

Appendix E

Long Term (Post-Construction) Stormwater Management Program-MCM 5

Post Construction (Long term) Plan

Commercial Post Construction SWMP

80th percentile spreadsheet MSD (0.55' average depth)

BMP Inventory

Retrofit Building List

NAME	Effective Year Built	Effective Score
SUNDAY ANDERSON WESTSIDE SENIOR C	1989	4
ANIMAL SHELTER	2000	3
COUNTY ICE CENTER	1999	3
RIVERBEND CLUB HOUSE	1994	4
MICK RILEY GOLF COURSE	1966	4
CALVIN SMITH LIBRARY	1987	4
WHEELER FARM ACTIVITY BARN	1990	4
WHEELER FARM BARN	1984	4
SOUTH COUNTY POOL	1983	4
GRANITE SALT PILE		4
RIVERTON LIBRARY	2001	3
SPORTS OFFICE	1999	3
ENVIRONMENTAL HEALTH	2006	2
G.C. PARKING STRUCTURE	1995	4
SALT LAKE COUNTY GOVERNMENT CENTE	1995	4
RIVERBEND GOLF COURSE	1994	4
WHEELER FARM ICE HOUSE	1979	4
CRESTWOOD POOL	1959	4
REDWOOD RECREATION CENTER	1975	4
39th SOUTH SALT PILE		4
SURPLUS WAREHOUSE	2000	3
MEADOWBROOK CLUB HOUSE	1998	3
FAIRMONT NATATORIUM	1999	3
HOLLADAY LIONS REC CENTER	2000	3
ADC	2001	3
RUTH VINE TYLER LIBRARY	1995	4
WHEELER FARM DWELLING	1898	4
WHEELER FARM EQUIPMENT BARN	1996	4
COPPERVIEW COMMUNITY CENTER	1981	4
FRIENDLY NEIGHBORHOOD CENTER	1984	4
OXBOW JAIL	1995	4
OLD MILL CLUB HOUSE	1997	3
OLD MILL GOLF COURSE RESTROOM	1997	3
MICK RILEY CLUBHOUSE	2020	0
ABRAVANEL HALL	2008	1
SHERIFF'S OFFICE BUILDING	2003	2
SPECIAL OPERATIONS / EVIDENCE BLD	2004	2
CHRISTMAS BOX HOUSE	2002	2
MEADOWBROOK GOLF STORAGE	1952	4

MEADOW BROOK GOLF COURSE	1951	4
ALTA LIBRARY	1981	4
COLUMBUS LIBRARY	1988	4
ADAPTIVE RECREATION	1981	4
LIBERTY POOL	1994	4
CENTRAL CITY COMMUNITY CENTER	1975	4
HARMAN HOME SENIOR CENTER	1988	4
OLD MILL GOLF COURSE	1997	3
TAYLORSVILLE OUTDOOR POOL	1998	3
FLEET, SANITATION, OPERATIONS	2000	3
TRANSFER STATION	1999	3
CHILDREN'S JUSTICE CENTER	1999	3
HOLLADAY LIBRARY	2019	0
GENERAL HOLM PARK	N/A	0
JAMES MADISON PARK	N/A	0
MURRAY ATHLETIC FIELD	N/A	0
TANNER PARK	N/A	0
WOODSTOCK MEADOWS PARK	N/A	0
CLARK PLANETARIUM & IMAX / GATEWAY	2008	1
DISCOVERY CENTER	2008	1
EAST MILLCREEK LIBRARY	2011	1
MOUNT OLYMPUS SENIOR CENTER	2005	2
CRIMINAL JUSTICE SERVICES	1996	4
RIVERBEND STORAGE	1994	4
I/M FACILITY	1988	4
WHITMORE LIBRARY	1988	4
WEST JORDAN OUTDOOR POOL	1992	4
OLD MILL GOLF COURSE PUMPHOUSE	1997	3
OLD MILL GOLF MAINT. BLDG.	1997	3
GENE FULLMER FITNESS & RECREATION C	1999	3
YOUTH SERVICES CENTER	2000	3
ECCLES THEATRE	2015	0
REDWOOD PARK	N/A	0
SOUTH COTTONWOOD REGIONAL PARK	N/A	0
SOUTH COUNTY PARK	N/A	0
ROSE WAGNER PERFORMING ARTS	2008	1
SOUTH MAIN PUBLIC HEALTH CENTER	2010	1
VIRIDIAN CENTER	2011	1
EAST MILL CREEK RECREATION CENTER	2012	1
ROSE PARK PUBLIC HEALTH CENTER	2005	2
TAYLORSVILLE RECREATION CENTER	2002	2
COLUMBUS SENIOR CENTER	1988	4
MURRAY HERITAGE SENIOR CENTER	1990	4
SOUTHTOWNE EXPO CENTER	2000	3

SANDY LIBRARY	2000	3
CREEKSIDE PARK	N/A	0
CRESTWOOD PARK	N/A	0
MARV JENSEN PARK	N/A	0
OLYMPUS PARK	N/A	0
REDWOOD TRAILHEAD PARK	N/A	0
RIVERVIEW PARK	N/A	0
SUGARHOUSE PARK	N/A	0
VISUAL ARTS CENTER	2008	1
PARK LIBRARY	2009	1
RIVER'S BEND NORTHWEST SENIOR CENT	2013	1
VISTA SOFTBALL COMPLEX	2007	1
MOUNTAIN VIEW CLUB HOUSE/	1971	4
SOUTH EAST CLINIC	1991	4
DRAPER OUTDOOR POOL	1996	4
TENTH EAST SENIOR CENTER	1986	4
SOUTH REDWOOD PUBLIC HEALTH CENTE	2016	0
BIG COTTONWOOD PARK	N/A	0
COPPERVIEW PARK	N/A	0
EVERGREEN PARK	N/A	0
HARMONY PARK	N/A	0
YELLOW FORK CANYON PARK	N/A	0
SHOOTING RANGE OFFICE	N/A	0
COTTONWOOD PARK SOFTBALL COMPLEX	2020	0
VALLEY REGIONAL SOFTBALL COMPLEX	2022	0
RIVERTON JUVENILE RECEIVING CENTER	Unkown	0
TAYLORSVILLE SENIOR CENTER	2003	2
SOUTH VALLEY CHILDREN'S JUSTICE	2005	2
MOUNTAIN VIEW GOLF COURSE	1968	4
KENNECOTT-MAGNA POOL	1994	4
WEST SIDE OPERATIONS		4
SOUTH MOUNTAIN GOLF COURSE	1998	3
DIMPLE DELL FITNESS AND RECREATION C	2001	3
MAGNA FITNESS & RECREATION CENTER	1999	3
SALT LAKE CITY PUBLIC HEALTH CENTER	2019	0
LIBRARY MAINTENANCE	2019	0
GEOLOGIC VIEW PARK	N/A	0
OLD MILL PARK	N/A	0
SOUTHRIDGE PARK	N/A	0
UNION PARK	N/A	0
LIBERTY SENIOR CENTER	Unkown	0
RIVERTON TRAINING CENTER	Unkown	0
J.L. SORENSON RECREATION CENTER	2011	1
SOUTH JORDAN SENIOR CENTER	2014	1

WEST JORDAN SENIOR CENTER	2007	1
EQUESTRIAN PARK INDOOR ARENA	2002	2
MOUNTAIN VIEW GOLF STORAGE	1972	4
EQUESTRIAN PARK - GRANDSTAND	1967	4
EQUESTRIAN PARK - JOCKEY BUILDING	1967	4
EQUESTRIAN PARK - MAINTENANCE BUILD	1993	4
EQUESTRIAN PARK - GENE FULLMER BOXI	1967	4
EQUESTRIAN PARK - BARNS 100-300	1972	4
EQUESTRIAN PARK - BARNS 400-600	1974	4
EQUESTRIAN PARK - RABBIT BARN	1974	4
SOLID WASTE LANDFILL	1982	4
ACORD ICE CENTER	1996	4
EQUESTRIAN PARK - BARNS 700-800	1999	3
BINGHAM CREEK LIBRARY	2019	0
DRAPER LIBRARY	2016	0
VALLEY PARK	N/A	0
WARDLE FIELDS REGIONAL PARK	N/A	0
MAGNA SALT PILE		4
SANDY SENIOR CENTER	2000	3
DECKER LAKE PARK	N/A	0
DIMPLE DELL PARK	N/A	0
FLIGHT PARK	N/A	0
ELLIS R. SHIPP PUBLIC HEALTH CENTER	2003	2
EQUESTRIAN PARK - BARN 900	2004	2
GRANITE PARK	N/A	0
SOUTH MOUNTAIN PARK	N/A	0
WHEADON FARM REGIONAL PARK	N/A	0
PARKS OPERATIONS	2018	0
HUNTER LIBRARY	2009	1
EQUESTRIAN PARK - COVERED ARENA	2013	1
KEARNS SENIOR CENTER	2005	2
PLEASANT GREEN PARK	N/A	0
EQUESTRIAN PARK - BARNS A & B	2021	0
WELBY PIT	2021	0
WADSWORTH STORAGE	2003	2
NORTHWEST RECREATION CENTER	2010	1
COUGAR PARK	N/A	0
HUNTER PARK	N/A	0
LODESTONE PARK	N/A	0
OQURRIH PARK	N/A	0
MILLCREEK ACTIVITY CENTER	2009	1
SALT PALACE	N/A	0
CAPITOL THEATER	N/A	0
KEARNS LIBRARY	N/A	0

WEST VALLEY LIBRARY	N/A	0
SOUTH JORDAN LIBRARY	N/A	0
DISTRICT ATTORNEY BUILDING	N/A	0
PUBLIC WORKS COMPLEX	N/A	0
HERRIMAN LIBRARY	N/A	0
DRAPER SENIOR CENTER	N/A	0
RIVERTON SENIOR CENTER	N/A	0
KEARNS RECREATION CENTER	1976	4
DRAPER RECREATION CENTER	2020	0
MIDVALE SENIOR CENTER	N/A	0
DISTRICT ATTORNEY BUILDING	N/A	0
MAGNA LIBRARY	N/A	0
MAGNA SENIOR CENTER	N/A	0

Post Construction (Long term) Plan



G R E A T E R S A L T L A K E
**Municipal Services
District**

Standard Operating Procedures (SOPs) for Post-Construction Stormwater Permit Requirements

I. Purpose

This SOP outlines procedures and responsibilities for meeting the post-construction and permanent BMP requirements in the Greater Salt Lake Municipal Services District (MSD) stormwater discharge permit.

The post-construction requirements include:

- A. Inspection and maintenance of public and private BMPs
- B. Certification of design of permanent BMPs

II. References

1. Greater Salt Lake Municipal Services General Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), Authorization to Discharge under the State of Utah Discharge Permit System (UPDES). UPDES Permit Number UTS0000003.
2. Municipal Services Code Chapter 17.22, Stormwater Illicit Discharges and Permit Requirements
3. Salt Lake County Public Works and Flood Control Engineering: Public Improvement Design Standards and Construction Specifications (most recent revision)

III. Definitions/Abbreviations

1. BMP: Best Management Practice
2. SLCOHD: Salt Lake County Health Department and Environment
3. UPDES: Utah Pollution Discharge Elimination System
4. EPA: Environmental Protection Agency
5. GIS: Geographic Information System
6. MS4: Municipal Separate Storm Sewer System
7. PWOPS: Public Works Operations Division
8. NOV: Notice of Violation
9. SLCOPW: Salt Lake County Public Works
10. SOP: Standard Operating Procedure
11. SWMP: Stormwater Management Plan
12. GSLMSD: Greater Salt Lake Municipal Services District
13. MSD: Municipal Services District

IV. Prerequisites

1. Training and Certification

- 1.1 Internal training for the Municipal Services District personnel on maintenance and safety procedures. Use of
- 1.2 Permits Eprocess360 data base
- 1.3 Use of City Works, including database.
- 1.4 Basic GIS functions

2. Support Functions or documents

- 2.1 Municipal Services District Permit Application
- 2.2 As-built development plans including BMP designs
- 2.3 SWMP Review Checklist
- 2.4 EProcess360 permits tracking and record-keeping system & Enforcement response plan
- 2.5

V. Standard Operating Procedures

1. As-built plans, operating agreements and BMP inspections

- 1.1 Owner submits as-built plans and certification by a professional engineer verifying that permanent BMPs have been installed per approved plans and specifications to the MSD.
- 1.2 Owner submits inspection and maintenance agreement as required by the Municipal Services to the Stormwater Construction Supervisor.
- 1.3 Development Review Inspectors & Engineer (when applicable) inspect permanent BMPs to insure compliance with as-built plans.
- 1.4 Stormwater Construction Supervisor files the plans, Maintenance agreement and Management plan in the project file.
- 1.5 Stormwater Construction Supervisor provides a copy of plans and Agreements to the staff for mapping on the Utilisync program.
- 1.6 A copy of the inspection and maintenance agreement will be maintained on the Utilisync program as part of post construction inspection program.
- 1.7 Engineering Construction Inspectors notify the Bonding Coordinator that financial security can be released.

2. Mapping and inventory

- 2.1 Flood Control Engineering staff enters BMP locations and sizing information in to the stormwater GIS for tracking.
- 2.2 MSD staff link BMP information and maintenance agreements into Utilisync.
- 2.3 MSD maintains records of inspections and agreements in Utilisync

3. **BMP Inspection and Maintenance – County Owned Facilities**
 - 3.1 PWOPs staff schedules, assigns and completes annual inspections of BMPs
 - 3.2 PWOPs staff schedules and performs maintenance of BMPs based on inspections
 - 3.3 PWOPs staff tracks and records maintenance activities.
 - 3.4 PWOPs staff keeps database of maintenance records

4. **BMP Inspection and Maintenance – Privately Owned Facilities**
 - 4.1 Municipal Services District staff sends certification forms to owners of private systems once per year
 - 4.2 Owner submits copy of annual inspection and maintenance records and a signed certification that BMPs are being inspected and maintained according to the approved maintenance agreement once per year
 - 4.3 MSD staff annually inspects a representative sample of private BMPs each year to determine compliance with maintenance agreements and completes inspection of all private BMP's a minimum of once every five years.
 - 4.4 MSD staff documents results of inspections and initiates enforcement for non-compliance in accordance with enforcement response plan
 - 4.5 MSD staff provides inspection data to the Program Manager for inclusion in Annual Report to the EPA.
 - 4.6 Municipal Services staff maintains a database of facilities and records of maintenance agreements and annual certifications

5. **Violations and Enforcement**
 - 5.1 MSD certified Inspection staff documents violations of inspection and maintenance agreements or the Owners' failure to submit annual certifications
 - 5.2 MSD Inspection staff provides documentation to the Stormwater Construction Supervisor and Program Management staff
 - 5.3 Stormwater Construction Supervisor & Program Manager prepares and issues NOVs, penalty assessments or other enforcement actions per Enforcement Response Plan

6. **third party or public reports of BMP malfunction or improper maintenance**
 - 6.1 Public or third-party reports of inadequate maintenance or malfunctions of BMPs are routed to PWOPs, Flood Control Engineering or Salt Lake County Health Department and the Stormwater Construction Supervisor.
 - 6.2 MSD Inspection staff verifies problems and, if immediate action is not required, submits documentation to the Program Manager & the Stormwater Construction Supervisor for follow-up.
 - 6.3 The Stormwater Construction Supervisor and /or Program Manager issues an NOV informing Owner(s) of their responsibilities and requiring the situation to be corrected.
 - 6.4 If Owner(s) do not comply, the Program Manager may follow up with additional enforcement as outlined in the Enforcement Action Plan.

7. **Abatement of violations**
 - 7.1 MSD Inspections and PWOPs staff responds to BMP maintenance problems or malfunctions that require immediate resolution because of public safety or welfare.
 - 7.2 County staff abates violation using County resources or contract services.
 - 7.3 County staff records cost of abatement and submits to either the Salt Lake County District Attorney's Office or the Greater Salt Lake Municipal Services District Attorney for reimbursement.
 - 7.4 The Program Manager and /or the Stormwater Construction Supervisor will issue NOVs and penalty assessments, to the Salt Lake District Attorney's or the Greater Salt Lake Municipal Services District Attorneys Office for collection.



Post Construction Storm Water Management Plan

Commercial Best Management Practices (BMPs) are those measures and/or practices to be maintained by the property owner or operator to prevent illicit discharges, pollutants and other contaminants from entering the MSD storm water system. These measures and practices are to be implemented upon completion of construction activities, to be conducted and maintained in perpetuity and will typically address the following:

- * Inspection and cleaning of oil/water separator and catch basin - Oil/water separator and catch basin are to be inspected monthly and oil/water separator is to be cleaned at least every six months.
- * Parking area cleaning and sweeping - Parking lots are to be cleaned and swept at least quarterly to prevent pollutants from entering the storm drain system.
- * Waste management and disposal- Wastes will be limited to standard trash and recycling materials that will be disposed of in covered standard waste bins and disposed of by a licensed waste removal company.
- * Landscape maintenance - Owner is responsible for general landscape maintenance. The landscape maintenance will consist primarily of grooming & watering.
- * Employee training - Property owner is to provide or require training in storm water quality management and required BMPs. Employee training in storm water quality management and required BMPs shall be integrated with any other existing employee training programs.
- * Record of inspection, maintenance and training activities - These shall be kept on site and made available for review by Municipal Services and/or State Officials upon request. An inspection of the site will be conducted by the MSD annually, or more frequently as may be deemed necessary.

The objectives of the plan are to:

1. Control soil erosion
2. Control discharge of sediment into storm drainage facilities or off-site
3. Prevent illicit discharge into on-site soils, into storm drainage facilities or offsite

If the objectives of the plan are not being met, the site operator or owner shall make adjustments to the plan as needed to accomplish its purposes.



SMP OPERATION AND MAINTENANCE INSPECTION REPORT
 POST CONSTRUCTION PRIVATE STORMWATER BMP MAINTENANCE

Site Name:		Date of Evaluation:					
Site Address:							
<small>Facility Contact Information</small>							
	NAME and MAILING ADDRESS			Phone	E-MAIL ADDRESS		
SITE CONTACT:							
INSPECTOR CONTACT:							
BUSINESS TYPE:		INSTITUTIONAL	COMMERCIAL	INDUSTRIAL	OTHER _____		
Circle Business Type							
Are SOP's for Stormwater Post Construction Inspections implemented and available for review?		YES NO					
Circle Answer							
Orifice Required for site	YES	NO	Orifice Size:	Hooded outlet cover (if not required for site)	YES NO		
Circle Answer							
Item Inspected	Checked		Maintenance Req'd?		Is there excessive accumulation of debris or sediment?	Observations and Remarks	Deadline for corrective action
	Yes	No	Yes	No			
1. Dumping Evidence							
2. Spill Evidence							
3. General Site Exposure							
4. Other Pollution Sources							
5. Stormwater Storage condition and capacity (detention/retention ponds)							
6. Inlets and catch basins							
7. Conveyance System							
8. Manholes							
9. Parking							
10. Waste Collection							
11. Landscaping							
12. Pre-Treatment devices							
13. Sumps							
14. Flow Control devices							
15. Site Specific SOP Items							
16. Other							
Notes:							
Print Name:				Date:			
Signature:				Title or Position:			

80th percentile Spreadsheet for MSD areas

Data was Calculated by Robert Thompson for various elevations of 4 areas in the MSD:

1. *Brighton Cabin*
2. *Mt Dell*
3. *White City*
4. *Magna*

The 70th percentile was 0.46 Inches of rain

The 80th percentile was 0.56 inches of rain

The 90th percentile was 0.75 inches of rain

It was decided that averaged with all areas, 0.55 inches of rain, would correctly capture the 80th percentile storm for all MSD areas.

BMP Inventory

Salt Lake County UPDES Permit UTS000001 BMP Inventory			
ID	Facility Name	BMPs	Post Construction
1	Midvale Public Works Complex Operations	See SWPPP	1 Oil/Water Separator, detention pond
2	Midvale Public Works Complex Plant	See SWPPP	1 Oil/Water Separator, detention pond
3	Midvale Public Works Complex Sanitation	See SWPPP	2 Oil/Water Separator, detention pond
4	Park Operations West Jordan	See SWPPP	2 Oil/Water Separator
5	Solid Waste Management (Landfill Salt Lake City)	See SWPPP	Detention Pond
6	Thatcher Station South Salt Lake City	See SWPPP	Oil/Water Separator, Detention Pond
Salt Lake City			
	Government Center Parking Structure	Full K11, good Housekeeping, sanitary e	N/A
	Salt Lake County Government Center	SOPs, Good Housekeeping	N/A
	Advanced Hall	SOPs, Good Housekeeping	N/A
	Rose Wagner Performing Arts	SOPs, Good Housekeeping	N/A
	Grand Theater	SOPs, Good Housekeeping	N/A
	Clark Pinagadum	SOPs, Good Housekeeping	N/A
	Historian Center	SOPs, Good Housekeeping	N/A
	Salt Palace Convention Center	Secondary containment, Good Housek	2 Oil/Water Separator
	Liberty Park Pool	SOPs, Good Housekeeping	N/A
	Swanchose Park	SOPs, Good Housekeeping	N/A
	Temper Park	SOPs, Good Housekeeping	N/A
	Northwest Recreation Center	SOPs, Good Housekeeping	N/A
	Central City Recreation Center	SOPs, Good Housekeeping	N/A
	Edmond Aquatics Center	SOPs, Good Housekeeping	N/A
	Salt Lake City Public Health Center	SOPs, Good Housekeeping	N/A
	Rosa Park Public Health Center	SOPs, Good Housekeeping	N/A
	Liberty Senior Center	SOPs, Good Housekeeping	N/A
	10th East Senior Center	SOPs, Good Housekeeping	N/A
	Sunday Anderson Westside Senior Center	SOPs, Good Housekeeping	N/A
	Franklin Neighborhood Senior Center	SOPs, Good Housekeeping	N/A
	Children's Justice Center	SOPs, Good Housekeeping	N/A
	Salt Lake County Probation Services	SOPs, Good Housekeeping	N/A
South Salt Lake City			
	James Madison Park	SOPs, Good Housekeeping	N/A
	James Horn Park	SOPs, Good Housekeeping	N/A
	Hemons Park	SOPs, Good Housekeeping	N/A
	Columbus Library	SOPs, Good Housekeeping	N/A
	South Main Health Clinic	SOPs, Good Housekeeping	N/A
	Columbus Senior Center	SOPs, Good Housekeeping	N/A
	Youth Services Center	SOPs, Good Housekeeping	N/A
	Chickadee Boy House	SOPs, Good Housekeeping	N/A
	Special Operations/Evidence Building	SOPs, Good Housekeeping	N/A
	ADC	SOPs, Good Housekeeping	Detention pond
	Shedden Office Building	SOPs, Good Housekeeping	N/A
	Quincy Jail	SOPs, Good Housekeeping	N/A
Woods			
	Woods Fitness & Recreation Center	SOPs, Good Housekeeping	N/A
	Pleasant Green Park	SOPs, Good Housekeeping	N/A
	Woods Pool	SOPs, Good Housekeeping	N/A
	Hercules Park	SOPs, Good Housekeeping	N/A
	Woods Library	SOPs, Good Housekeeping	Detention Basin
	Woods Senior Center	SOPs, Good Housekeeping	N/A
	Woods Park Club	SOPs, Good Housekeeping	N/A
West Valley City			
	BLCO Records Management and Archives	SOPs, Good Housekeeping	N/A
	Accord Ice Center	SOPs, Good Housekeeping	N/A
	Redwood Recreation Center	SOPs, Good Housekeeping	Spout
	Redwood Park	SOPs, Good Housekeeping	N/A
	Darker Lake Park	SOPs, Good Housekeeping	N/A
	Winter Park	SOPs, Good Housekeeping	N/A
	West Valley Library	SOPs, Good Housekeeping	N/A
	Hunter Library	SOPs, Good Housekeeping	N/A
	Ellis B. Stone Public Health Center	SOPs, Good Housekeeping	N/A
	Hammen Home Senior Center	SOPs, Good Housekeeping	N/A
Taylorsville			
	Maplebrook Golf Course	SOPs, Good Housekeeping	N/A
	Millers Park	SOPs, Good Housekeeping	N/A
	Valley Regional Park	SOPs, Good Housekeeping	N/A
	Southridge Park	SOPs, Good Housekeeping	N/A
	Taylorsville Recreation Center	SOPs, Good Housekeeping	N/A
	Taylorsville Outdoor Pool	SOPs, Good Housekeeping	N/A
	Walt Scobell Complex	SOPs, Good Housekeeping	N/A
	Valley Regional Softball Complex	SOPs, Good Housekeeping	N/A
	Taylorsville Library	SOPs, Good Housekeeping	N/A
	Taylorsville Senior Center	SOPs, Good Housekeeping	N/A

