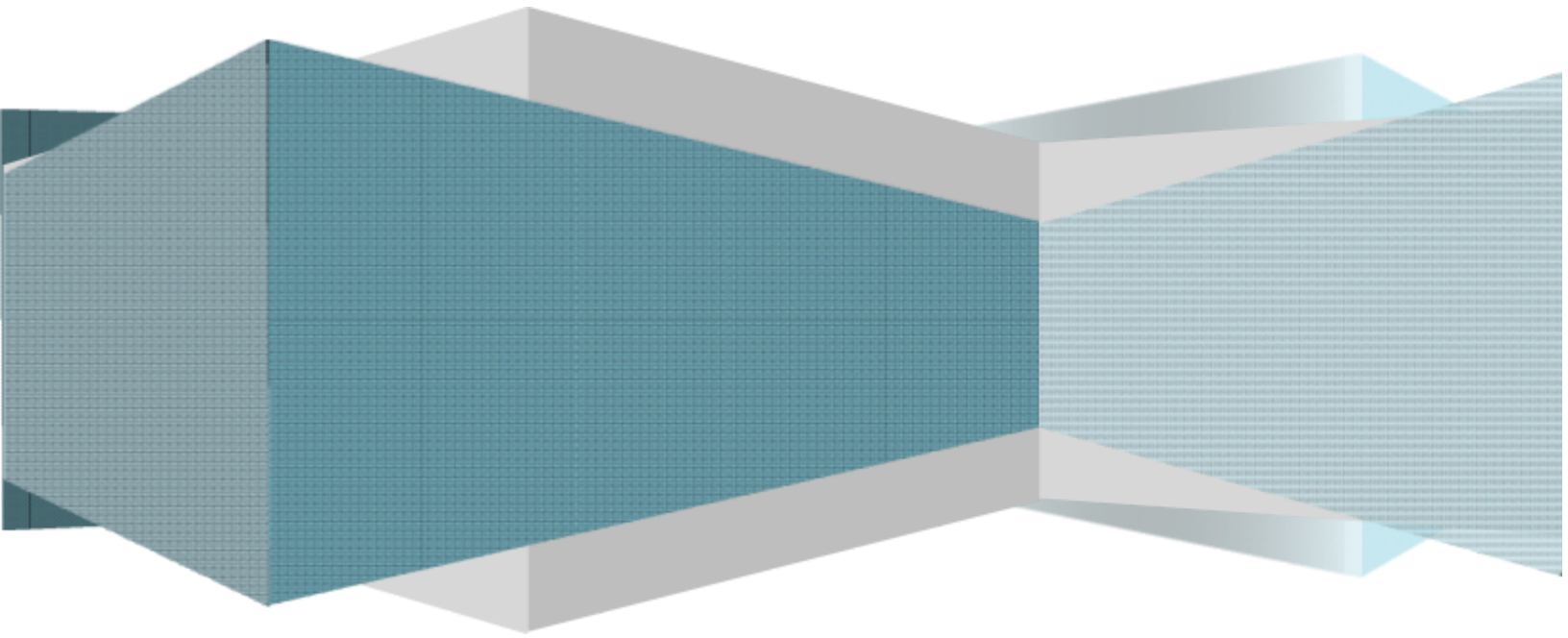
City of Orem

Storm Water Management Plan

2026 - 2031



CITY OF OREM
Permit No. UTR090014

CITY OF OREM
STORM WATER MANAGEMENT PLAN
For the permit period of May 12, 2026 – May 11, 2031

Submitted to:

State of Utah
Department of Environmental Quality
Division of Water Quality

Submitted by:

City of Orem, Public Works Department

Revised
November 9, 2026

Reviewed
November 9, 2026

SIGNATORY PAGE

Governmental Entity Name: City of Orem **Permit number:** UTR090014

Mailing Address: 56 North State Street **City:** Orem **State:** Utah **Zip Code**: 84057

Storm Water Management Plan Responsible Person(s):

Name: Chris Tschirki **Title:** Public Works Director
Telephone Number: 801-229-7501

Name: Reed Price **Title:** Assistant Public Works Director
Telephone Number: 801-229-7530

Name: Chelsea Lindsey **Title:** Storm Water Manager
Telephone Number: 801-229-7545

Certification

"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 gather and evaluate 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, I certify that 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."

Print Name: _____ Title:_____

Signature: _____ Date:_____

ACKNOWLEDGEMENT

The creation of the Storm Water Management Plan would not have been possible without the support of many people. We take this opportunity to express gratitude to those who have been instrumental in the completion of this project. In appreciation for the many hours of hard work and dedication in assembling this Plan, we recognize the following people:

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Reed Price	Assistant Public Works Director
Neal Winterton	Water Resources Division Manager
Sam Kelly	City Engineer
Stan Orme	Streets/Storm Water Section Manager
Cody Steggell	Streets Division Manager
Rick Sabey	Storm Water Division Manager
Ryan Johnson	Storm Water Program Manager
Steve Johnson	Storm Water GIS Lead

Additionally, we would like to recognize current staff who review and update the SWMP every year to meet current Permit requirements. Thank you for your dedication to the accuracy and successful implementation of the SWMP.

Chelsea Lindsey	Storm Water Manager
Andy Peterson	Public Utilities Field Supervisor - Storm Water
Ryan Casper	SWPPP Program Coordinator
Shawna Redford	LTSWMP Program Coordinator
Steve Johnson	Senior GIS Analyst - Storm Water

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STORM WATER MANAGEMENT PLAN OVERVIEW

Last Reviewed: August 10, 2026

PURPOSE

This document presents the City of Orem's Storm Water Management Plan (SWMP). The City of Orem originally applied for coverage in 2003 and was granted permit number UTR090014. This management plan is a revision meant to satisfy the requirements of the State for the period of 2026-2031. The plan has been updated to limit the discharge of pollutants to the City of Orem's Storm Water System. This Plan was prepared to guide the City in planning, funding, and implementing a comprehensive program for addressing current and future regulatory and policy requirements for managing storm water runoff.

The purpose of the Storm Water Management Plan is to comprehensively address the many different, but related regulations, plans, programs, and policies that affect urban storm water runoff. The goal of the SWMP is to provide the City of Orem the basis for establishing effective rules, regulations, and guidelines that will reduce the potential for storm water damage to the environment, to the citizens of Orem, to public and private property, and to protect human, animal, and aquatic life.

Storm water regulations developed by the Utah Division of Water Quality require the operator of a regulated MS4 community to develop a program that:

- Prevents or reduces the amount of storm water pollution generated by municipal operations and conveyed into receiving waters by identifying and implementing appropriate control measures and setting measurable goals.
- Train employees on how to incorporate pollution prevention and good housekeeping techniques into municipal operations.

SWMP COORDINATION

Agency:	City of Orem, Public Works Department
Contact:	Mr. Christopher R. Tschirki, Public Works Executive Director
UPDES Number:	UTR090014

STAFFING AND RESOURCE ALLOCATIONS

Responsibility for implementation of the storm water management program is divided between different groups and organizations within the City of Orem. The group responsible for each task is stated in each section of this document.

Permit Requirement 2.2.2.2 MS4 Location Description and Map

The City of Orem (City) has a population of approximately 96,000 and encompasses approximately 18.5 square miles. The City is located in the center of Utah Valley, 40 miles south of Salt Lake City. It is surrounded by Provo to the south and east, Vineyard to the west, and Lindon to the north (see Figure 1-1). The City is situated between the Wasatch Mountains, the Provo River, and Utah Lake

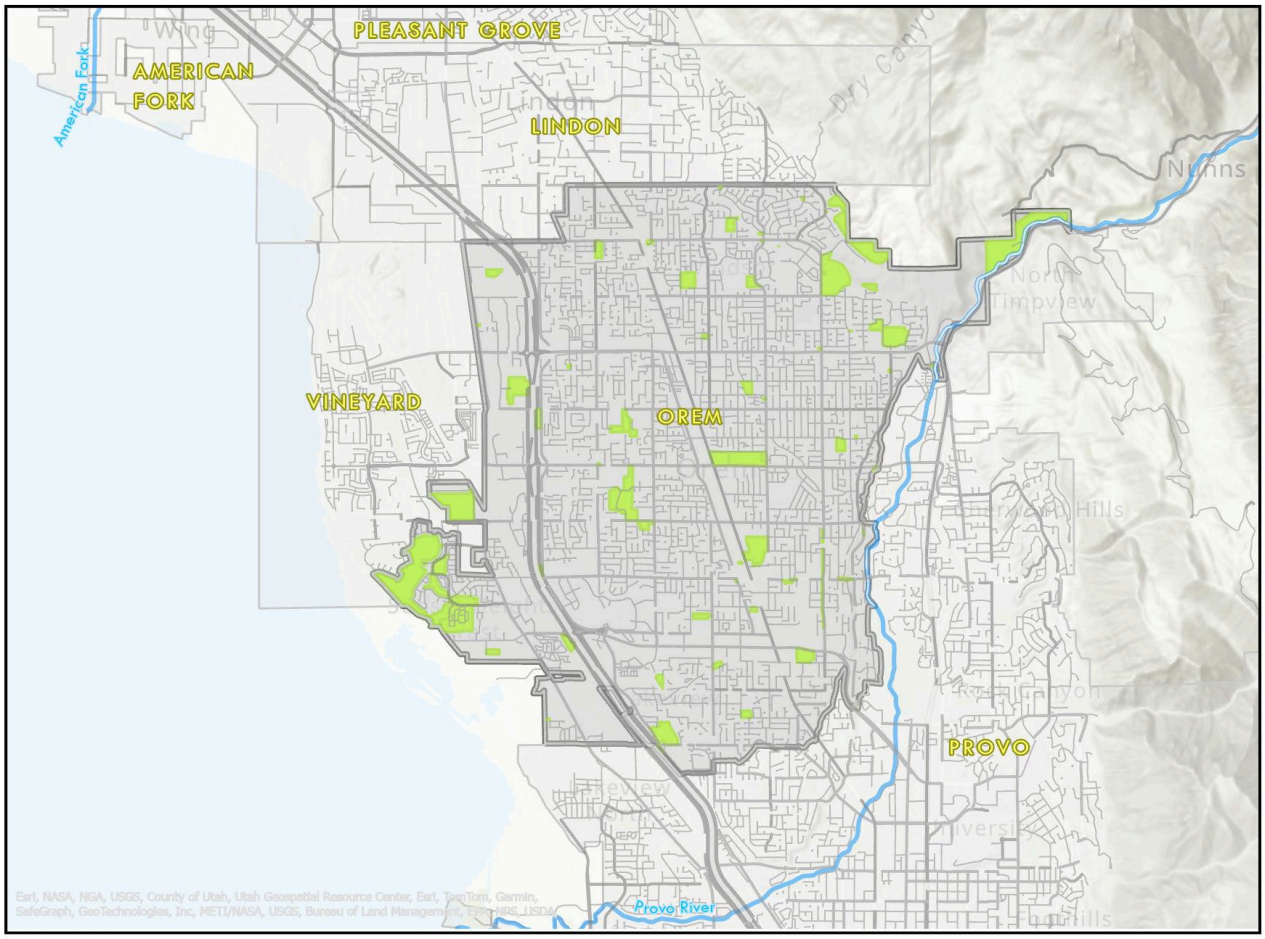


Figure 1-1: Map of Orem's location

ProtectingWater Quality - Permit Requirement 3.1, 3.3

The City operates and maintains a municipal storm water system that consists of thousands of sumps (Class V injection wells), several miles of pipe, and numerous detention basins. With these assets, the City has some unique challenges as it addresses its storm drainage system. Most of the City is located on highly permeable sands and gravels that comprise the Orem bench. The City has taken advantage of the highly permeable soils for management of storm drainage and relies heavily upon sumps.

There are currently 4,395 sumps within the City, of which 2,168 are located on public property. Runoff is directed into these sumps, which discharge directly to the underlying soils. Even though the use of sumps is an acceptable method for runoff disposal, untreated storm drainage runoff can eventually reach the underlying groundwater aquifers, which supplies the culinary water to the City and a number of other communities in Northern Utah County.

Concern about the impact of sumps on groundwater quality, long-term maintenance of sumps, and

areas with existing storm drainage problems has motivated the City to evaluate current storm drainage practices and to create a storm water management plan for the City.

STORM WATER POLLUTANT SOURCES AND ENVIRONMENTAL IMPACTS

The table below outlines the most common potential pollutants that any MS4 could generate. These pollutants can harm human health, degrade water quality, damage aquatic habitat, and seriously impair ecosystem functions.

Pollutant	Common Source	Impacts on Water Quality
Sediment	Construction sites, vehicle/boat washing, agricultural sites	Sediment is a common component of storm water. Sediment can be detrimental to aquatic habitat for fish and plants; it can facilitate transportation of attached oils, nutrients and other chemical contamination; and it can increase flooding. Sediment can transport other pollutants that are attached to it including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of total suspended solids (TSS), a common water quality analytical parameter.
Nutrients (Phosphorus, Nitrogen Potassium, Ammonia)	Fertilizers from agricultural operations, lawns and gardens, livestock and pet waste, decaying grass and leaves, sewer overflows and leaks	Nutrients are often found in storm water. These nutrients can result in excessive or accelerated growth of harmful algal blooms, reduced oxygen in the water, changes in water chemistry and pH. In addition, un-ionized ammonia (one of the nitrogen forms) can be toxic to fish.
Hydrocarbons (Petroleum Products, Benzene, Toluene, Ethyl benzene, Xylene)	Vehicle and equipment fluid leaks, engine emissions, pesticides, equipment cleaning, leaking fuel storage containers, fuel spills, parking lot runoff	Oil and grease include a wide array of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Some of these pollutants are toxic to humans and wildlife at very low levels.
Heavy Metals	Vehicle brake and equipment wear, engine emissions, parking lot runoff, batteries, paint and wood preservatives, fuels and fuel additives, pesticides, cleaning agents	Metals including lead, zinc, cadmium, copper, chromium and nickel are commonly found in storm water. Metals are of concern, as they are toxic to aquatic organisms, can bioaccumulate, and have the potential to contaminate drinking water supplies.
Toxic Chemicals (Chlorides)	Pesticides, herbicides, dioxins, PCBs, industrial chemical spills and leaks, deicers, solvents	Pesticides have been repeatedly detected in storm water at toxic levels, even when pesticides have been applied in accordance with label instructions. As pesticide use has increased, so too have concerns about the adverse effect of pesticides on the environment and human health.

Debris/Litter/ Trash	Improper solid waste storage and disposal, abandoned equipment, human negligence	Typically resulting from an urban environment, industrial sites and construction sites, trash and floatables create an aesthetic eye sore in waterways. Risk of toxicity from product decay. Risk of aquatic animal entrapment or ingestion and death.
Pathogens (Bacteria)	Livestock, human, and pet waste, sewer overflows and leaks, septic systems	Bacteria and viruses are common contaminants of storm water. There are human health risks due to disease and the pathogens can be toxic to aquatic life.

The following table lists some lesser-known pollutants that can be found in most urban storm water runoff, yet are harmful to the environment.

Pollutant	Risk to the Environment	Source
Chlorine	Skin and eye irritant, respiratory risk	Used as an additive to water to control microbes. Used in swimming pools, drinking water disinfection, etc.
Arsenic	Skin damage or problems with circulatory systems, and may have increased risk of cancer	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes.
Beryllium	Lung disease and increased risk of cancer	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	Kidney damage	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paint.
2, 4-D	Kidney, liver, or adrenal gland problems	Runoff from herbicide used on row crops.
PAHs (Polycyclic Aromatic Hydrocarbons)	Potential risk to aquatic life	Sources of PAHs are numerous and include municipal and industrial effluents and discharges. Combustion products from transportation, power generation, and cooking processes are significant man made sources. Other potential sources include manufactured gas plants, wood treatment facilities, and smelters as well as from coal-tar- based pavement sealants.

To reduce these pollutants the following six minimum control measures are used: (1) public education and outreach, (2) public participation and involvement, (3) illicit discharge detection and elimination, (4) construction site runoff control, (5) long-term storm water management in new development and redevelopment (post-construction storm water management), and (6) pollution prevention and good housekeeping. Implementation of these 6 control measures is presented in subsequent chapters and includes Standard Operating Procedures (SOPs) and Best Management Practices (BMPs). The SOPs and BMPs are intended to meet the current needs of the City and will be changed as needed.

Permit Requirement 3.1 Discharge to a 303(d) Waterbody

Under Section 3.1 of the Small MS4 General UPDES Permit, Permit Number UTR090000, it states, "Permittees must determine whether storm water discharge from any part of the MS4 contributes to a 303(d) listed waterbody."

The City of Orem currently discharges into three water bodies that are listed in the Utah 303(d) list.

- Utah Lake is listed as impaired for E. coli, Harmful Algal Blooms, Eutrophication, Total Dissolved Solids (TDS), Total Phosphorus, and PCB in fish tissue. A draft TMDL was published in 2007, however the TMDL has not been adopted. Once adopted, the City would implement regulations necessary to be in compliance with these standards.

- Provo River has been designated as impaired for Benthic Invertebrate Assessment, Dissolved Oxygen, and Temperature. This is a condition that requires the monitoring of the health data of benthic macroinvertebrates, fish and periphyton. The State has not determined a cause for concern in the bioassessment, but the City will implement any required measures if a TMDL is published for this stretch of the Provo River.

- Powell Slough, has been designated as impaired for Dissolved Oxygen. This condition would be improved by measures that encourage water movement and lessens stagnation. There is no TMDL that has been adopted for this water body.

Permit Requirement 3.3 Nitrogen and Phosphorus Reduction

Developers must design BMPs to treat storm water with a goal of reducing pollutants in the receiving water bodies. BMPs must address removal of nitrogen and phosphorus. Proposed BMPs will be evaluated by City staff to verify selected BMPs are addressing targeted pollutant removal.

OREM Storm Water Management Plan Measurable Goals Matrix	
Year Originally Executed: 2019	
Last Reviewed: August 10, 2026	
Permit Part 4.1.3.1. The measurable goals for each of the BMPs shall include, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the actions.	
Description: The City of Orem's Storm Water Program BMPs are fully implemented and operating according to the language found in our Storm Water Management Plan (SWMP). The following list contains the goals and frequency of evaluation in order to ensure effectivity.	
Goal:	**Frequency of Evaluation:**
City Ordinance Evaluation	Every time the permit is renewed or changed
Review of MCM 1 & 2 and All Measurable Goals, Practices, Procedures and Forms within those sections	Annually: from January 1 - March 1
Review of MCM 3 & 4 and All Measurable Goals, Practices, Procedures and Forms within those sections	Annually: from March 1 - May 1
Review of MCM 5 & 6 and All Measurable Goals, Practices, Procedures and Forms within those sections	Annually: from May 1 - August 1
Review of the Appendices and All Measurable Goals, Practices, Procedures and Forms within them	Annually: from August 1- September 1
Annual Storm Water Program Report	Annually: Send to the state by October 1
Inspect Priority IDDE Areas	Annually: inspections recorded by October 1
Gather and File All Biennial Inspection Reports	Annually: These shall be collected by September 29
Complete City Employee Storm Water Training	Annually: from January 1 - March 1

Chapter 1

MCM 1: Public Education and Outreach on Storm Water

The permit requirements for Public Education and Outreach on Storm Water can be found in Section 4.2.1 of the permit. This section also incorporates tasks intended to meet the Nitrogen and Phosphorus Reduction section of the permit found in Section 3.3. A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements:

1. The MS4 must promote behavior change of the public to reduce water quality impacts associated with pollutants in storm water runoff and illicit discharges. This is a multimedia approach targeted to specific audiences. The audiences are: (1) general public, (2) institutions, industrial and commercial facilities, (3) engineers, construction contractors, developers, development review staff and land use planners; pertinent parties. (4.2.1)
2. Target specific pollutants and pollutant sources and provide information which describes their potential impact to designated uses of the receiving waters. (4.2.1.1)
3. Provide methods for avoiding, minimizing, and reducing adverse impacts of storm water discharges.
4. Provide information on the actions individuals can take to improve water quality, including participation in local environmental stewardship activities.
5. Provide and document information given to the audiences.
    a. document outreach incidents with dates, topics, and number of people educated for each component.
    b. define specific messages for each audience
    c. provide rationale for any additional education that is most relevant to the community
    d. identify methods used to evaluate the effectiveness of the messages
    e. demonstrate that the defined goal has been achieved
    f. define methods to evaluate objective changes in behavior and knowledge.

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section:

PEO-1: Education and Outreach for General Public
PEO-2: Education and Outreach for Institutions, and Industrial and Commercial Facilities
PEO-3: Education and Outreach for Engineers, Construction Contractors, Developers, Development Review Staff and Land Use Planners
PEO-4: Education and Outreach for City Employees

PEO-1: Public Education and Outreach

Year Originally Executed: 2000

Last Reviewed: June 2, 2026

Reference Regulation: 3.3; 4.2.1; 4.2.1.1; 4.2.1.2; 4.2.1.2.1;

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audience: General Public

Description: The City uses several outlets to provide education and outreach to the general public. Among these are:

- *WaterWatch Webpage*: This informational webpage features articles that are generally targeted at residents living in the City of Orem. Article topics include target pollutant reduction and potential impacts the public can have on storm water quality. New articles as well as past publications are available online as well as a link provided in resident's paperless utility bill email notification. Additionally, WaterWatch is publicized on the City's social media pages.
- *Information Booths at Community Events:* The City has participated in several community events and plans to do so in the future. Most notably, the City has set up a booth at its annual Oremfest. Booths at these events have included two storm water education models. We also distribute literature and promotional items that discuss storm water quality issues and feature our storm water hotline number.
- *Storm Drain Markers:* The City has marked all public storm drain inlets with the label "Do not dump, drains to drinking water".. This labeling helps educate the public on the repercussions of anything except storm water entering the inlet.
- *Social Media:* The City often uses Facebook, Instagram, X, and YouTube to maintain a presence in social media. We use these outlets to publicize Utah County's household hazardous waste collection days and advertise local environmental stewardship activities. Social media is also the platform used to educate the public once a month about the topics listed below. The monthly posts also direct them to the full version of the education topic on the WaterWatch webpage.
- *Utah County Storm Water Coalition (UCSC) School Education Program*: The UCSC has three instructors who educate elementary school students in Utah County on storm water quality and management. As a participating member of the Coalition, we use this resource to educate students in our city. The City supports this effort by providing financial support and oversight in the form of membership on the Coalition's Education Subcommittee.
- *Storm Water Hotline:* This telephone number (801-229-7577) is publicized in most storm water educational materials and on City vehicles. This resource is used as an opportunity to educate both those that report problems and those that are investigated because of reports. Further details can be found in MCM 3.
- *Door Hangers:* When residents are reported as having engaged in behaviors that are potentially harmful to water quality, staff use informational door hangers to inform

residents of the issue and the solution to the issue. These can lead to actions under the IDDE program if not addressed.

- *City Website:* Many storm water topics (listed below) are covered on the storm water webpage hosted at orem.gov/stormwater. Associated links to design manuals, Orem's SWMP, Waterwatch, are all included on the storm water webpage.

These outlets are selected to reach a broad and diverse audience with messages that are meant to educate and inform the public about the potential for detrimental impacts of contaminated storm water discharges into public waters.

Purpose and Benefit: These outlets allow for discussion of many common activities that affect storm water runoff quality throughout the City. The topics specifically addressed include at minimum:

- benefits of onsite infiltration of storm water
- maintenance of septic systems
- outdoor activities such as lawn care including use of pesticides, herbicides, and fertilizers (spring of each year)
- on-site infiltration of storm water
- automotive repairs
- residential car-washing
- disposal of swimming pool water (summer of each year)
- management of pet waste
- building and equipment maintenance
- use of salt and de-icing materials (fall of each year)
- proper storage of materials
- proper solid waste management (dumpsters)
- stockpile management, especially as it relates to landscaping activities (spring of each year)
- emphasis will be given to the hazards of illicit discharges (in April to coincide with County collection day)

Measure of Success: The city tracks phone calls, emails and social media interactions received related to topics discussed in outreach efforts. The City keeps a record of general public outreach efforts.

This task will be evaluated annually according to the Storm Water Management Plan Measurable Goals Matrix to ensure that messages are focused and effective for the general public. It will also be reviewed to see how well it is helping to achieve behavioral changes that lead to better water quality.

Responsible Staff: LTSWMP Program Coordinator, Management Services

Funding: Storm Water Utility

Standard Operating Procedures: Storm Water Education SOP

Supporting Documents:

The Record of Public Outreach Efforts google sheets log is available upon request

Social media posts can be found on the City's X, Instagram, and Facebook accounts using "#OremStormwater". The city's website hosts WaterWatch and other educational resources.

Sample publications such as door hangers and brochures are available upon request.

PEO-2: Education and Outreach for Institutions, Industrial, and Commercial Facilities

Year Originally Executed: 1996

Last Reviewed: June 2, 2026

Reference Regulation: 3.3; 4.2.1; 4.2.1.1; 4.2.1.3; 4.2.1.3.1.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: Institutions, Industrial, and Commercial Facilities

Description: The City uses three main activities to promote awareness of water quality issues related to storm water for this audience.

Online Publications: The City has utilized educational materials provided by the EPA that target specific pollutants from specific industries and has posted those onto the City's website. The specific topics were chosen based on common pollutants found in Orem that have significant potential for harmful effects to storm water quality. This educational material is accessible on the City website on the Economic Development page, Business Licensing page, and/or the Storm Water page. Additionally, the City plans to send out a link or QR code with relevant storm water education directed at specific industries when a business license is granted.

The following topics will be reviewed for inclusion in publications and presentations to commercial and industrial entities. This list is not all-inclusive:

- Proper lawn maintenance including proper use of pesticides, herbicides and fertilizer (spring of each year)
- Benefits of appropriate on-site infiltration of storm water
- Building and equipment maintenance including proper management of waste water
- Proper use and maintenance of grease traps
- Use and storage of salt or other deicing materials (fall of each year)
- Proper storage of materials to emphasize pollution prevention
- Proper management of waste materials and dumpsters
- Proper management of parking lot surfaces
- Proper reporting of spills
- Emphasis will be given to the hazards of illicit discharges
- Provide/Promote services for collection of household hazardous waste (April of each year to coincide with County collection day)

Social Media: The City will use social media outlets such as Facebook, X, and YouTube to interact with Institutions, Industrial, and Commercial Facilities in order to encourage protection of storm water quality.

Industrial Facility Inspections: The City will help monitor those businesses that are or should be subject to a state Multi-Sector General Permit. If a facility appears to be out of compliance with

the permit, the business owner will be notified and educated on the requirements that must be met in order to protect storm water quality.

Storm Water Webinar for Businesses Recording: UCSWC and ULA created an educational series for this audience group which is available online and posted on the City's storm water webpage. The link to this video series will be sent to the audience group once per year using contacts provided by Orem's Business Licensing Division.

Purpose and Benefit: Institutions, Industrial, and Commercial Facilities often have a higher potential risk to water quality because of the chemicals used and stored on-site as well as manufacturing activities that can come in contact with storm water. Reminding business owners and institutional operators about storm water is critical, as it may be low on their list of priorities.

Measure of Success: This task will be evaluated annually according to the Storm Water Management Plan Measurable Goals Matrix to ensure that messages are focused and effective for Institutions, Industrial, and Commercial Facilities. It will also be reviewed to see how well it is helping to achieve behavioral changes that lead to better water quality. Decreased IDDE calls would be a numerical indicator of successful education.

Responsible Staff: LTSWMP Program Coordinator, Management Services

Funding: Storm Water Utility

Standard Operating Procedures: Storm Water Education SOP

Supporting Documents:

Business Owner Resources
New business storm water education media available upon request.

PEO-3: Education and Outreach for Engineers, Construction Contractors, Developers, Development Review Staff and Land Use Planners

Year Originally Executed: 1997

Last Reviewed: June 2, 2026

Reference Regulation: 3.3; 4.2.1; 4.2.1.1; 4.2.1.4; 4.2.4.5.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: Engineers, Construction Contractors, Developers, Development Review Staff and Land Use Planners

Description: Information about the principles of Low Impact Development as well as the development of SWPPPs is currently provided by the Utah County Storm Water Coalition. The City additionally has a "Construction SWPPP" page on the City storm water webpage with Orem specific education materials for this group.

Online Education: The City has posted an education packet on mitigating storm water from roof drains on the storm water page of the City website. Additionally, the City in collaboration with Utah Lake Authority has posted online training available throughout the year that support the goals of the City. Storm water design, LID practices, BMP implementation, and SWPPP compliance are all addressed within orem.gov/stormwater.

Purpose and Benefit: Annual training keeps engineers, construction contractors, and developers up to date on critical issues associated with storm water quality. Providing more education specific to Orem's storm water standards will increase efficiency for all parties involved in the development or redevelopment process.

Measure of Success: Report attendance at training. Analyze infractions to see if there is a lessening of issues.

This task will be evaluated annually to ensure that messages are focused and effective for the Engineers, Construction Contractors, Developers, Development Review Staff and Land Use Planners. It will also be reviewed to see how well it is helping to achieve behavioral changes that lead to better water quality.

Responsible Staff: Storm Water Manager and SWPPP Program Coordinator

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

Training Attendance Logs (Available upon request)

Roof Drain Education Document

Education and training packets available online or by request.

PEO-4: Education and Outreach for City Employees

Year Originally Executed: 2001

Last Reviewed: March 17, 2026

Reference Regulation: 3.3; 4.2.1; 4.2.1.1.; 4.2.3.6.; 4.2.4.5.; 4.2.5.6.; 4.2.6.10.; 4.2.6.10.1.; 4.2.6.10.2.; 4.2.6.10.3.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: City Employees

Description: The City trains its employees about storm water quality. Employees receive different training based on their contact or potential contact with issues that may affect water quality. Here is a summary of City Employees and the topics they receive training on:

All Employees:

- Recognizing and reporting IDDE situations

Public Works:

- Public Works Facilities SWPPP
- Proper Landscape Maintenance
- Proper Storage, Transport, and Disposal of Chemicals
- Spill and Dumping Response Procedures
- Proper Concrete Disposal
- Proper Snow Removal and Deicing SOPs
- Cleaning, Washing, Painting and Maintenance Activity SOPs
- Vehicle and Equipment Maintenance and Storage SOP

Fleet:

- Vehicle and Equipment Maintenance and Storage SOP

Traffic:

- Street Marking SOPs

Water:

- Sediment and Erosion Control

Water Reclamation:

- Training is dictated by separate UPDES permit

Parks:

- City Parks and Open Space SOP
- Fertilizer, Pesticide, and Herbicide Application and Storage SOP

- Sediment and Erosion Control
- Material Storage SOP
- Pet Waste SOP
- Festival and Event Cleanup

Streets:

- Street and Road Maintenance and Repair SOP
- Proper Maintenance of Parking Lot Surfaces
- Festival and Event Cleanup

Storm Water:

- Benefits of On-Site Infiltration
- Catch Basin Cleaning and Maintenance SOP
- Detention Cleaning and Maintenance SOP
- Green Infrastructure Practices
- MS4 Maintenance SOP
- Video Inspection/CCTV Camera SOP
- Low Impact Development (LID) Practices
- Construction Oversight Inspection
- SWPPP Review
- Site Plan Review including preferred BMPs
- Enforcement Procedures
- Long Term Storm Water Management
- Post Construction Inspection
- Soil and Erosion Control
- Street Sweeping Dewatering and Disposal

Development Services:

- Low Impact Development (LID) Practices
- Green Infrastructure Practices
- Storm Water Installation Inspections
- SWPPP Review
- Site Plan Review
- Post Construction Review
- Long-Term Storm Water Management

Public Safety (Fire and Police):

- Spill and Dumping Response Procedures

Storm water staff are trained upon hire and before commencing duties. All of this training is repeated at least annually. Employees are required to participate in this training or a similar training. It will be supplemented for those that have a change of duties relating to storm water related tasks.

Purpose and Benefit: Training is the key to an even approach to storm water management. It helps keep everyone on the same page and provides awareness of issues that may not be at the top of the priority list.

Measure of Success: Track attendance at training. Training is accomplished in the early part of the year as specified in the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Storm Water Manager and LTSWMP Program Coordinator

Funding: Storm Water Utility, Utah County Storm Water Coalition

Standard Operating Procedures: None

Supporting Documents:
Training Program Matrix (Available upon request)
Attendance Logs (Available upon request)
Training Outlines and Presentation Materials (Available upon request)

Chapter 2

MCM 2: Public Involvement/Participation Program

The permit requirements for Public Participation and Involvement on Storm Water Impacts can be found in Section 4.2.2-4.2.2.3 of the permit. A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements. General Permit for Discharges from Small MS4s—UTR090000

1. Comply with applicable State, and local public notice requirements to involve interested groups and stakeholders for their input on the SWMP.
2. Make available to the public a current version of the SWMP document for review and input for the life of the permit. This should be posted on the City's website.
3. Provide specific opportunities for public involvement and participation at minimum, two times annually

The City has identified the following target pollutants to be addressed by this Minimum Control Measure: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section:

PIP-1: Public Review of this Storm Water Management Plan
PIP-2: Neighbor Committee Involvement
PIP-3: Public Notifications
PIP-4: Public Works Advisory Commission

PIP-1: Public Review of this Storm Water Management Plan

Year Originally Executed: 2010

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.2.1, 4.2.2.2, 4.2.2.3

Audiences: General Public

Description:

Annual reviews are made of this SWMP by City Staff according to the measurable goals matrix. Major revisions have been undertaken in 2010, 2016, 2021, and 2026 in conjunction with the newly issued MS4 Storm Water permits issued by the State. A current copy of the SWMP is available through the City's website for the public to view at any time and updated versions will continue to be posted on the City's website throughout the duration of the permit. Notice of the ability to review this revised SWMP will be posted on the City's storm water webpage. City staff will address public comments and make updates to SWMP as part of the annual review.

With each new MS4 Permit renewal, the City's SWMP will be officially public noticed according to public notice policy within 180 days of the effective date of the new MS4 Permit.

Purpose and Benefit: Local government plans benefit from public and stakeholder buy-in. Allowing for public review will allow diverse opinions to be considered.

Measure of Success: Track phone calls, emails, and social media interactions received related to SWMP.

Responsible Staff: LTSWMP Program Coordinator and Storm Water Manager

Funding: Storm Water Utility

Standard Operating Procedures: none

Supporting Documents:

City of Orem Stormwater Management Plan
Orem Public Notice Policy

PIP-2: Neighborhood Committee Involvement

Year Originally Executed: 1998

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.2

Audiences: General Public

Description: The City coordinates volunteer activities with neighborhood communities and includes storm water activities in neighborhood cleanup programs.

Storm Water Staff are available to speak with neighborhood chairs about the importance of keeping gutters clear, reporting illegal dumping and proper disposal of household hazardous waste.

Purpose and Benefit: This activity allows the public to be involved and increases awareness of storm water issues.

Measure of Success: Track neighborhood cleanup activities by reporting the number of dumpster loads taken to transfer stations in the annual report to the State.

Responsible Staff: LTSWMP Program Coordinator, Storm Water Manager

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

Neighborhood Committee Reports (Available upon request)

PIP-3: Public Notifications

Year Originally Executed: 2003

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.2; 4.2.2.1; 4.2.2.2; 4.2.2.3

Audiences: General Public

Description: The City follows all local public notice requirements.

Purpose and Benefit: This activity allows the public to be involved and increases awareness of storm water issues.

Measure of Success: Public notices are kept according to the Public Notice Policy and can be found on the Utah Public Notice website.

Responsible Staff: LTSWMP Program Coordinator, Storm Water Manager, and City Recorder

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

Public Notice Policy

PIP-4: Public Works Advisory Commission

Year Originally Executed: 2014

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.2

Audiences: General Public, Institutional, Commercial Representatives

Description: On February 11, 2014, the Public Works Director recommended that the City Council, by ordinance, create a Public Works Advisory Commission (Commission) made up of citizens to assist the City in addressing Public Works issues. The Commission was officially formed on that date and has been functioning ever since. The Commission meets monthly and representatives attend City Council meetings and work sessions on a regular basis. The Commission consists of seven members appointed by the Mayor with the advice and consent of the City Council to act in an advisory capacity to the City Council and City Manager. Some of the primary responsibilities include:

1. Review and make recommendations to the City Council on Public Works issues brought to the Commission by the City Manager;
2. Review and make recommendations to the City Council on master plans. The recommendations may include a Capital Facilities Plan, a Financial Plan, supporting utility rates, and other relevant recommendations;
3. Meet, discuss, and review any other relevant issues associated with Water Supply and Distribution, Wastewater Collections and Treatment, Traffic Operations (i.e., signals, lighting, fiber optics, signs, striping, etc.), GIS, Streets (i.e., asphalt, curb, gutter, sidewalk, etc.), Storm Water (i.e., piping, detention, injection, treatment, etc.), Parks, Cemetery, Urban Forestry, Volunteer Coordination, Fleet, etc.;
4. Work toward the continuing education of citizens regarding Public Works issues in the community;
5. Plan and arrange for neighborhood meetings/open houses and attend such meetings to receive and review public input.

Purpose and Benefit: This commission provides advice for the storm water program from stakeholders outside of City staff.

Measure of Success: Minutes of meetings where storm water issues are discussed.

Responsible Staff: Public Works Executive Director, Public Utilities Director, and City Recorder

Funding: Public Works Department

Standard Operating Procedures: None

Supporting Documents:

Agendas and minutes of meetings, with Storm Water Discussions, can be found on the Utah Public Notice website.

Chapter 3

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

The permit requirements for Illicit Discharge Detection and Elimination on Storm Water Impacts can be found in Section 4.2.3 of the permit.

This Section also incorporates the requirements of 5.3 and 5.4 analytical and non-analytical storm water monitoring.

A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements:

1. Maintain a storm water system map of the MS4, showing the location of all outfalls, receiving waters, storm drain pipes, and other treatment and conveyance structures.
2. Through an ordinance, or other regulatory mechanism, prohibit (to the extent allowable under state or local law) non-storm water discharges into the MS4 and implement appropriate enforcement procedures and actions.
3. Implement a plan to detect and address non-storm water discharges, including spills, illicit connections/discharges, and illegal dumping to the MS4.
    a. The plan must include identification of priority areas and annual inspection, at minimum, of those priority areas.
    b. The plan must also include dry weather screenings at all outfalls to detect potential illicit discharges to receiving waters at least once during the 5-year Permit term.
    c. An inspection form must be used to document both inspection processes.
4. Implement Standard Operating Procedures (SOPs) for:
    a. Tracing the source(s) of an illicit discharge.
    b. Characterizing the nature of, and the potential public or environmental threat posed by, any illicit discharges found or reported.
    c. Ceasing the illicit discharge, including notification of appropriate authorities, property owners, and technical assistance for removing the source and follow-up inspections.
    d. Spill and improper disposal response and a flowchart for internal use, including various responsible agencies and their contacts.
    e. Program evaluation and assessment including maintenance of a database that tracks number and type of spills or illicit discharges identified, and inspections conducted.
5. Train all staff, MS4 contractors, office personnel, or other responsible entities within 60 days of hire/contract date and annually thereafter.
    a. Topics must include at minimum: (1) identification and reporting; (2) investigation, termination, clean-up, and enforcement procedures; (3) investigation documentation requirements.
    b. MS4 must keep records of training that include dates, activities or course descriptions, and names and positions of staff in attendance.
6. Promote or provide services for the collection of household hazardous waste.
7. Publicly list and publicize a hotline or other local number for public reporting of spills or other illicit discharges.

8. Analytical and non-analytical monitoring.
9. Notify DEQ within 30 days if MS4 suspects that a discharger may need a separate UPDES Permit (e.g., Industrial Storm Water Permit, Dewatering Permit, etc.).

The city has identified the following target pollutants to be addressed by this Minimum Control Measure: Nutrients, Hydrocarbons, Heavy Metals, Sediment, Toxic Chemicals, Litter/Trash, Debris, and Pathogens.

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section.

IDDE-1: Maintain a Current Map of MS4
IDDE-2: Administrative Prohibition of Illicit Discharges
IDDE-3: Designation and Inspection of Priority IDDE Areas
IDDE-4: Outfall Verification and Screening
IDDE-5: Field Response to IDDE Events
IDDE-6: Compliance Assistance and Enforcement
IDDE-7: Employee Training about Illicit Discharges, Spills, Illicit Connections and Improper Disposal
IDDE-8: Publicize a Hotline for Public Reporting of Spills and Other Illicit Discharges
IDDE-9: Promote and Provide Services for the Collection of Household Hazardous Waste
PEO-1: Public Education and Outreach

IDDE-1: Maintain a Current Map of MS4

Year Originally Executed: 1996

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.1

Audiences: MS4 Staff, Developers, Planners

Description:

The Storm Water Utility has surveyed and mapped the current storm water system, which identifies the location of all MS4 outfalls, receiving waters, storm drain pipes, and other treatment and conveyance structures. The names and location of all state waters that receive discharges from those outfalls have been mapped and given an individual alphanumeric identifier. All mapping is done by in field CCTV van data entry and GPS surveying. The MS4 map is available on the City's Map Portal and can be accessed internally. Public requests can be made to access the map as well.

Purpose and Benefit: Knowing the locations of storm water systems and the type of development near them is the first step in protecting it from pollution sources.

Measure of Success: The MS4 map is updated constantly with data entry from new development, redevelopment, capital improvement projects, and regular MS4 inspection and maintenance procedures. The measure of success is that the MS4 map can be relied on consistently to provide accurate and valuable data to Public Works and developers.

Responsible Staff: Storm Water GIS Analyst, Public Utilities Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: Video Inspections/CCTV Camera SOP

Supporting Documents:

MS4 Map (Available upon request)

IDDE-2: Administrative Prohibition of Illicit Discharges

Year Originally Executed: 1996, revised and amended 2008, 2015

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.2, 4.2.3.2.1, 4.2.1.2

Audiences: MS4 Staff, General Public, Developers, Contractors, Engineers and Planners

Description:

The City enacted Chapter 23 of the City code in 1996. This ordinance was updated in 2002, 2008, 2015, 2017, and 2020 to come into greater compliance with the General Permit for Discharges from Small MS4s. Beyond this chapter, there are numerous City Codes that prohibit activities that have a negative impact on storm water quality. A summary of City Ordinances which impact storm water quality can be found in Appendix A.

Purpose and Benefit: Codifying the requirements of the Permit and the SWMP allows for effective enforcement of necessary prohibitions to ensure storm water quality.

Measure of Success: Maintain a log of ordinance revisions. Reviewed with each permit renewal or change in the permit according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: City Attorney in coordination with Public Utilities Director, and Storm Water Manager

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

City Code

City Storm Water Ordinance Summary (Appendix A)

IDDE-3: Designation and Inspection of Priority IDDE Areas

Year Originally Executed: 2011

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.3; 4.2.3.3.1; 4.2.3.10

Audiences: MS4 Staff, MS4 Contractors, Commercial, Industrial

Description:

The Storm Water Utility staff have analyzed IDDE events and identified priority areas likely to have illicit discharges. The areas focused on are areas with older infrastructure, industrial or commercial use, areas with a history of illicit discharges or illegal dumping in addition to areas upstream of sensitive water bodies. These priority areas will be reviewed annually and a new Priority IDDE Area map produced that reflects changing priorities.

Purpose and Benefit: Focused monitoring efforts will allow for better use of limited resources.

Measure of Success: Report and properly record all illicit discharge or illegal dumping events and whether the event impacts the MS4 system or not. As outlined in Appendix B, annually update the priority IDDE Areas map and perform the necessary inspections.

Responsible Staff: GIS Analyst, Public Utilities Field Supervisor, and SWPPP Program Coordinator, LTSWMP Program Coordinator, LTSWMP Program Coordinator

Funding: Storm Water Utility

Standard Operating Procedures: Illicit Discharge Priority Area Identification and Inspection SOP

Supporting Documents:

IDDE Priority Area Questionnaire

IDDE Priority Area Annual Inspection Form

IDDE-4: Outfall Verification and Screening

Year Originally Executed: 2011

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.3.2-4.2.3.3.4

Audiences: MS4 Staff

Description:

Field screening is necessary to identify any potential source(s) of illicit discharge(s). The list of outfalls is the basis of dry weather screening and assessment activities. All outfalls shall be inspected at least once every five years. At least once every permit cycle, the system shall be evaluated to ensure the outfall list is current. Every outfall that is in a Priority IDDE Area will be screened at least once a year. Using the IDDE Priority Area Questionnaire, the staff designated to conduct field screening will go out into the priority areas and collect visual data. The screening will be conducted at least 72 hours after the last precipitation event.

Purpose and Benefit: To establish procedures for eliminating illicit discharges and eliminating direct sources of pollution to the MS4.

Measure of Success: Track reports of illicit discharges and the actions taken to remedy the discharges. This will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Storm Water Manager and Public Utilities Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: Reporting Illicit Discharges, Tracing Illicit Discharges, Dry Weather Outfall Screening

Supporting Documents:

Outfalls and Sampling Points map viewer on Elements. (Available upon request)

IDDE-5: Response to IDDE Events

Year Originally Executed: 2011

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.1.2, 4.2.3.4; 4.2.3.5; 4.2.3.5.1; 4.2.3.9.1; 4.2.3.12

Audiences: MS4 Staff, MS4 Contractors, General Public, Commercial, Institutional, Industrial

Description:

There are several items addressed by the Storm Water Utility Staff in connection with illicit connections and illicit discharges and spills. The City has implemented SOPs to address items such as reporting and characterizing illicit discharges, tracing the sources of illicit discharges and connections, removing illicit connections, eliminating illicit discharges, and proper maintenance of the MS4. The implementation of these practices is found in the SOPs listed below. Additionally, there is a 30-day deadline for the MS4 to report to the Director that a discharger may need a separate UPDES Permit.

The general public is educated on how to report any illicit discharge or dumping events to the City or Utah County Health Department through the OremFest Storm Water Education Booth and storm water online publications (i.e. *WaterWatch*) that advertise the storm water 24 hr hotline phone number.

MS4 Staff are educated on how to recognize and report illicit discharge or dumping events to the Storm Water Utility through annual IDDE training.

Purpose and Benefit: To establish procedures for eliminating illicit discharges and eliminating direct sources of pollution to the MS4.

Measure of Success: Reports of tracing activities. Reporting to the DEQ as necessary. Report to the County Health Department as necessary. This will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Public Utilities Field Supervisor and SWPPP Program Coordinator, LTSWMP Program Coordinator

Funding: Storm Water Utility

Standard Operating Procedures: IDDE Response SOP, Sump-Separator-Manhole Inspections, Video Inspections (TV Camera), and Dye Testing

IDDE-6: Compliance Assistance and Enforcement

Year Originally Executed: 2011

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.2.1; 4.2.3.6; 4.2.3.6.1; 4.2.3.9.1

Audiences: General Public, Commercial, Institutional, Industrial

Description: Enforcement measures are spelled out in City ordinances and City staff will use their own judgment about what mix of compliance assistance and enforcement action is appropriate in a given situation. The City will respond to the discovery of an illicit connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Purpose and Benefit: Assistance and enforcement are powerful tools in helping residents, businesses, institutions and industrial facilities eliminate sources of illicit discharges.

Measure of Success: Tracking of illicit discharges and follow up activities. This will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator, LTSWMP Program Coordinator

Funding: Storm Water Utility

Standard Operating Procedures: Ceasing Illicit Discharges, IDDE Response and Flow Chart

Supporting Documents: Orem City Code

IDDE-7: Employee Training about Illicit Discharges, Spills, Illicit Connections and Improper Disposal

Year Originally Executed: 1998

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.7; 4.2.3.4.1.1; 4.2.3.4.1.2.

Audiences: MS4 Staff

Description: Many city employees can play an important role as partners in the detection and/or prevention of illicit discharges. For example, storm water staff who maintain catch basins can look for signs of illicit discharges. Municipal building inspectors/project managers can help ensure that illicit connections to the storm water system do not take place in construction and renovation projects. Public Safety officers, public works employees, and other municipal staff whose jobs keep them outside and mobile can help spot illicit discharges or illegal dumping. Public Safety personnel who respond to hazardous material spills can help keep these spills out of the storm water system and adjacent water bodies.

All MS4 Staff, MS4 contractors, office personnel, or other responsible entities that, as part of their normal job responsibilities, might come into contact with, receive calls, or otherwise observe an illicit non-storm water discharge receive training on recognizing and reporting IDDE events within 60 days of hire and annually thereafter.

Purpose and Benefit: Annual training keeps staff up to date on critical issues associated with storm water quality.

Measure of Success: Training logs, Illicit Discharge Reports submitted by employees. These will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator, LTSWMP Program Coordinator and Public Utilities Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: Reporting an IDDE

Supporting Documents:

Employee Training Materials (Available upon request)

IDDE-8: Publicize a Hotline for Public Reporting of Spills and Other Illicit Discharges

Year Originally Executed: 2011

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.9; 4.3.9.1; 4.2.3.10

Audiences: General Public, Businesses and Institutions

Description: The City has established a hotline number (801-229-7577) for reporting illicit discharges. This number is publicized in WaterWatch on the City website, social media, City vehicles, etc. Recorded messages received at this number are forwarded to storm water personnel with a goal to respond to calls in a timely fashion.

Purpose and Benefit: The hotline allows City residents and business owners to become the eyes and ears of the Storm Water Utility in its efforts to eliminate illicit discharges.

Measure of Success: Track the number of phone calls received with the City's telephone system. These will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator, LTSWMP Program Coordinator, Public Utilities Field Supervisor and Storm Water Manager

Funding: Storm Water Utility

Standard Operating Procedures: IDDE Response and Flow Chart, Reporting an IDDE

Supporting Documents: Public Education Program

IDDE-9: Promote and Provide Services for the Collection of Household Hazardous Waste

Year Originally Executed: 1997

Last Reviewed: May 5, 2026

Reference Regulation: 4.2.3.8

Audiences: General Public, Commercial, Institutional, Industrial

Description: The City has established an oil and antifreeze recycling station as part of its Fleet Services Division. The City promotes the oil and antifreeze-recycling program in newsletters and on its website.

The City also has publicized the efforts of the Utah County Health Department and its Household Hazardous Waste collection events. It has done this through its website and through its social media outlets.

Purpose and Benefit: Eliminating the storage of unused or leftover chemicals and household hazardous waste lessens the potential for IDDE events.

Measure of Success: Oil and Antifreeze Recycling Tracking logs. This is reported annually to the State according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Fleet Services Manager, SWPPP Program Coordinator, LTSWMP Program Coordinator

Funding: Storm Water Utility and Fleet Services

Standard Operating Procedures: Vehicle and Equipment Maintenance and Storage SOP (available upon request)

Chapter 4

MCM 4: Construction Site Storm Water Runoff Control

The permit requirements for Construction Site Storm Water Runoff Control can be found in Section 4.2.4 of the permit.

A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements:

1. Compliance with the General Permit Section for Construction through an ordinance or other regulations.
2. Documentation of enforcement activities including a written enforcement strategy and Standard Operating Procedures (SOPs) related to ceasing violations.
3. Develop and implement a plan for the pre-construction review of Storm Water Pollution Prevention Plans (SWPPPs).
    a. Review BMPs
    b. Include a checklist to evaluate water quality impacts as explained in the drainage design manual
    c. Encourage the use of low impact development (LID) and green infrastructure
    d. Identify priority construction sites, especially those that directly discharge impaired waters to high quality waters as identified by the State
    e. Receive and consider information and comments submitted by the public on proposed projects
4. Develop and implement procedures for construction site inspection and enforcement of SWPPP control measures.
5. Track the preconstruction review, regular inspections, permit violations, and permit termination of construction sites with land disturbance of greater than or equal to one acre. This includes projects less than one acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre.
6. Train employees and maintain records of training.

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section.

CSR-1: City of Orem Ordinances
CSR-2: SWPPP Review Procedures
CSR-3: Construction Site Inspection Procedures
CSR-4: Documentation, Enforcement Strategies and Procedures to respond to Violation of Ordinance
CSR-5: Tracking of Preconstruction and Construction Storm Water Activities

Tasks in other Minimum Control Measures
PEO-1: Education and Outreach for General Public
PEO-4: Education and Outreach for City Employees

CSR-1: City of Orem Ordinances

Year Originally Executed: 1996, revised and amended 2008, 2015, 2022

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.4.1; 4.2.4.1.1; 4.2.4.1.2; 4.2.4.1.3

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: MS4 Staff, General Public, Engineers, Construction Contractors, Developers and Planners

Description: City of Orem ordinances include code about the use of erosion and sediment control practices at qualifying construction sites. These projects are governed by the State's General Construction Storm Water Permit. Sites that are smaller than this are governed by the City's Land Disturbance Permit.

City ordinances require construction operators to prepare a Storm Water Pollution Prevention Plan (SWPPP) and apply sediment and erosion control BMPs to protect water quality, reduce the discharge of pollutants, and control waste in accordance with the SWPPP requirements set forth in the General Permit for Storm Water Discharges from Construction Activities.

Additionally, the ordinances address compliance with the UPDES General Permit for Storm Water Discharges from Construction Activities connected with single lot housing projects. The ordinance includes a provision allowing access by qualified personnel to inspect construction storm water BMPs on private properties that discharge to the MS4.

Purpose and Benefit: Ordinances supporting the City's storm water programs are vital to ensure the success of programs that govern and protect the public.

Measure of Success: Evaluate storm water ordinances and draw connections to positive outcomes. This will be reviewed every time the permit is renewed or changed.

Responsible Staff: SWPPP Program Coordinator, Storm Water Manager and City Attorney

Funding: Storm Water Utility

Standard Operating Procedures: None

City Ordinance References

Storm Water Ordinances available online are linked below.

Chapter 17

Chapter 23

City Storm Water Ordinance Summary (See Appendix A)

Supporting Documents

UPDES Construction General Permit Number UTRC00000

UPDES Common Plan Permit UTRH00000

City of Orem Land Disturbance Permit Application

CSR-2: SWPPP Review Procedures

Year Originally Executed: 1996

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.4.3, 4.2.4.3.1-4.2.4.3.3

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Debris; Pathogens

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers and Planners

Description:

The City ensures compliance with State and Local regulations by implementing pre-construction SWPPP review procedures for all qualifying sites. The City also has procedures in place for sites that are smaller than one acre through its Land Disturbance Permit.

The City conducts pre-construction SWPPP reviews, which include a review of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development. The city also reviews and considers information and comments submitted by the public on proposed projects.

These procedures consider potential water quality impacts and use a checklist. Priority construction sites shall consider soil erosion potential, site slope, project size and type, sensitivity of receiving water bodies, proximity to receiving water bodies, non-storm water discharges and past record of non-compliance by the operators of the construction site. The review also identifies priority construction sites that discharge directly into or immediately upstream of waters that the State recognizes as impaired or as high-quality.

Purpose and Benefit: Creating procedures and checklists allow for uniform review of sites based on agreed upon objective criteria. This consistency should lead to better compliance as contractors, developers and engineers are able to recognize patterns applicable to sites throughout the City.

Measure of Success: Maintain a file of reviewed and approved SWPPPs on the Orem server for every applicable construction project. Reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Storm Water Coordinator, Public Utilities Field Supervisor and City Planner

Funding: Storm Water Utility

Standard Operating Procedures: SWPPP Review and Inspection SOP

Other References

Development Review Application

SWPPP Review Checklist

BMP Preferred List

CSR-3: Construction Site Inspection Procedures

Year Originally Executed: 2003

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.4.4-4.2.4.4.4

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: MS4 Staff

Description:

The City has developed and implemented a program for inspecting construction sites for compliance with storm water regulations. Those sites that disturb greater than or equal to one acre including projects less than one acre that are part of a larger common plan of development or sale are governed by procedures that are defined by the MS4 Permit. Activities are carried out using the State's Oversight Construction Inspection Form.

Purpose and Benefit: Creating procedures and checklists allow for uniform review of sites based on agreed upon objective criteria. This consistency should lead to better compliance as contractors, developers, and engineers are able to recognize patterns applicable to sites throughout the City.

Measure of Success: Maintain a file of SWPPP inspections on the Orem server. Include a record of deficiencies during these inspections and the actions taken to remedy these deficiencies. Reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator

Funding: Storm Water Utility

Standard Operating Procedures: SWPPP Review and Inspection SOP

CSR-4: Documentation, Enforcement Strategies, and Procedures to respond to Violation of Ordinance

Year Originally Executed: 2003

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.4.2; 4.2.4.2.1; 4.2.4.2.2; 4.2.4.4.5;

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: MS4 Staff

Description:

The City has a program to track oversight enforcement actions related to compliance with regulations governing storm water discharges from construction sites. This includes a series of escalating actions that are meant to increase the probability of compliance. The system is identified in the Enforcement for Construction Sites SOP and includes actions ranging from written mandates to civil fines and stop work orders. The city may also pursue criminal prosecution according to City Code.

A key component of this effort is the Storm Water Pollution Prevention Plan tracking program developed by the City's IT Staff. The Storm Water Coordinator uses this program to track inspections and enforcement actions related to construction activities.

Purpose and Benefit: Creating procedures and checklists allow for consistent enforcement and documentation of deficiencies. This should lead to better compliance as contractors, developers and engineers are able to recognize consistent enforcement of deficiencies at sites throughout the City.

Measure of Success: Enforcement actions lead the operator to come into compliance with their SWPPP. Annual review of enforcement actions and remedies according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator and Public Utilities Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: Enforcement for Construction Sites SOP

City Ordinance References

Storm Water Ordinances available online are linked below.

Chapter 23

City Storm Water Ordinance Summary (See Appendix A)

CSR-5: Tracking of Preconstruction and Construction Storm Water Activities

Year Originally Executed: 2003

Last Reviewed: June 11, 2026

Reference Regulation: 4.2.4.6

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash, Debris; Pathogens

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers and Planners

Description:

The City has developed programs to track preconstruction and construction storm water activities. The Development Tracking program developed by the City's IT Department tracks site plan reviews. The Storm Water Pollution Prevention Plan tracking program developed by the City's IT Department tracks SWPPP inspections and enforcement. The city also reviews and considers information and comments submitted by the public on proposed projects.

The SWPPP Program Coordinator uses these programs to track inspections and enforcement actions related to construction activities.

Purpose and Benefit: Tracking preconstruction and construction storm water activities allows for consistent enforcement of storm water regulations.

Measure of Success: Annual review of data collected compared to previous years according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: SWPPP Program Coordinator, Public Utilities Field Supervisor and City Planner

Funding: Storm Water Utility

Standard Operating Procedures: Site Plan Review and Post-Construction Plan Review (Available upon request)

Chapter 5

MCM 5: Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management)

The permit requirements for Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management) can be found in Section 4.2.5 of the permit.

A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements:

1. Develop and adopt a program that addresses long-term post-construction runoff for new development and redevelopment of qualifying construction sites. The ordinance or other regulatory mechanism shall require BMP selection, design, installation, operation and maintenance standards necessary to protect water quality and reduce the discharge of pollutants to the MS4.
2. Document enforcement activities including a written enforcement strategy and Standard Operating Procedures (SOPs) related to ceasing violations.
3. Documentation on how the requirements of the ordinance or other regulatory mechanism will protect water quality and reduce the discharge of pollutants to the MS4. Documentation shall include:
    a. How long-term storm water BMPs were selected
    b. The pollutant removal expected from the selected BMPs
    c. The technical basis that supports the performance claims for the selected BMPs.
4. Develop and implement standards to ensure that any storm water controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality. This must include the use of non-structural BMPs.
5. Require the evaluation of Low Impact Development (LID) to encourage infiltration, evapotranspiration, and storm water harvesting and green infrastructure controls. Require documentation of why LID was selected.
6. Track the plan review of long-term storm water management measures and permanent structural storm water controls inspections.
7. Specify a hydrologic method to be used in calculation of runoff values.
8. Implement procedures for site plan review that includes preferred design specifications. These design specifications should be made available to design professionals on a regular basis.
9. Land owner or designated manager shall conduct inspections and any necessary maintenance at least every other year.
10. The City should inspect storm water controls at each applicable property at least once every five years to ensure the owner is maintaining the storm water facilities and documenting inspections/maintenance.
11. Maintain a database of long-term storm water management structures and maintain a catalog of inspections done on these structures.

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section.

LTM-1: City of Orem Ordinances
LTM-2: Water Quality Protection Documentation
LTM-3: Long-Term Storm Water Management Plan Review
LTM-4: Hydrologic Method
LTM-5: Site Plan Review Procedures
LTM-6: Site Inspection for Post-Construction Storm Water Management Compliance
LTM-7: Post-Construction Storm Water Management Structure Inventory

Tasks in other Minimum Control Measures

CSR-4: Documentation, Enforcement Strategies and Procedures to respond to Violation of Ordinance (4.2.5.2.1)
PEO-4: Education and Outreach for City Employees (4.2.1.5, 4.2.1.6)

LTM-1: City of Orem Ordinances

Year Originally Executed: 1996, revised and amended 2008, 2015, 2020

Last Reviewed: June 16, 2026

Reference Regulation: 4.2.5.2.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens.

Audiences: MS4 Staff, General Public, Engineers, Construction Contractors, Developers and Planners

Description: City of Orem Code includes ordinances about the use of BMPs needed to protect water quality at all new development and redevelopment sites. These City ordinances govern the selection, design, installation, operation and maintenance of post-construction BMPs. City code requires the use of non-structural BMPs and Low Impact Development (LID) practices for handling storm water. Orem requires documentation of LID and BMPs considered and the reasons for choosing the practices or explanations of what prevents the use of LID for each development or redevelopment project that is a qualifying construction site. City ordinance also requires inspection and maintenance of long-term storm water management structures as prescribed in the property owner's Operations and Maintenance Plan (O&M Plan). In addition, maintenance agreements are required so that property owners can be held accountable for keeping BMPs in good working order. City Code, the Maintenance Agreement, and the *Enforcement of Post Construction SW Maintenance* SOP outline enforcement measures taken if property owners do not maintain their storm system.

Purpose and Benefit: Ordinances and design standards supporting the City's storm water program are vital to ensure the success of regulations that govern and protect the public.

Measure of Success: Evaluate the ordinance and draw connections to positive outcomes when the permit is renewed or changed according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: Storm Water Manager or designee, City Engineer and City Attorney

Funding: Storm Water Utility

Standard Operating Procedures: None

City Ordinance References:

Storm Water Ordinances available online are linked below

Chapter 17
Chapter 23
City Storm Water Ordinance Summary (See Appendix A)

Supporting Documents

Storm Water Maintenance Agreement (Available upon request)
Storm Water System Design and Management Manual
Storm Water System Operations & Maintenance Plan template

LTM-2: Water Quality Protection Documentation

Year Originally Executed: 2016

Last Reviewed: June 17, 2025

Reference Regulation: 4.2.5.2.2

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens.

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers, Planners

Description:

Selecting specific long-term storm water BMPs for recommendation has been a challenge due to the lack of data on the effectiveness and pollutants removal rates from studies that have been completed in Utah. The City of Orem recommends developers consider Low Impact Development (LID) through the use of the Utah Department of Water Quality's (UDWQ) manual, "A Guide to Low Impact Development within Utah". Additional resources can be found at the International Storm Water BMP Database and the EPA's National Menu of Best Management Practices (BMPs) for Storm Water. The preceding websites list expected removal rates from a variety of BMPs and the technical basis and studies which support these performance claims. Developers must design BMPs to treat storm water with a goal of reducing pollutants in the receiving water bodies. BMPs should address removal of phosphorus, total suspended solids, and other site specific target pollutants. Proposed BMPs will be evaluated by City staff to verify selected BMPs will target reduction of site specific pollutants.

Purpose and Benefit: Creating procedures and checklists allow for uniform review of sites based on agreed upon objective criteria. This consistency should lead to better compliance as contractors, developers and engineers are able to recognize patterns applicable to sites throughout the City.

Measure of Success: The number of new and redeveloped sites that implement LID features.

Responsible Staff: LTSWMP Program Coordinator, Public Utilities Field Supervisor and Community Development

Funding: Storm Water Utility

Standard Operating Procedures: Site Plan Review and Post-Construction Plan Review

Supporting Documents:

UDWQ's manual "A Guide to Low Impact Development within Utah"

International Storm Water BMP Database

EPA's National Menu of Best Management Practices (BMPs) for Storm water

Drainage Report Checklist

LTM-3: Long-Term Storm Water Management Plan Review

Year Originally Executed: 2003

Last Reviewed: June 16, 2026

Reference Regulation:4.2.5.3. ; 4.2.5.3.1 ; 4.2.5.3.2.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description: Development can increase impervious surfaces and change drainage patterns, thereby increasing volume and velocity of runoff from the site. Runoff can contain a variety of pollutants that are detrimental to water quality such as sediment, nutrients, road salts, heavy metals, pathogenic bacteria, and hydrocarbons. Considering water quality impacts early in the design process can provide long-term water quality benefits.

The City of Orem as a Phase II regulated municipality, has developed ordinances which require property owners and operators to include a combination of structural and non-structural BMPs. The ordinances also ensure adequate long-term operation and maintenance of BMPs. The City thoroughly reviews development plans and supporting documents for each site to ensure that post-construction storm water controls will have minimal negative impacts to water quality.

The City will regularly review and update design guidance documents written by MS4 staff that are provided to design professionals. These design guidance documents are an additional resource that are specific to storm water design considerations in Orem.

Purpose and Benefit: Plan reviews allow for the evaluation of selected BMPs and guidance for developers from planning, to construction, to long-term maintenance.

Measure of Success: Review site and subdivision plans, where long-term BMPs selected for use are inadequate, require the engineer to redesign the site according to standards set by the City. These reviewed site plans are stored on Orem's server.

Responsible Staff: LTSWMP Program Coordinator, Public Utilities Field Supervisor and City Planner.

Funding: Storm Water Utility

Standard Operating Procedures: Site Plan Review and Post-Construction Plan Review SOP (Available upon request)

Supporting Documents:

UDWQ's manual "A Guide to Low Impact Development within Utah"

International Storm Water BMP Database

EPA's National Menu of Best Management Practices (BMPs) for Storm Water

LTM-4: Hydrologic Method

Year Originally Executed: 2016

Last Reviewed: June 30, 2026

Reference Regulation: 4.2.5.1.2

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers and Planners

Description:

The use of hydrologic analysis in the design of storm water facilities for new developments and redevelopment sites has been a part of the preconstruction process for many years at the City of Orem. The standards used have been selected by the City Engineer in partnership with Bowen, Collins & Associates. The hydrologic methods that can be used in calculation of run-off volumes are listed in section 4.3 of Orem's Storm Water System Design and Management Manual.

The Storm Water Staff provide guidance in the process, ensuring that UPDES standards of management/retention are met. Each site design submitted to the City requires a technical rationale should retention requirements be infeasible. Infeasibility is only considered for high groundwater, drinking water source protection areas, soil conditions, slopes, accessibility, or excessive costs. The City Engineer will use engineering judgment to determine if the exemption request will be accepted or denied on a case-by-case basis. The plan should identify the means by which water quality will be protected and volume control standards met.

Purpose and Benefit: Reducing runoff from sites and encouraging the infiltration, evapotranspiration and/or reuse of storm water allows for groundwater recharge and minimizes potentially adverse impacts to downstream waters.

Measure of Success: Design engineers use our preferred storm water calculation methods and design sites that retain the first 0.5" of storm water where feasible.

Responsible Staff: Storm Water Manager, LTSWMP Program Coordinator, Public Utilities Field Supervisor, GIS Analyst for Storm Water, and City Engineer

Funding: Storm Water Utility

Standard Operating Procedures: Site Plan Review and Post-Construction Plan Review SOP

Supporting Documents:

City of Orem Storm Drainage Systems Design and Management Manual

LTM-5: Site Plan Review Procedures

Year Originally Executed: 1996

Last Reviewed: June 30, 2026

Reference Regulation: 4.2.5.3; 4.2.5.3.1; 4.2.5.3.2

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Contractors, Developers, Engineers

Description: The City reviews site plans to ensure that any storm water controls or management practices for new development and redevelopment will prevent or minimize negative impacts to water quality. This process involves the technical development review with engineering, public works and public safety. This review promotes non-structural BMPs such as minimizing disturbance areas, preserving areas deemed important for water quality benefits, implementing flood control and protecting natural resources. The review process requires the evaluation of proposed LID that implements infiltration, evapotranspiration, and storm water harvesting in accordance with state regulations. If LID is determined not to be feasible, documentation explaining site limitations must be submitted to the development review committee for review and approval prior to construction. BMPs will be reviewed to ensure that they will address anticipated pollutants from the developed site. Additionally, this process of preconstruction and review meetings is a time to review storm water maintenance agreements.

Purpose and Benefit: The best way to integrate long-term storm water quality measures into a site is during planning and review.

Measure of Success: Document the number of sites reviewed for storm water runoff and quality control. Identify common misunderstood standards and increase education to design engineers and contractors accordingly. These common issues will be noted by the LTSWMP Program Coordinator and education improved for those subjects annually according to the Public Education Program SOP.

Responsible Staff: Storm Water Manager, LTSWMP Coordinator, Public Utilities Field Supervisor, City Planner and City Engineer

Funding: Storm Water Utility

Standard Operating Procedures: Site Plan Review and Post-Construction Plan Review SOP

Supporting Documents

City of Orem Construction Standards
Full Site Plan Checklist
All documents listed on the orem.gov/stormwater webpage

LTM-6: Site Inspection for Post-Construction Storm Water Management Compliance

Year Originally Executed: 2016

Last Reviewed: June 30, 2026

Reference Regulation: 4.2.5.2.3; 4.2.5.2.4;

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Developers, Contractors, Business Owners

Description:

The City has a process to verify the proper installation and maintenance of long-term storm water management controls. Permanent structural BMPs are inspected at least once during installation and upon completion of the project by the LTSWMP Program Coordinator, the SWPPP Program Coordinator, and/or a City Construction Engineer. Any deficiencies noted in the post-construction inspection must be addressed by the developer before a certificate of occupancy will be granted by the City.

Henceforth, each property owner who has signed the Storm Water Inspection and Maintenance Agreement (SWIMA), shall ensure that storm water maintenance and inspections are performed according to the O&M Plan. Maintenance records are requested by the City at least every other year to verify the storm system is in good working order. Oversight of these requirements is the responsibility of the LTSWMP Program Coordinator. The Coordinator files all applicable documentation to the shared Google Drive. The City will then inspect each site that is bound by a SWIMA at least once every five years.

Purpose and Benefit: Properly installed and maintained storm water controls ensure long-term benefits are extended to the full life expectancy of the measures.

Measure of Success: Document the number of sites evaluated and the measures used to address any issues with these sites. This will be reviewed annually according to the Storm Water Management Plan Measurable Goals Matrix.

Responsible Staff: LTSWMP Program Coordinator, SWPPP Program Coordinator, Public Utilities Field Supervisor, Construction Engineer and City Engineer

Funding: Storm Water Utility

Standard Operating Procedures: Post-Construction Maintenance Inspections SOP
Storm System Verification Mid-Construction Inspection SOP
Storm System Verification Final Inspection SOP

Supporting Documents: Storm Water Inspection and Maintenance Agreement (Available upon request)

LTM-7: Post-Construction Storm Water Management Structure Inventory

Year Originally Executed: 2016

Last Reviewed: June 30, 2026

Reference Regulation: 4.2.5.4., 4.2.5.4.1, 4.2.5.5., 4.2.5.5.1., 4.2.5.5.2.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Developers

Description:

During the development review process, a Storm Water (SW) Maintenance Map is collected from the developer. This map shows the location of all permanent storm water structures and provides them with a structure number. Post-construction, an "as-built" SW Maintenance Map is required before Certificate of Occupancy is granted. Additionally, the City now requires as-built grading and drainage sheets. This data is used to update the City's storm water structure inventory.

The City will monitor its current inventory of post-construction storm water management structures through post construction inspections and maintenance of public systems and private systems. Information is collected and input into a GIS database on all storm water controls throughout the City. Each structure inventory tracks the description, maintenance requirements and inspection information regarding sites that require long-term storm water management. This GIS and related database will be reviewed frequently to update necessary information.

Purpose and Benefit: A database allows for the proper tracking of the maintenance and inspections of long-term management structures and ensures greater compliance with maintenance expectations.

Measure of Success: An accurate storm water structure inventory in Orem's GIS database with reports on related maintenance and inspection activities. This will be reviewed annually according to the Storm Water Management Plan.

Responsible Staff: LTSWMP Program Coordinator, Public Utilities Field Supervisor, and Storm Water GIS Analyst

Funding: Storm Water Utility

Standard Operating Procedures: Storm System Verification Final Inspection SOP, Storm Water Inventory for New and Redeveloped Sites SOP

Supporting Documents:

Storm Water Inspection Charts (Shared Google Drive)

SW Construction Inspection Form

Chapter 6

MCM 6: Pollution Prevention and Good Housekeeping for Municipal Operations

The permit requirements for Pollution Prevention and Good Housekeeping for Municipal Operations can be found in Section 4.2.6 of the permit.

A copy of the General Permit for Discharges from Small MS4s can be found at DWQ's Website. The permit outlines in general the following requirements:

1. Develop and keep a current written inventory of Permittee-owned or operated facilities and storm water controls. Permittees shall assess this written inventory for their potential to discharge common pollutants to storm water. The Permittee must identify high priority facilities or operations that have a high potential to generate storm water pollutants. The Permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) or similar type document for each high priority facility.
2. Conduct the following inspections at high priority facilities:
    a. Monthly visual inspections
    b. Semi-annual comprehensive inspections
    c. Annual visual observation of storm water discharges
3. Develop and implement Standard Operating Procedures to protect water quality at each of the facilities owned or operated by the Permittee and/or activities conducted by the Permittee. They must address:
    a. Use, storage and disposal of chemicals;
    b. Storage of salt, sand, gravel, landscaping materials, asphalt and other materials;
    c. Waste and trash management;
    d. Cleaning, washing, painting and maintenance activities including: cleaning of maintenance equipment, building exteriors, and trash containers;
    e. Sweeping roads and parking lots;
    f. Proper application, storage, and disposal of fertilizer, pesticides, and herbicides and minimizing their use;
    g. Lawn maintenance and landscaping activities including: proper disposal of lawn clipping and vegetation;
    h. Proper disposal of pet wastes;
    i. Vehicle maintenance and repair activities including: use of drip pans and absorbents under or around leaky vehicles and equipment;
    j. Vehicle/equipment storage including storing indoors where feasible;
    k. Vehicle fueling including placing fueling areas under cover in order to minimize exposure where feasible;
    l. Road and parking lot maintenance, including: pothole repair, pavement marking, sealing, and repaving;
    m. Cold weather operations, including: plowing, sanding, application of deicing compounds, and maintenance of snow disposal areas;
    n. Right-of-way maintenance, including: mowing, herbicide and pesticide application;

   o. Municipally-sponsored events such as large outdoor festivals, parades, or street fairs and the clean-up following these events;
   p. Regular inspection, cleaning, and repair of storm water conveyance and structural storm water controls;
   q. Graffiti removal; and
   r. Any activities or operations not listed above that would reasonably be expected to discharge contaminated runoff.
4. Implement a retrofit plan for city owned/operated sites that incorporates LID and green infrastructure. Priority Areas should be identified in the plan.
5. Maintain an inventory of all floor drains inside all Permittee-owned or operated buildings. The inventory must be kept current. The Permittee must ensure that all floor drains discharge to appropriate locations.
6. Assess the effectiveness of flood management structural controls for water quality and hydrologic performance. Suggest improvements to these structures when they can provide significant improvements to water quality.
7. Assure that City construction projects follow the requirements of the General UPDES Permits for Storm Water Discharges Associated with Construction Activities.
8. Train City employees and MS4 contractors responsible for the construction, operation or maintenance of facilities, structures, vehicles or equipment likely to affect storm water quality.

The City of Orem has implemented tasks to meet the requirements of this MCM, which are summarized in this section.

PPGH-1: City Owned Facility Inventory Assessment
PPGH-2: Priority Facility Inspections
PPGH-3: Standard Operating Procedures for Pollution Prevention
PPGH-4: Good Housekeeping for Municipal Operations
PPGH-5: Floor Drain Inventory
PPGH-6: Flood Management Control Assessment
PPGH-7: Public Construction Project Compliance
PPGH-8: Oversight of Contractors Performing Municipal Maintenance
PPGH-9: Retrofit Plan

Tasks in other Minimum Control Measures

PEO-4: Education and Outreach for City Employees (4.2.6.10)

PPGH-1: City Owned Facility Inventory Assessment

Year Originally Executed: 2002

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6; 4.2.6.1; 4.2.6.2.; 4.2.6.3.; 4.2.6.3.1., 4.2.6.3.2.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description:

The City maintains a list of all City owned and operated facilities including city buildings (offices), equipment storage and maintenance facilities, landscape maintenance facilities, parking lots, golf courses, swimming pools, drinking water wells, and sewer lift stations.

Regular assessments are made of the impact of each facility on storm water quality based on the presence of potential pollutants. Through these assessments, the City has determined that its Public Works Complex, Sleepy Ridge Golf Course Maintenance Shed, Public Parks, and SCERA outdoor pool should be considered priority facilities referenced in the MS4 Permit as “high priority facility”. Designated City owned maintenance sheds are also considered priority facilities and are regulated as such. A Storm Water Pollution Prevention Plan has been developed for each priority facility to help manage potential impacts on storm water quality.

Purpose and Benefit: This inventory will ensure that City facilities are regularly reviewed to minimize adverse impacts of City operations on storm water quality.

Measure of Success: Review of City facility inventory will be done annually. IDDE incidents are properly reviewed with follow up, and an up-to-date facility inventory list is kept.

Responsible Staff: LTSWMP Program Coordinator, SWPPP Program Coordinator, Storm Water Field Supervisor, Storm Water Manager and GIS Analyst

Funding: Storm Water Utility

Standard Operating Procedures: Potential Priority Area Assessment SOP

Supporting Documents:

City of Orem Facility Inventory (available upon request)
Priority facility SWPPPs (available upon request)

PPGH-2: Priority Facility Inspections

Year Originally Executed: 2002

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6.4.; 4.2.6.4.1; 4.2.6.4.2; 4.2.6.4.3

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description:

The City conducts the following inspections on Priority Facilities, in accordance with the permit:

1. Monthly visual inspections to verify and correct the performance of the BMPs and all other systems designed and placed to eliminate pollutant discharges.
2. Semi-annual comprehensive inspections to review all storm water controls, waste storage areas, equipment maintenance/fueling areas, material handling areas and similar pollutant generating areas. The semi-annual inspection will also review previous monthly or annual inspections and the facility's SWPPP.
3. Annual visual observation of storm water discharges during wet weather, where discharges are observed for irregularities (discoloration, foam, sheen, turbidity) that may indicate polluted runoff.

Purpose and Benefit: Regular inspections of areas that have the potential to lead to polluted runoff can minimize the potential of polluted discharges.

Measure of Success: Completed and filed inspection reports including follow up actions each time inspections are completed.

Responsible Staff: SWPPP Program Coordinator, LTSWMP Program Coordinator, and GIS Analyst

Funding: Storm Water Utility

Standard Operating Procedures: Priority Facility Inspections SOP

PPGH-3: Standard Operating Procedures for Pollution Prevention

Year Originally Executed: 2010

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6.5; 4.2.6.5.1; 4.2.6.5.2; 4.2.6.5.3; 4.2.6.5.4; 4.2.6.5.5; 4.2.6.5.6.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description: The City has developed and implemented Standard Operating Procedures (SOPs) to address storm water concerns related to municipal operations. The following topics are all addressed in the City's SOPs.

1. City Buildings and Facilities
    a. Storage and Disposal of Chemicals
    b. Spill Prevention and Cleanup Plans
    c. Dumpsters and Waste Management
    d. Cleaning and Washing Activities
    e. Painting and Maintenance Activities
2. Material Storage Areas
3. Heavy Equipment storage areas and maintenance areas
4. Parks and Open Space
    a. Application, Storage and Disposal of Fertilizer, Pesticides and Herbicides
    b. Sediment and Erosion Control
    c. Lawn Maintenance and Landscaping Activities
        i. Disposal of Lawn Clippings and Vegetation
        ii. Selection of Alternative Landscaping Materials
    d. Waste management
    e. Building Exterior and Equipment Cleaning
        i. Graffiti Removal
    f. Proper disposal of pet wastes
    g. Other Pollution Prevention and Good Housekeeping Practices
5. Vehicle and Equipment
    a. Storage of Vehicles Awaiting Repair
    b. Washing of Vehicles
6. Roads, Highways, and Parking Lots

a. Street and Parking Lot Sweeping
b. Asphalt and Concrete Maintenance
    i. Pothole Repairs
    ii. Pavement Marking
    iii. Sealing and Repaving
c. Cold Weather Operations
    i. Plowing
    ii. Sanding
    iii. Deicing Compounds
    iv. Snow Disposal Area Maintenance
d. Right-of-Way Maintenance (see Landscaping Maintenance in Parks Section)
e. City Sponsored Event Management (Oremfest, Freedom Festival, etc.)

7. Storm Water Collection and Conveyance System
    a. Video Inspections
    b. Cleaning, Maintenance, Repairs
    c. Other Pollution Prevention and Good Housekeeping Practices
    d. Structural BMPs
        i. Swales
        ii. Detention Basins
    e. Disposal of materials removed from catch basins, detention basins, and by street sweeping operations
8. Other Facilities and Operations
    a. City of Orem Fire Training Activities, spill prevention plan and spill response

Purpose and Benefit: SOPs lead to standard applications of policies and procedures.

Measure of Success: The MS4 successfully incorporates all SOPs and reviews them annually. SOPs lead to a reduction in pollutant loads found in storm water.

Responsible Staff: LTSWMP Program Coordinator, Storm Water Manager, Storm Water Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: SOPs available upon request

PPGH-4: Good Housekeeping for Municipal Operations

Year Originally Executed: 2026

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6., 4.2.6.5.2.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers and Planners

Description:

Successful implementation of any BMP is dependent on the following:

- Effective training of municipal employees working in both fixed facilities and field programs.
- Regular inspections of fixed facilities, field programs, and treatment controls.
- Maintenance of treatment controls as needed to ensure proper functioning.
- Periodic evaluation/monitoring of BMP performance consistent with the UPDES permit requirements.
- Correct deficiencies in BMP implementation noted during inspections.
- Keep accurate records of inspections, training, monitoring, and BMP maintenance.

The following are steps to be taken to ensure that new and existing BMPs work properly:

- Special attention will be directed toward ensuring proper maintenance procedures are implemented.
- Regular inspections of facilities or programs including compliance with BMP maintenance requirements.
- Visual monitoring will occur at key outfalls and at selected conveyance system structures to assess long-term BMP effectiveness. Should any observed problems be identified (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources, then analytical testing will be conducted to determine the cause of the problem and the potential source identified.
- Develop and enforce ordinances, procedures, and mechanisms that maintain the effectiveness of BMPs.

Purpose and Benefit: Maintenance of treatment controls and drainage conveyance systems (e.g. detention basins, sumps, catch basins, etc.) including regular inspections are needed to maintain efficient pollutant reduction. If treatment control BMPs are not properly maintained, BMP effectiveness is reduced and water quality deteriorates.

Measure of Success: Functioning storm water controls, no discharge to waters of the state that would affect water quality standards, less incidents of flooding due to poor maintenance.. The whole system is inspected and cleaned as necessary at least once every 5 years.

Responsible Staff: Storm Water Division Manager or designee, Storm Water Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents: MS4 Maintenance SOP

PPGH-5: Floor Drain Inventory

Year Originally Executed: 2010

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6.6.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description: The City maintains an inventory of all interior floor drains. All drains have been tested to make sure that they drain to the sanitary sewer. When new city owned facilities are constructed, the floor drains are verified and the inventory is updated.

Purpose and Benefit: Floor drains could be direct conduits for pollutants to enter storm drain systems if not properly plumbed. Benefits of a floor drain inventory are record of utility layout inside buildings and increased protection of storm water quality.

Measure of Success: This inventory will be reviewed and updated each time a new city owned or operated facility is acquired or an existing building is abandoned. An accurate floor drain inventory ensures that no waste waters are plumbed to storm water infrastructures or allowed to percolate into the ground untreated.

Responsible Staff: SWPPP Program Coordinator, Public Utilities Field Supervisor

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

Floor Drain Inventory (Available upon request)

PPGH-6: Flood Management Control Assessment

Year Originally Executed: 2016

Last Reviewed: July 28, 2026

Reference Regulation: 4.2.6.8; 4.2.6.8.1

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Engineers, Construction Contractors, Developers and Planners

Description: Orem has a Development Review Committee who screens and approves development plans that are compliant with all City Code and standards. Then, technical development review assesses water quality impacts and flood management controls that are city owned or would discharge to the MS4. The goal is to minimize the impacts to site water quality and hydrology while still meeting project objectives.

Once the technical development review committee is satisfied with the proposed design, the project is approved for construction.

Purpose and Benefit: Reducing runoff from sites and encouraging the infiltration, evapotranspiration, and/or reuse of storm water allows for groundwater recharge and minimizes potentially adverse impacts to downstream waters.

Measure of Success: Document the sites evaluated and the measures used to address the issues with these sites. This will be reviewed annually.

Responsible Staff: Storm Water Manager or designee, City Planner and City Engineer

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

Construction Standards & Specifications

Storm Water Design Manual

Orem City Code

PPGH-7: Public Construction Project Compliance

Year Originally Executed: 2002

Last Reviewed: July 8, 2025

Reference Regulation: 4.2.6., 4.2.6.7.

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description:

The City ensures that any construction projects that the City manages, controls, or performs, follow the same practices as those undertaken by private entities. See MCM 4 for details and UPDES Permit No. UTR090000 section 4.2.4.

Purpose and Benefit: The City seeks to set the proper example for contractors, engineers and developers in their compliance with storm water construction regulations.

Measure of Success: All City projects have a SWPPP on file and the plan is executed properly.

Responsible Staff: Storm Water Coordinator, Storm Water Field Supervisor, City Planner and City Engineer

Funding: Storm Water Utility

Standard Operating Procedures: Refer to MCM 4

PPGH-8: Oversight of Contractors Performing Municipal Maintenance

Year Originally Executed: 2016

Last Reviewed: July 8, 2025

Reference Regulation: 4.2.6.7; 4.2.6.10

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff, Contractors

Description:

The City contracts with private providers for various maintenance needs. The City ensures that its employees are trained on issues relating to their jobs and the potential for exposure of storm water runoff to pollutants. Contractors will be held to the same requirements as the City by staff responsible for overseeing contracted projects.

Purpose and Benefit: Contractors working for the City should be held to the same standards as MS4 staff.

Measure of Success: Annual contractor training log. This training will be given annually to local contractors.

Responsible Staff: Storm Water Field Supervisor, Storm Water Manager, Risk Manager

Funding: Storm Water Utility

Standard Operating Procedures: None

PPGH-9: Retrofit Plan

Year Originally Executed: 2016

Last Reviewed: July 8, 2025

Reference Regulation: 4.2.6.9

Target Pollutants: Nutrients; Hydrocarbons; Heavy Metals; Sediment; Toxic Chemicals; Litter/Trash; Debris; Pathogens

Audiences: MS4 Staff

Description:

The City has developed a program to retrofit City owned and/or operated existing developed sites that are adversely impacting water quality on a case-by-case basis. It will emphasize infiltration, evapotranspiration, and harvesting and reuse of storm water. The program will rank the measures based on pollutant removal expectation. The plan will analyze impact to sites based on proximity to water bodies, protection status of water bodies as defined by the DEQ, hydrologic conditions of water bodies, proximity to sensitive ecosystems and the impact of future sites.

Purpose and Benefit: Evaluating sites that are already adversely affecting water quality and then reducing polluted discharges will lead to better storm water quality.

Measure of Success: Document all City owned sites that have been evaluated and the measures used to address issues with these sites.

Responsible Staff: Storm Water Coordinator, Storm Water Field Supervisor and City Planner

Funding: Storm Water Utility

Standard Operating Procedures: None

Supporting Documents:

City Facility Retrofit Plan (See Appendix C)

APPENDIX A

SUMMARY OF CITY ORDINANCES

Last Reviewed: August 10, 2026

City Code Affecting Storm Water Beyond Chapter 23

All of the following impact the storm water system:

Chapter 22 (most of these requirements are found throughout chapter 22 depending on the type of development)

Buffered sidewalks : OCC 22-8-8.B.2

Open space requirements: PRDs OCC Article 22-7 and Article 22-11 through 18

Open space zones: Article 22-10 allows clustered development

40% Landscaping requirement: 22-17-8

Storm Water Runoff Plan:

- 22-7-12.V. All PRDs must have a Storm Water Runoff Plan to accommodate a 25-year storm and a detention system w/ max allowable discharge rate of 60 g.p.m/ac;
- PD zones-11, 21, 22, 23, 29, 30, 31, 33, 34, 37, 38, 39, 40, 41, 43, 47, student housing developments, and ASH zone must each have 25 year storm plan
- Some private development zones, must have a storm water runoff plan designed to accommodate a 50-year storm. Consult the most current zoning map and requirements specific to each zone.

Landscaped berms: 22-8-9, 22-8-12, 22-11-13 PD Zones, 22-14-19 Residential Zones, 22-17-8.G High Density Apartments

Landscaped islands: Commercial, 22-11-13 PD Zones (found throughout), 22-15-9 Off-street parking [How to improve: maybe do away with the concrete curb so that water can drain]

Setback requirements: found throughout Chapter 22

Limited size of accessory buildings to 8% of the area of the parcel upon which they are located for single-family lots and 12% for multifamily developments in residential zones: 22-6-8.D Piping irrigation ditches: 22-7-13 PRDs, 22-11 required in various PDs

All areas not covered by buildings must be landscaped in newer PDs Article 22-11

Front yard landscaping requirement: 22-14-7.B.1

No waste or trash accumulation: 22-14-7.B.3

General landscaping requirements on all developed lots: 22-14-13

Site plan landscaping requirements: 22-14-20.H.

Chapter 11
Nuisance of waste accumulates: 11-1-3

Chapter 15
Solid waste prohibitions

Chapter 16
Flooding: 16-1-2
Obstructing streets and sidewalks: 16-1-3
Debris, dirt on public street or sidewalk: 16-1-5
Responsibility of clearing sidewalk, curb, and gutter falls on homeowner: 16-1-6
Repairing vehicles on the street: 16-1-7

Chapter 17
Subdivision preliminary plats: 17-4-3.B.13. 25-year storm water drainage plan

Subdivision Regulations & Design Standards: 17-7-6 system must be designed to handle all runoff generated by the subdivision

Chapter 20
Limit what can be put in public sewers: 20-2-2
Prohibited connections: 20-2-13

Chapter 21
Protection of drinking water: 21-2

APPENDIX B

PRIORITY IDDE AREAS

Last Reviewed: August 27, 2026

Designation and Inspection of Priority IDDE Areas

Annually, the City will perform an analysis to determine priority IDDE areas.

The GIS Analyst for Storm Water then creates a map displaying IDDE incidents and more particularly the priority areas. The analysis is standardized so that priority areas are not subjective year to year.

The following criteria are used in delineating Priority IDDE Areas:

- Areas with older infrastructure with increased potential for illicit connections;
- Industrial, commercial, or mixed-use areas;
- Areas with a history of past illicit discharges;
- Areas with a history of illegal dumping;
- Areas with onsite sewage disposal systems;
- Areas upstream of sensitive waterbodies; and,
    - The Provo River, Utah Lake, and Powell Slough
- Any other areas the city determines to have increased potential for illicit discharges.

In Orem, sewer cross connections and overflow events are recorded as an illicit discharge event and would already be accounted for in the analysis.

All Priority IDDE Areas identified on the GIS asset management software are inspected annually using an inspection form housed in the City's GIS based asset management software (Elements).

APPENDIX C

CITY FACILITY RETROFIT PLAN

Last Reviewed: August 10, 2026

4.2.6.9.
The Permittee must develop a plan to retrofit existing developed sites that the Permittee owns or operates that are adversely impacting water quality. The retrofit plan must be developed to emphasize controls that infiltrate, have evapotranspiration, or harvest and use storm water discharges. The plan must include a ranking of retrofit sites based on the following criteria:

- *Proximity to waterbody;*
- *Current assessment of waterbody with the goal to improve impaired waterbodies and protect unimpaired waterbodies;*
- *Hydrologic condition of the receiving waterbody;*
- *Proximity to sensitive ecosystem or protected area; and*
- *Any sites that could be further enhanced by retrofitting storm water controls.*

Orem City Code 23-4-8(13). Retrofit Plan

The City has a plan to retrofit existing developed city owned or operated sites that could adversely impact water quality. The plan emphasizes the use of controls that infiltrate, have evapotranspiration, or harvest and use storm water discharges. Priority for retrofitting existing storm water systems of city owned or operated sites is determined by the following criteria:

1. Proximity to waterbody, sensitive ecosystem or protected area;
2. Hydrological condition of the receiving water body with the goal to improve impaired waterbodies and protect unimpaired waterbodies;
3. Cost efficiency when area is redeveloped for capital improvement projects;
4. Storm water quality regulations at time of storm water system installation (Age); and
5. Any sites that could be further enhanced by retrofitting storm water controls.

Implementation of Retrofit Plan:

- **Step One:** The City shall identify all city owned or operated sites that need to be evaluated for storm water system retrofitting based on the criteria listed in Orem City Code. The City shall perform assessments in order of greatest probable risk to water quality. Sites that are closest to water bodies, sensitive ecosystems, or protected areas will be evaluated first. Sites that were installed prior to 1996 before the City of Orem had an MS4 permit in place will be evaluated second. The remaining city owned or operated sites will be assessed at the time of capital improvement evaluation or redevelopment. The same storm water quality standards for private development are used for city redevelopment projects.
- **Step Two:** In performing the more immediate risk assessments, the City shall use a ranking system one to five, five being the most urgent, considering the following:
    1. Proximity to waterbody, sensitive ecosystem or protected area;
    2. Hydrological condition of the receiving water body with the goal to improve impaired waterbodies and protect unimpaired waterbodies;
    3. Cost efficiency when area is redeveloped for capital improvement projects;
    4. Storm water quality regulations at time of storm water system installation (Age); and
    5. Any sites that could be further enhanced by retrofitting storm water controls.

If the site receives a score of a five in any of the categories examined, the site will be evaluated for retrofitting the existing storm water controls and a concept storm water plan sheet created within one year of the assessment.

- **Step Three**: If the site is required to be retrofitted to improve water quality, the plan to retrofit the facility must be prioritized for inclusion in the next revision of the Storm Water Master Plan capital improvement section.

Methods of Storm Water Control Retrofitting:

The City has ranked control measures, with the highest probability of success to prevent storm water pollution, as listed below in this prioritized list.

- Retrofit existing sumps by adding pretreatment manholes to treat storm water prior to infiltration/injection.
- Require current Orem City storm water retention standards for each city redevelopment project as required in current Orem City Municipal Code.
- Require pretreatment of any storm water before it leaves the site or infiltrates into the ground.
- Require roof drainage on redevelopment projects to be directed to landscaping and infiltrated where technically feasible.
- Encourage curb cuts to utilize pervious areas for retention and infiltration of storm water and to help meet LID requirements.
- Encourage vegetative areas in detention/retention areas to aid in infiltration and evapotranspiration of storm water and to help meet LID requirements.
- Expanded use of vegetative swales
- Use of Green Roofs when feasible

Storm water harvesting and use is not practical or useful in improving water quality in our semi-arid area. The focus for retrofitting is on controls that utilize infiltration and evapotranspiration.