00	25.50
Avenues	2.00	4.00	0.00	1.00	0.00	2.00	10.00	4.00	23.00
Jefferson	1.00	2.00	0.00	2.00	1.00	3.00	10.00	4.00	23.00
CWA1	1.50	3.00	0.00	3.00	6.00	2.00	0.00	7.00	22.50
2100 South	1.50	0.00	3.00	2.00	0.00	3.00	10.00	2.00	21.50
Brighton Drain	0.50	0.00	1.00	9.00	2.00	4.00	0.00	3.00	19.50
City Creek	1.00	1.00	1.00	0.00	0.00	2.00	10.00	2.00	17.00
Beck Springs	2.50	0.00	5.00	2.00	2.00	2.00	0.00	1.00	14.50
Ensign Peak	0.50	1.00	0.00	0.00	0.00	2.00	10.00	1.00	14.50
Interstate	0.00	0.00	0.00	1.00	0.00	2.00	10.00	1.00	14.00
Liberty Park	0.00	0.00	0.00	0.00	0.00	2.00	10.00	1.00	13.00
University	0.50	1.00	0.00	0.00	0.00	0.00	10.00	1.00	12.50
Surplus Canal	1.00	0.00	2.00	2.00	4.00	0.00	0.00	1.00	10.00
Brighton Canal	1.50	3.00	0.00	2.00	0.00	2.00	0.00	1.00	9.50

\* Drainage basins with a combined score >40 are being included in the Priority Areas list

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
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**APPENDIX H: SWMP Updates**

**5/31/2022:** Updated 2 IDDE-related SOPs in SOP Manual (Appendix D) to address internal cost recovery mechanisms; adjusted page numbering through rest of document.

**02/12/2024:** Inserted the MS4 TMDL Compliance Plan for the Jordan River Watershed Wide TMDL into the SWMP (Appendix J) and updated the Special Conditions (Part 2) of this plan to reflect current water quality special conditions.

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
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**APPENDIX I: FLOOR DRAIN INVENTORY AND DISCHARGE LOCATION VERIFICATION PLAN**



## SLC Floor Drain Inventory and Discharge Location Verifications Plan

### Salt Lake City Corporation Owned & Operated Facilities

#### PURPOSE

To meet permit requirements of the 2021 SLC MS4 Permit (UTS000002 issued June 22, 2021) for inventory and discharge location verification of floor drains at city-owned/operated facilities. This plan provides a process and timeline for the completion of this task.

The goal of this task is to protect receiving Waters of the State from pollution associated with waste management at City-owned/operated facilities; a properly functioning floor drain system discharging to sanitary sewer is essential for meeting this goal.

#### 2021 MS4 PERMIT (UTS000002) CITATIONS

**4.2.7.6.:** The Permittee must maintain an inventory of all floor drains inside all “high priority” Permittee-owned or operated buildings and ensure that all floor drains discharge to appropriate locations. The inventory shall be updated as necessary to ensure accuracy.

**4.2.6.7.6.1.:** Within 90 days of the effective date of this permit the Permittee must submit a plan to the Director on how the Permittee proposes to inventory floor drains inside all Permittee- owned or operated buildings to ensure that the floor drains discharge to appropriate locations. The plan at a minimum should include a proposed timeline and prioritization. The plan will require Director approval. The approved plan will become a permit requirement. The proposal may be re-evaluated and updated in the next permit term, if deemed necessary.

#### FLOOR DRAIN INVENTORY & VERIFICATION PLAN

Salt Lake City will begin by updating the full City-owned and operated facilities inventory list and then proceed with conducting/updating assessments of the potential pollutants and pollutant-generating activities at each facility. This information will be used to prioritize facilities for inclusion in the Pollution Prevention minimum control measure “Priority Facilities” site list (previously documented for the 2015 MS4 Permit). Per 4.2.7.6. of the 2021 MS4 Permit, prioritized facilities floor drains will be inventoried first, and discharge locations confirmed through various methods (as-built plans, dye/smoke testing, cameras, etc.).

The remaining facilities will be ranked by proximity to waterbodies, age of facility, and potential pollutants. This ranking will be used to schedule the inventory and discharge location verification of floor drains at all other City facilities.

If any floor drains are determined to discharge to the MS4 or any improper discharge location, the city will block (or otherwise disconnect) the floor drain and proceed with a plan to retrofit the infrastructure. SLC will notify the Director (DWQ) if any floor drains are found to be discharging to the MS4.

#### SCHEDULE FOR IMPLEMENTATION

Schedule					Task
Permit Year					
1	2	3	4	5	
X					All Facilities Inventory (Update to include new facilities and add floor drains), Assessment (Pollutants and Activities), Prioritization
X					Evaluate discharges (confirm discharge location) from floor drains at high priority facilities.
	X				Rank remaining and catalog (non-priority) facilities by proximity to waterbodies, age of facility, and potential pollutants
	X	X	X	X	Evaluate discharges (confirm discharge locations) from floor drains at all other facilities (by ranking) with a goal of 10% of facility floor drains evaluated each year*
	X	X	X	X	Retrofit any floor drains found to be discharging to the MS4*

Salt Lake City owns and operates approximately **307 facilities with possible floor drains**, which include buildings, recreation centers, parks buildings/public restrooms, golf courses, pump stations, wells, and treatment plants etc.(see

## SLC Floor Drain Inventory and Discharge Location Verifications Plan

### Salt Lake City Corporation Owned & Operated Facilities

attached inventory). Above is the schedule for evaluating, cataloging, and confirming discharge location.

After reviewing the inventory (attached) it is fair to assume that with approximately 307 owned and operated facilities/buildings, the City has an unspecified amount of floor drains that need to be inventoried the goal is to complete this task in year one of the permit cycle. Once the inventory is completed, the goal will be to catalog and rank the “non-priority” facilities in year two of the permit cycle. Once the ranking is completed, the City will have a better estimated timeline and cost associated with completing the task of confirming the discharge location of “all” floor drains. As mentioned in the above schedule, the targeted goal of 10% annually would likely run into the next permit cycle.

At this time, this is just an estimate and would most likely include coordinating with other department building/facility managers, creating an SOP, and potentially hiring one to two FTEs, retaining the services of several licensed plumbing contractors to trace the drains to confirm discharge locations of floor drains that cannot be confirmed by internal staff (2021 cost per hour for plumbers is between \$130.00-\$200.00).<sup>(1)</sup> This is in addition to (potentially) hiring a consultant at approximately \$250,000-\$300,000.<sup>(2)</sup>

#### **Estimate to complete floor drain task is \$2,500,000-\$3,000,000.<sup>(3)</sup>**

\* Plan extends through the 2021 MS4 Permit cycle and continues through the next permit cycle at 10% of floor drains assessed, per year.

\*If possible, the City will do more than proposed 10% annually to try and complete the task before the proposed timeline.

- (1) It is estimated that each drain would need to be tested and cleared before another could be tested. The task would potentially take several hours per drain, and several days per building; buildings with multiple floors would take longer to complete.
- (2) Estimate compared to the 2021 contract for the Lead and Cooper program.
- (3) Need two staff members full-time to perform inventory and dye testing.
  - a. \$125,000 per staff member per year (includes salary, overhead, and benefit costs). Therefore, two staff members will be approximately \$250,000 per year. Does not include escalation/COLA.
  - b. Cost estimate is \$2,500,000-\$3,000,000 for staff time for duration of permit requirement.
  - c. Cost does not include supplies, equipment, or potential remediation if needed.

Note: The above implementation schedule may be delayed due to staffing, building closures, and supply shortages related to the COVID 19 pandemic.

SALT LAKE CITY STORM WATER MANAGEMENT PLAN  
MS4 UPDES PERMIT NO. UTS000002  
**APPENDIX J: TMDL Compliance Plan for the Jordan River Watershed Wide E. *Coli* TMDL**

**Purpose:** Reduction of *E. coli* pollution in stormwater discharges from Salt Lake City’s Municipal Separate Storm Sewer (MS4) to Waters of the State.

**Need:** MS4 permittees that discharge to *E. coli* impaired waters (for which stormwater is a contributing source per the Jordan River Watershed Wide *E. coli* TMDL) are required to update Stormwater Management Plan (SWMP) documents to include a written plan (“TMDL Compliance Plan”) addressing the pollutant reduction requirements of the TMDL as it relates to MS4s. This TMDL Compliance Plan supplements and builds-on the six (6) minimum control measures of the MS4 Permit. The development, funding, and implementation of BMPs that reduce the discharge of *E. coli* are the responsibility of Salt Lake City (SLC).

**TMDL Compliance Plan & SWMP Update Deadline:** SWMP documents as they pertain to the *E. coli* TMDL must be updated within 180 days; this includes the written plan (TMDL Compliance Plan) addressing the pollutant reduction requirements of the TMDL as it relates to MS4s. 180 days from the permit effective date is February 12, 2024.

**Annual Report and TMDL Compliance Report Form:** MS4s are required to report annually on TMDL compliance by submitting a TMDL compliance report form with each annual report. The reporting will include identification of problem areas for which source control BMPs were developed, the cost, and the anticipated pollutant reduction. The first TMDL Compliance Report within the annual report will be due to the State of Utah’s Division of Water Quality by October 1, 2024.

1. Public Education and Outreach

1.1. MS4 Permit Part 3.2.2.1.

1.1.1. SLC acknowledges that there are many ways that *E. coli* bacteria can enter its MS4 and have the potential to be discharged to Waters of the State. As required by MS4 Permit, SLC has identified the following potential sources of *E. coli* (and the associated general audiences for each source):

- *Sanitary Sewer Conveyance Facilities*
  - *Sanitary Sewer System (pipes, junction, manholes, etc.)*
  - *Lift/Pump Stations*
- *Sanitary Sewer Treatment Facilities*
  - *On-Site Sewage Facilities (OSSFs)*
  - *Waste Collection and Treatment Operations*
  - *Water Reclamation Facilities (WRFs)*
- *Parks with Dog Facilities and/or Open Water Bodies*
  - *Public Parks*
  - *Dog Parks*
  - *Golf courses*
- *Residences with Dog Amenities/Facilities/Populations*
  - *Multi-Family Residences*
  - *Hotels and Motels*
  - *Single-Family Residences*
- *Commercial/Industrial Facilities*
  - *Compost Operations*
  - *Plumbers*
  - *Waste Haulers and Septic Cleaning Services*
  - *Portable Toilet Services*
  - *Construction/Development Projects*
  - *Pet Services (Kennels, Groomers, Veterinary, Stores, Breeders)*
  - *Farms with Animal Operations (Pastures, Confined Feeding, and Grazing areas for Cattle, Horse, Pig, Goat, Llama, etc.)*
  - *Zoos and Petting Zoos*
- *Humans (Direct Deposition)*
  - *Recreationists*
  - *Unhoused Population*
- *Animals (Direct Deposition)*
  - *Waterfowl*
  - *Domestic Pets (Dogs, etc.)*
  - *Ungulates (Deer, Elk, Moose, etc.)*
- *Canals*

1.1.2. SLC will utilize various, targeted education and outreach materials (including but not limited to pamphlets, mailers, posters, banners, etc.) and permanent signage with *E. coli* reduction messaging to specific audiences associated with the potential sources of *E. coli* listed in Part 1.1.1. of this plan. The educational materials will focus on the impacts on water quality associated with *E. coli* and Best Management Practices (BMPs) to prevent the discharge of *E. coli*.

1.1.3. Implementation Schedule:

- 1.1.3.1. In year 1 of the permit cycle, and continuing through this and future permit cycles, residents/visitors will be targeted for *E. coli* reduction education through combined efforts of SLC and the SLCo Stormwater Coalition.
    - 1.1.3.1.1. This will include (but will not be limited to) increased media messaging, utility bill inserts and other mailers, pamphlets at City facilities and outreach events, signage at parks and golf courses (open spaces), direct education from the Parks staff to park users (detering feeding waterfowl and enforcing existing regulations regarding pet waste containment and disposal), among others that will be determined over time.
    - 1.1.3.1.2. For education and outreach to all resident, visitor, and unhoused populations, the City will focus on evaluating and adjusting the methods by which this specific messaging is brought to those populations. This will be re-evaluated on an annual basis.
  - 1.1.3.2. In years 2 and 3 of the permit cycle, the various commercial operations identified as potential sources will be targeted for education through the combined efforts of SLC and the SLCo Stormwater Coalition.
    - 1.1.3.2.1. Education will be conducted through the development of industry-specific *E. coli* reduction activity best management practices, educational materials that highlight those practices, and distribution of those materials (digital and hardcopy) to the various audiences associated with each potential source.
    - 1.1.3.2.2. Additionally, the City will work with outreach groups that serve unhoused populations (which exist within SLC boundaries) and recreationists to develop messaging and outreach methods that will be pertinent to their shared experience and needs while attempting to reduce *E. coli* discharges.
  - 1.1.3.3. In year 4 of the permit cycle, the City will conduct an evaluation of the operations and maintenance of public and private sanitary sewer conveyance and treatment facilities to determine potential to improve the reduction of *E. coli* pollution from those facilities.
    - 1.1.3.3.1. For City operations this will include evaluations and adjustments to standard operating procedures and maintenance schedules as well as targeted training.
    - 1.1.3.3.2. For private operations, particularly On-Site Sewage Facilities (OSSFs) and waste hauling and treatment facilities, this will involve working with the SLCo Health Department to ensure that OSSFs operating within SLC boundaries are being inspected and that those facilities are operating optimally; additionally, SLCDPU Pretreatment and Industrial Stormwater permitting programs that regulate waste hauling and on-site pretreatment facilities will be tracked and targeted for education and outreach.
    - 1.1.3.3.3. For both public and private sanitary sewer facility operators, additional education and outreach materials will be developed which target those groups; opportunities for targeted signage and training will be evaluated and implemented.
  - 1.1.3.4. These outreach and education efforts will be tracked and reported annually.
- 1.2. MS4 Permit Part 3.2.2.1.1.

- 1.2.1. As a leading member of the Salt Lake County Stormwater Coalition, SLC will continue to coordinate with the County and other Coalition partners to ensure appropriate, effective, targeted messaging is developed and delivered to potential *E. coli* source audiences through the various means of outreach and education that the Coalition utilizes.
2. Inventory of Sources of *E. coli* within the MS4
  - 2.1. MS4 Permit Part 3.2.2.2.
    - 2.1.1. The potential *E. coli* sources identified in Part 1.1.1. of this Plan will be maintained as a spreadsheet (utilizing a variation of the State supplied “Checklist for *E. coli* Source Inventory”).
      - 2.1.1.1. The checklist establishes a system for tracking the sources, identifying BMPs to address each source, and prioritizing certain areas for additional inspections.
    - 2.1.2. Implementation Schedule:
      - 2.1.2.1. The inventory checklist will be completely assessed during year 1 of the permit cycle and updated annually (or as changes in land use, ownership, or management occur or become evident).
  - 2.2. MS4 Permit Part 3.2.2.2.1.
    - 2.2.1. SLC plans to reduce *E. coli* in discharges conveyed through the City’s MS4 by first establishing an inventory of prioritized potential sources using the following prioritization criteria:
      - Site proximity to Waters of the State (shorter flow paths would be prioritized)
      - Source of *E. coli* present at the location (dog waste and dense waterfowl areas will be prioritized)
      - Magnitude of *E. coli* loading (as identified in the State’s TMDL study)
    - 2.2.2. Implementation Schedule:
      - 2.2.2.1. Prioritization analysis will be conducted during year 1 of the permit cycle and updated annually with changes to prioritization strategies or changes in land use, ownership, or management. Changes to the inventory of prioritized sources and source areas will be reflected in the annual review and update of the City’s SWMP.
    - 2.2.3. The reduction of *E. coli* through those prioritized potential sources (from Part 2.2.1 of this Plan) will be attempted through a series of structural and non-structural BMPs:
      - 2.2.3.1. Structural BMPs
        - Increase waste containment areas
          - Assess all source areas for sufficient waste containment infrastructure
          - Install pet waste bag dispensers in areas in which those are lacking
          - Install waste receptacles in areas in which those are lacking
        - Identification and repair of illicit cross-connections
          - Include *E. coli* to the suite of parameters sampled during an Illicit Discharge Detection and Elimination (IDDE) Minimum Control Measure (MCM) investigation whenever a sanitary sewer cross-connection is suspected.
        - Installation of appropriate signage at prioritized areas

- Signage would clearly state the City’s prohibitions against improper dog waste disposal and feeding of waterfowl, and will provide QR-codes that will direct visitors to websites that provide information regarding the effects of *E. coli* pollution.
- Installation of LID controls (public and private) with bacterial removal effectiveness listed in the State’s LID Manual as being medium to high
  - This is part of the Long-Term Stormwater Management (LTSWM) and Pollution Prevention and Municipal Good Housekeeping (PP&MGH) MCMs of the MS4 Permit.

2.2.3.2. Non-Structural BMPs

- Increased sweeping of priority areas
- Clean-up of pet & waterfowl areas prior to forecasted storm events
- Keeping pet waste bags stocked
- Clean out pet waste receptacles regularly (so they do not overfill)
- Education on septic and on-site treatment system maintenance
- Requirements for maintenance of septic and on-site treatment systems
- Partner with program that work with unhoused and recreationist populations
- Regularly educate all target audiences
- Riparian set-back (buffer zones) between Waters of the State

2.2.4. Implementation Schedule:

- 2.2.4.1. In year 1 of the permit cycle, and annually through life of the permit, the various work groups within SLC and SLCo that operate, maintain, or regulate those facilities and operations identified as potential sources will conduct evaluations of the effectiveness of their respective *E. coli* pollution reduction activities and adjust processes to ensure the most appropriate and effective effort is being conducted.
- 2.2.4.2. Those work groups will adjust their processes regarding *E. coli* pollution reduction and implement new strategies to target and eliminate those sources. Those strategies and BMPs will be documented in the City’s SWMP and reported in the MS4 Annual Report.

2.3. MS4 Permit Part 3.2.2.2.2.

- 2.3.1. SLC will add the prioritized (potential) *E. coli* source areas (from Part 2.1.1. of this plan) to the IDDE Priority Areas list (as presented in Appendix G of this SWMP, per the IDDE MCM of the MS4 Permit) with a plan to inspect those areas in line with that permit requirement (at least annually).

2.3.2. Implementation Schedule

- 2.3.2.1. During each year of the permit cycle, as part of the ongoing IDDE priority area inspections, the City will conduct (at least annually) inspections of those facilities that are deemed priority areas for potential *E. coli* pollution.
- 2.3.2.2. These inspections will be conducted using a form and will involve evaluation of the existence of, or potential for, discharges of *E. coli* in stormwater.
- 2.3.2.3. The inspections of those areas and any follow-up investigations or corrective actions will be tracked as part of that program and reported annually.

- 2.3.3. SLC will update the IDDE inspection form to include additional *E. coli* related indicators.

2.3.4. Implementation Schedule:



- 2.3.4.1. In year 1 of the permit cycle, the IDDE Priority Areas inspection form will be revised.
    - 2.3.4.2. During each additional year of the permit cycle, the form will be assessed and either updated or approved for continued use.
  - 2.4. MS4 Permit Part 3.2.2.2.3.
    - 2.4.1. The City will update SOPs for street & parking lot sweeping and storm drain maintenance activities so that those SOPs reflect increased sweeping and maintenance activities in prioritized IDDE areas, while ensuring those SOPs effectively control or reduce *E. coli* pollution discharge potential. Additionally, the City will continue to track the street sweeping and storm sewer system maintenance activities.
    - 2.4.2. Implementation Schedule:
      - 2.4.2.1. The evaluation and update of SOPs will be conducted in year 1 of the permit cycle and evaluated annually to determine whether those operations should be adjusted for improvement. Any changes to those SOPs will be documented in the City's SWMP.
      - 2.4.2.2. The street sweeping and MS4 maintenance activities will be tracked and reported in the MS4 Annual Report.
- 3. MS4 Owned/Operated Facilities & Operations
  - 3.1. MS4 Permit Part 3.2.2.3.
    - 3.1.1. The City will evaluate the High-Priority Facilities list that is required in the PP&MGH MCM of the MS4 permit to assess whether the potential sources of *E. coli* (at City owned/operated facilities) are included in that list; facilities that are not already listed will be added.
      - 3.1.1.1. New entries to the High-Priority list will include: (1) City owned/operated dog parks, (2) City owned/operated parks with open water, (3) City owned/operated sites with septic (on-site sewage facilities), and (4) City owned/operated properties that are known potential sources of *E. Coli*
      - 3.1.1.2. For any new entry to the High-Priority City facilities list, BMPs will be identified and implemented at each facility which will effectively reduce/control *E. Coli* discharges from those facilities.
    - 3.1.2. Implementation Schedule:
      - 3.1.2.1. In year 1 of the permit cycle, the High-Priority list of City owned/operated facilities will be evaluated; any facilities with a significant potential to discharge *E. coli* will be added to the list and included in the PP&MGH MCM High-Priority inspections program. All BMPs identified for each facility will be added to the list and implemented.
      - 3.1.2.2. The High-Priority Facilities list will be evaluated annually and adjusted where deemed appropriate by the City; any changes to that prioritization process/list will be documented in the City's SWMP.
  - 3.2. MS4 Permit Part 3.2.2.4.
    - 3.2.1. As part of the PP&MGH MCM of the MS4 permit, the City will evaluate the existing SOPs for city operations and maintenance (O&M) activities to determine whether *E. coli* discharge potential is inherent in those activities, and whether procedures need to be improved to increase *E. coli* reduction capabilities, including considerations for changes to the scheduling of O&M activities.
    - 3.2.2. Implementation Schedule

- 3.2.2.1. The evaluation of existing SOPs will be conducted in years 1 and 2 of the permit cycle. In the latter years of the permit cycle, any newly identified sources in City operations and maintenance will have a SOP developed to address *E. coli* reduction. Additionally, any changes to these procedures will be reflected in an update to the associated SOP and the City's SWMP will be updated to reflect that change.
- 4. LID Controls that target *E. coli*
  - 4.1. MS4 Permit Part 3.2.2.5.
    - 4.1.1. In compliance with the Long-Term Stormwater (LTSWM) MCM of the MS4 Permit, the City will continue to promote the use of Low Impact Development (LID) controls for all applicable new and redevelopment projects within the City's MS4 jurisdiction. To meet guidelines for reduction of *E. coli* in stormwater discharges, the City will ensure that the list of allowed LTSWM BMPs includes at least 5 LID practices that purport to have a medium or high effectiveness for bacteria removal.
    - 4.1.2. Implementation Schedule:
      - 4.1.2.1. The City's LTSWM MCM already provides for the selection of a variety of LID BMPs which identify bacteria removal at a medium to high effectiveness; any feasible BMP from the State of Utah LID Manual (which includes multiple BMPs that are effective for controlling bacteria) is allowed to be used in the City's MS4 jurisdiction.
      - 4.1.2.2. Beginning in Year 1 of the permit cycle and continuing through the life of the permit, those BMPs with high to medium bacteria removal effectiveness will be expressly recommended to applicants and designers for new development (or redevelopment) projects that are proposed within SLC MS4 jurisdiction.
- 5. Incorporation of *E. coli* criterion in Retrofit Ranking Plan
  - 5.1. MS4 Permit Part 3.2.2.6.
    - 5.1.1. In compliance with the PP&MGH MCM of the MS4 Permit, the City's Retrofit Plan already includes criteria for ranking retrofit projects. Going forward, *E. coli* discharge source (and reduction) potential will be included in this assessment of prioritizing retrofit projects.
    - 5.1.2. Implementation Schedule
      - 5.1.2.1. In year 1 of the permit, and through the life of the permit, the City will incorporate *E. coli* discharge and reduction potential in the factors for prioritizing retrofit projects.
- 6. Incorporation of *E. coli* monitoring at Wet-Weather Sites
  - 6.1. MS4 Permit Part 3.2.2.7.
    - 6.1.1. The City will add *E. coli* to the list of parameters being sampled in the MS4 permit-required Wet Weather Monitoring program in both the first flush (Grab Samples) and through the course of the rain event (Composite Samples).
    - 6.1.2. Implementation Schedule:

- 6.1.2.1. The City has already begun, as of Fall of 2023, to analyze for bacteria in Wet Weather Monitoring, specifically Grab Samples. The decision to only analyze for *E. coli* in Grab Samples was due to the laboratory-required holding times, which prevent (in most cases) timely analysis when a rain event occurs on a Friday or Saturday or late in the evening. While the City continues to have this concern over meeting analytical method holding times, *E. Coli* will be added as a parameter for Composite Samples, as well.
- 6.1.2.1.1. However, the City acknowledges that the timing of storms will not always allow for the samples to be analyzed within the laboratory dictated holding times for bacteria analysis; any failures to meet holding times for bacterial analysis will be tracked by the MS4 and included in the MS4 Annual Report.