



# STORM WATER MANAGEMENT PROGRAM

## 2021 - 2026



Prepared by:





In the last decade, Washington City has experienced unprecedented growth. The impact of the area's increased urbanization is especially evident on the surface water resources in the area. With this explosive growth and revitalization, the City recognizes a need for a more proactive and comprehensive approach to manage its stormwater runoff.

This Storm Water Management Program is a key step towards Washington City's goal of protecting and enhancing the natural water resources that exist throughout the region. Our rivers and creeks are critical to the City, and over the last decade we've made progress in improving water quality. The privilege of living in nature's best work demands that residents, land developers, engineers, and government agencies see the environment as their primary and most precious resource. The challenge is to develop a community that maintains the environment and lives in harmony with nature. The methods we choose in developing our projects demonstrate our values and shape not only our present, but our future as well. Washington City is committed to reducing its impact on natural waters within the City's influence.

The plan presented here is a major step forward. It calls for immediate actions that will require some types of control measures, but also outlines further actions and techniques the City will need to implement in the coming years in order to conform with local, state, and federal regulations. This Storm Water Management Program has been developed to comply with state regulations and Federal Storm Water Phase II Final Rule (Phase II Rule), which requires operators of small municipal separate storm sewer systems (MS4s) to obtain a National Pollutant Discharge Elimination System (NPDES) permit. Critical to future stormwater management control measures will be innovative approaches to funding future needs. In all this, the City's Storm Water Management Program continues us along the path of progress that will make Washington City an even better place to live, work, and visit.

#### **Signatory Requirement**

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Michael D. Shaw  
Public Works Director

November 8, 2021

Date

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## EXECUTIVE SUMMARY

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In the last decade, Washington City has experienced unprecedented growth. The impact of the increased urbanization is especially evident on surface water resources in the area. This growth and revitalization requires an increased need to protect and enhance the natural water resource features that exist throughout the region. The City recognizes a need for a more proactive and comprehensive approach to manage its stormwater runoff. Washington City is committed to reducing its impact on waters within the City's influence.

The purpose of the Stormwater Management Program (SWMP) is to provide Washington City the basis for establishing effective rules, regulations, and projects that will reduce the potential for stormwater damage to life, public health, safety, property, and the environment. The City's previous SWMP and its long-term objectives have been reviewed by the City annually, and form the basis for the goals, policies and implementation actions that constitute the current SWMP.

### General Water Quality Concerns

Washington City has complete authority and responsibility for planning, building, operating, maintaining and regulating the stormwater drainage system within the City's permit area. Section 303(d) of the Federal Clean Water Act (CWA), requires states to identify waters that fail to meet water quality standards, and are required to develop Total Maximum Daily Loads (TMDLs) to address the specific pollutants contributing to the water quality degradation. The Utah Department of Environmental Quality (UDEQ) has listed segments of the Virgin River within or adjacent to Washington City as being "water quality limited" on its 2002 303(d) list. The Primary pollutant of concern is Total Dissolved Solids (TDS).

The Department of Environmental Quality has acknowledged that dissolved solids from natural sources in the Virgin River, especially Pah Tempe Hot Springs, make it impossible to meet the State standard of 1,200 mg/l. Approximately 60% of the total TDS loading in this segment of the Virgin River comes from the Pah Tempe Hot Spring. Pah Tempe likely has a greater impact on the water quality of the river than any other source of pollution in the watershed. The UDEQ proposed a site-specific total dissolved solids concentration of 2,360 mg/l for the Virgin River from Pah Tempe downstream as a criterion that represents the natural background conditions of the river. The EPA approved this site-specific TMDL in 2004. More information regarding the City's discharges on waters that fail to meet water quality standards can be found in Section 3.

## **Goals and Policies**

The goal of this Stormwater Management Program (SWMP) is to establish the framework and goals that will direct stormwater management for Washington City. The City has developed three overall SWMP goals. The goals extend from preventing pollutants in new and existing development runoff to preventing the loss of water quality in recreational water sources and habitat. The overall long-term goals for this SWMP are:

- Preserve and maintain surface waters, wetlands, and riparian areas as a functional and aesthetically pleasing for people, fish, and wildlife.
- Educate industries, businesses, and citizens on the need for water quality protection.
- Provide guidelines and regulations for the development and general community to facilitate preserving stormwater quality.

The policies and implementation actions of these goals are presented in Section 3.3 of this document.

## **UPDES STORMWATER Management Program**

This Stormwater Management Program (SWMP) has been developed to comply with the Federal Stormwater Phase II Final Rule (Phase II Rule), which requires operators of small municipal separate storm sewer systems (MS4s) to obtain a National Pollutant Discharge Elimination System (NPDES) permit. The Phase II Rule requires compliance for MS4s that serve areas designated by the Executive Secretary of the Utah Water Quality Board in accordance with the designation criteria contained in the General Permit.

Washington City gets its discharge authorization from the Utah Department of Environmental Quality Small MS4 General UPDES Permit No. UTR 090000. This authorization is conditioned upon the City meeting the eligibility requirements of the permit.

Six Minimum Control Measures (MCMs) constitute the majority of NPDES SWMP requirements. These minimum control measures include the following:

### **Public Education and Outreach**

Distributing educational materials and performing outreach to inform citizens and organizations about the impact polluted stormwater runoff discharges can have on water quality.

### **Public Involvement and Participation**

Providing opportunities for citizens to participate in program development and implementation.

### **Illicit Discharge Detection and Elimination**

Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system.



### **Construction Stormwater Runoff Management**

Developing, implementing, and enforcing an erosion and sediment control program for construction activities 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.

### **Post-Construction Stormwater Runoff Management**

Developing, implementing, and enforcing a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas.

### **Pollution Prevention in Municipal Operations/Good Housekeeping**

Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations.

## **Report Organization**

Specific Best Management Practices (BMPs) are proposed for each Minimum Control Measure, which are intended to support the reduction of pollutants in stormwater runoff to the maximum extent practicable (MEP) as required by the Federal-NPDES Phase II rules. The proposed BMPs for the SWMP are presented in sections five (5) through ten (10). The assessments and evaluations of the City's current SWMP and general water quality concerns are presented in sections one (1), three (3), and four (4). These assessments form the basis for the UPDES program elements presented in Sections 5 through 10. The form and content of the six minimum control measure elements follows the requirements provided in DEQ's MS4 permit application guidelines.

Under each section, a summary table will be provided with each BMP and the corresponding UPDES permit, lead agency, and responsible party. Each BMP section will include at a minimum a description of the BMP, Existing Program Elements, Proposed MS4 Activities, Measurable Goals, and an Implementation Schedule. The goals and implementation schedule will be included in a table at the end of each BMP section.

Throughout this document, the UPDES permit part will be referenced prior to the applicable report section(s) to demonstrate compliance, aid the reviewer, and provide information on where additional requirements can be found. The following icon will be provided along with the applicable UPDES permit section:





## TERMS AND DEFINITIONS

**Analytical monitoring:** refers to monitoring of water bodies (streams, ponds, lakes, etc.) or of stormwater, according to UAC R317-2-10 and 40 CFR 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants," or to State or Federally established protocols for biomonitoring or stream bioassessments.

**Beneficial Uses:** means uses of the Waters of the State, which include but are not limited to: domestic, agricultural, industrial, recreational, and other legitimate beneficial uses.

**Best Management Practices (BMPs):** Activities or structural improvements that help reduce the quantity and improve the quality of stormwater runoff. BMPs include treatment requirements, operating procedures and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Clean Water Act (CWA):** Legislation that provides statutory authority for the NPDES program, which is Public law 92-500; 33U.S.C. 1251 et seq. Also known as the Federal Water Pollution Control Act.

**Control Measure:** refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to Waters of the State.

**Common plan of development or sale:** means one plan for development or sale, separate parts of which are related by any announcement, piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, plat, blueprint, contract, Permit application, zoning request, computer design, etc.), physical demarcation (including contracts) that identify the scope of the project. A plan may still be a common plan of development or sale even if it is taking place in separate stages or phases, is planned in combination with other construction activities, or is implemented by different owners or operators.

**Drinking water:** Water, treated or untreated, which is intended for human use and consumption and considered to be free of harmful chemicals and disease-causing bacteria, cysts, viruses, or other microorganisms.

**Discharge:** refers to discharges from the Municipal Separate Storm Sewer System (MS4).

**Dry weather screening:** is monitoring done in the absence of storm events to discharges representing, as much as possible, the entire storm drainage system for the purpose of obtaining information about illicit connections and improper dumping.

**Environmental Protection Agency (EPA):** The mission of the Environmental Protection Agency is to protect human health and the environment. <https://www.epa.gov/aboutepa>

**Erosion:** Removal of soil particles by wind and water. Often the eroded debris (silt or sediment) becomes a pollutant in stormwater runoff. Erosion occurs naturally but can be intensified by human activities such as farming, development, road-building, and timber harvesting.

**Escalating enforcement procedures:** refers to a variety of enforcement actions in order to apply as necessary for the severity of the violation and/or the recalcitrance of the violator.

**General Permit:** means a Permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual Permits being issued to each discharger.

**Ground water:** Water that flows below the ground surface through saturated soil, glacial deposits, or rock.

**Grading:** The cutting and/or filling of the land surface to a desired slope or elevation.

**High quality waters:** means any water, where, for a particular pollutant or pollutant parameter, the water quality exceeds that quality necessary to support the existing or designated uses, or which supports an exceptional use.

**Household hazardous materials:** Common everyday products that people use in and around their homes-including paint, paint thinner, herbicides, and pesticides-that, due to their chemical nature, can be hazardous if not properly disposed of.

**Hydrology/Hydrologic Cycle:** The science of hydrologic cycle is addressing the properties, distribution, and circulation of water across the landscape, through the ground, and in the atmosphere.

**Illicit connection:** means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

**Illicit discharge:** means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a UPDES Permit (other than the UPDES Permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

**Impervious Surface or Cover:** The characteristic of a material which prevents the infiltration or passage of liquid through it. This may apply to roads, streets, parking lots, rooftops and sidewalks.

**Impaired waters:** means any segment of surface waters that has been identified by the Division as failing to support one or more of its designated uses. The Division periodically compiles a list of such waters known as the 303(d) List.

**Large MS4:** Large municipal separate storm sewer system means all municipal separate storm sewers that are located in an incorporated place with a population of 250,000 or more as determined by the current Decennial Census by the Bureau of the Census.

**Litter:** Litter is any solid waste object (disposable item or resource) that can be held or carried in a person's hand that is left behind or placed in an inappropriate location. Any such material or item disposed of in an inappropriate manner is to be regarded as litter - the end outcome of an environmentally undesirable disposal action.

**Low Impact Development (LID):** is an approach to land development (or re-development) that works with nature to more closely mimic pre-development hydrologic functions. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. There are many practices that have been used to adhere to these principles such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements.

**MS4:** is an acronym for "municipal separate storm sewer system".

**Maximum Extent Practicable (MEP):** is the technology-based discharge standard for Municipal Separate Storm Sewer Systems established by paragraph 402(p)(3)(B)(iii) of the Federal Clean Water Act (CWA).

**Medium MS4:** Medium municipal separate storm sewer system means all municipal separate storm sewers that are located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census.

**Monitoring:** refers to tracking or measuring activities, progress, results, etc.

**Municipal separate storm sewer system:** means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) pursuant to paragraphs R317-8-1.6(4), (7), & (14), or designated under UAC R317-8-3.9(1)(a)5.

**National Pollutant Discharge Elimination System (NPDES):** Established by Section 402 of the Clean Water Act, this federally mandated system is used for regulating point source and stormwater discharges.

**Natural Filter:** A grassed, wooded or vegetative strip that acts as a filter for the runoff before the water enters a stream.

**Notice of Intent (NOI):** An application to notify the permitting authority of a facility's intention to be covered by a general permit; exempts a facility from having to submit an individual or group application.

**Non-analytical monitoring:** refers to monitoring for pollutants by means other than UAC R317-2-10 and 40 CFR 136, such as visually or by qualitative tools that provide comparative or rough estimates.

**Non-Point Source Pollution:** Pollutants from many diffuse sources. Non-point source pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water.

**Nutrients:** A substance that provides food or nourishment, such as usable proteins, vitamins, minerals or carbohydrates. Fertilizers, particularly phosphorus and nitrogen, are the most common nutrients that contribute to eutrophication.

**Pathogens:** Microorganisms that can cause disease in other organisms or in humans, animals, and plants. They may be bacteria, viruses, or parasites and are found in sewage, in runoff from animal farms or rural areas populated with domestic and/or wild animals, and in water used for swimming. Fish and shellfish contaminated by pathogens, or the contaminated water itself, can cause serious illnesses.

**Point Source Pollution:** Pollutants from a single, identifiable source such as a factory or refinery; also called single-point-source pollution. Most of this pollution is highly regulated at the state and local levels.

**Pollutants:** A contaminant existing at a concentration high enough to endanger the environment or the public health or to be otherwise objectionable.

**Priority construction site:** means a construction site that has potential to threaten water quality when considering the following factors: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-stormwater discharges and past record of non-compliance by the operators of the construction site.

**Redevelopment:** is the replacement or improvement of impervious surfaces on a developed site.

**Runoff:** That portion of the precipitation on a drainage area that is discharged from the area in the stream channels. Types include surface runoff, ground water runoff or seepage. Drainage or flood discharge that leaves an area as surface flow or as pipeline flow.

**Sanitary sewer (different from the storm sewer system):** A system of underground pipes that carries sanitary waste or processed wastewater to a treatment plant.

**Sediment:** Solid material, both mineral and organic, that is being transported or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level. Soil, sand, and minerals washed from land into water, usually after rain. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

**Small municipal separate storm sewer system (MS4):** is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all Small MS4s located in “urbanized areas” (UAs) as defined by the Bureau of the Census (unless waived by the UPDES Permitting authority), and on a case-by-case basis those Small MS4s located outside of UAs that the UPDES Permitting authority designates.

**Storm drain:** An opening leading to an underground pipe or open ditch for carrying surface runoff, separate from the sanitary sewer or wastewater system.

**Storm Drain System:** A vast network of underground pipes and open channels designed for flood control, which discharges straight to the ocean.

**Stormwater:** Precipitation that accumulates in natural and/or constructed storage and stormwater systems during and immediately following a storm event.

**Stormwater pollution:** Water from rain, irrigation, garden hoses or other activities that picks up pollutants (cigarette butts, trash, automotive fluids, used oil, paint, fertilizers and pesticides, lawn and garden clippings and pet waste) from streets, parking lots, driveways and yards and carries them through the storm drain system and straight to the ocean. Also included are oils, grease and metals.

**Stormwater Management Program (SWMP):** means a set of measurable goals, actions, and activities designed to reduce the discharge of pollutants from the Small MS4 to the maximum extent practicable and to protect water quality.

**Stream:** A body of water, confined within a bed and banks and having a detectable current. Stream is the umbrella term used in the scientific community for all flowing natural waters. In a river or stream, the water is influenced by gravity and flows downhill to reduce its potential energy. The movement of water in a stream is called the current and varies from place to place and time to time depending upon the volume of water, the slope, and shape and other characteristics of the bed.

**Total Maximum Daily Load (TMDL):** refers to a study that: 1) quantifies the amount of a pollutant in a stream; 2) identifies the sources of the pollutant; and 3) recommends regulatory or other actions that may need to be taken in order for the impaired waterbody to meet water quality standards.

**Urbanized area:** is a land area comprising one or more places and the adjacent densely settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.

**Water (hydrologic) cycle:** The flow and distribution of water from the sky, to the Earth's surface, through various routes on or in the Earth, and back to the atmosphere. The main components are precipitation, infiltration, surface runoff, channel and depression storage, and groundwater.

**Waters of the State:** means all streams, lakes, ponds, marshes, water-courses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private which are contained within, flow through, or border upon this state or any portion thereof, except bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, or a public health hazard, or a menace to fish and wildlife which shall not be considered to be "Waters of the State" under this definition ("UAC" R317-1-1.32).

**Water Quality:** Water is essential to human life and to the health of the environment. As a valuable natural resource, it comprises marine, estuarine, freshwater (river and lakes) and groundwater environments, across coastal and inland areas. Water has two dimensions that are closely linked - quantity and quality. Water quality is commonly defined by its physical, chemical, biological and aesthetic (appearance and smell) characteristics. A healthy environment is one in which the water quality supports a rich and varied community of organisms and protects public health. Water quality in a body of water influences the way in which communities use the water for activities such as drinking, swimming or commercial purposes. More specifically, the water may be used by the community for:

1. Supplying drinking water
2. Recreation (swimming, boating)
3. Irrigating crops and watering stock
4. Industrial processes
5. Navigation and shipping
6. Production of edible fish, shellfish and crustaceans
7. Protection of aquatic ecosystems
8. Wildlife habitats
9. Scientific study and education

**Watershed:** Geographical area that drains to a specified point on a water course, usually a confluence of streams or rivers, can also be known as drainage area, catchments, or a river basin.

**Wetland:** An area that is inundated or saturated by surface water or groundwater at a frequency, duration, and depth sufficient to support a predominance of emergent plant species adapted to growth in saturated soil conditions.

# SECTION 1 - INTRODUCTION

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## 1.1 BACKGROUND AND CONTEXT

The Washington City Stormwater Management Program (Stormwater Program) has been developed to provide policy and management guidance for activities affecting stormwater throughout Washington City. It is intended to help the City comply with certain State and Federal water quality requirements, and to meet local water resource management objectives. Through the implementation of the policies and management practices embodied in the Stormwater Program, Washington City hopes to improve stormwater quality and prevent negative impacts to the region's waters.

In 2000, Washington City joined many small to medium-sized cities throughout the nation that fell under the Federal Clean Water Act (CWA) requirements to apply for and maintain a Municipal Separate Storm Sewer System (MS4) permit under the National Pollutant Discharge Elimination System (NPDES) program. Among the many provisions of the State and Federal regulations guiding the issuance of the stormwater discharge permit, is the requirement that the City demonstrate its efforts to reduce pollution in urban stormwater "to the maximum extent practicable." The Clean Water Act joins the Endangered Species Act (ESA) and the Safe Drinking Water Act (SDWA) in protecting the "beneficial uses" of the nation's waters, including drinking, recreation, and fish/habitat uses.

Washington City is situated on the Virgin River, south of the Quail Creek Diversion and approximately 6 miles north of the confluence of the Santa Clara River. The area includes additional tributary streams that are traditionally dry most of the year, various other open waterways used for irrigation purposes, and a piped storm sewer system.

In the past, the City's stormwater management practices focused on constructing new storm sewer pipe systems to replace historic irrigation ditches and send urban stormwater to the river as quickly as possible. Conveyance has been a necessary emphasis of the stormwater management plan so that water quality issues could be addressed more effectively and efficiently. The City recognized that previous, traditional approaches led to deterioration of water quality by reducing the stormwater management functions associated with natural drainage ways, wetlands, riparian areas, and floodplains. Washington City began to review the condition of the City's water resources and management capabilities in 1999 and 2000 to comply with the Federal and State regulatory programs, such as the CWA, ESA, Utah Water Quality Act, and SDWA. In 2003, Washington City published its first Stormwater Management Program created with the NPDES guidelines. The Stormwater Program and its long-term objectives have been reviewed by the City annually, and form the basis for the goals, policies and implementation actions that constitute the current Stormwater Management Program.



## 1.2 DESCRIPTION OF PERMIT AREA

Washington City was founded on April 15, 1857, and currently serves an estimated population of 27,999 people within the city limits. The geographic boundaries of the permit area encompass approximately 35 square miles located within the city limits. Washington City is directly east of St George and spans from Interstate 15, Exit 10 to Exit 16. The permit area is bisected by the Virgin River, the primary receiving water for the City. A vicinity map is presented in Figure 1.0.



### UPDES Sec. 3.1.1

Washington City has complete authority and responsibility for planning, building, operating, maintaining and regulating the stormwater drainage system within the permit area. The major receiving stream within the City's jurisdiction is the Virgin River. Under Section 303(d) of the CWA, states are required to identify waters that fail to meet the water quality standards, and are required to develop Total Maximum Daily Loads (TMDLs) to address the specific pollutants contributing to the water quality degradation. The Utah Department of Environmental Quality has listed segments of the Virgin River within or adjacent to Washington City as being "water quality limited" on its 2002 303(d) list. The Primary pollutant of concern is TDS. In 2004, the EPA approved TMDL levels recommended by the Utah Department of Environmental Quality in their study "*TMDL Water Quality Study of the Virgin River Watershed*". (UDEQ 2004).

It was determined in the study that the Virgin River TMDL of dissolved solids from natural sources, especially Pah Tempe Hot Springs, made it impossible to meet the State standard of 1,200 mg/l. Approximately 60% of the total TDS loading in this segment of the Virgin River comes from the Pah Tempe Hot Spring. Pah Tempe likely has a greater impact to the water quality of the river than any other source of pollution in the watershed. The UDEQ study proposed a site-specific total dissolved solids concentration of 2,360 mg/l for the Virgin River from Pah Tempe downstream as a criterion that represents the natural background conditions of the river. More information regarding the City's discharges on waters that fail to meet water quality standards can be found in Section 3.

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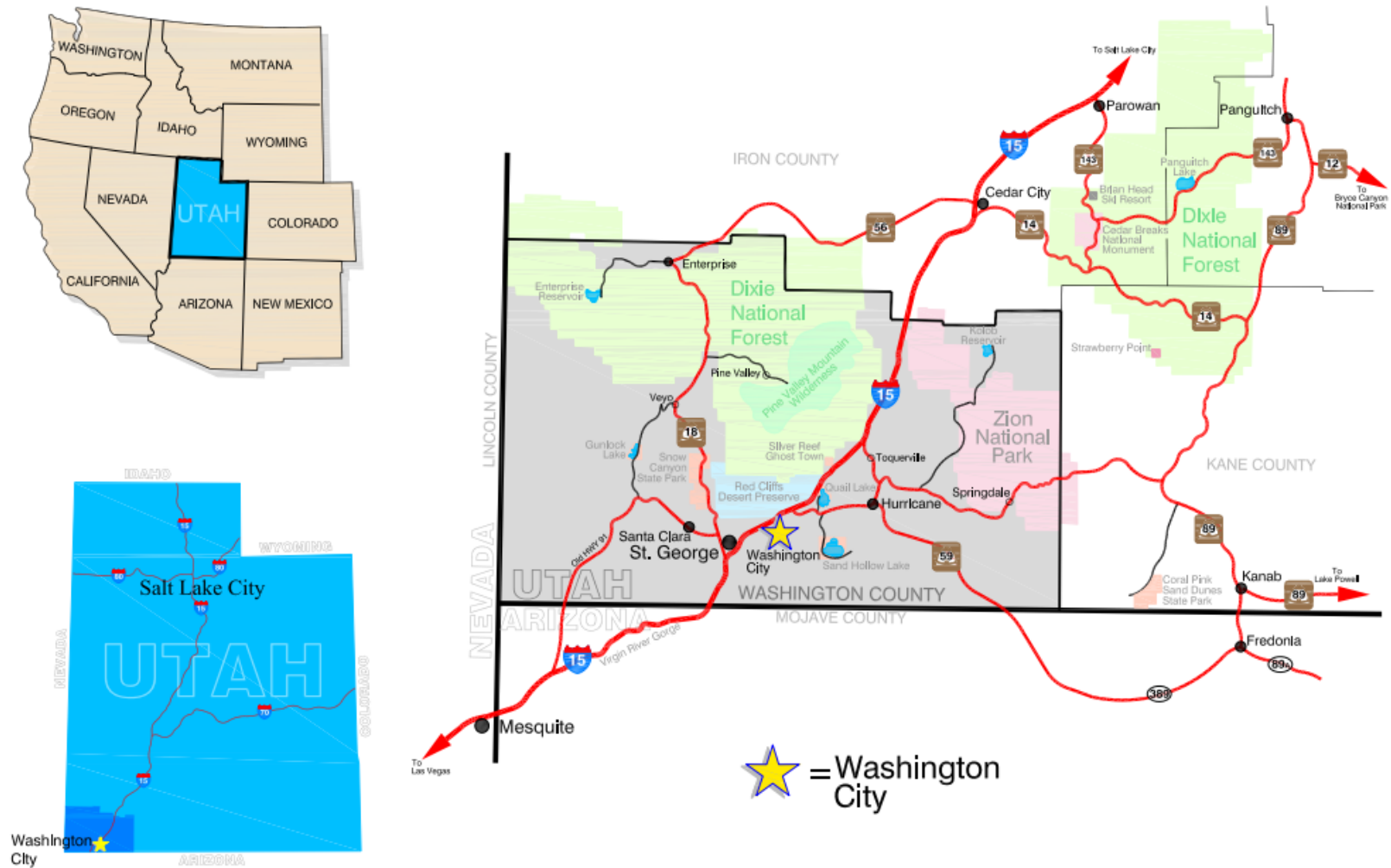


Figure 1.0: Vicinity Map

## 1.3 SWMP RESPONSIBLE PARTIES



### UPDES Sec. 4.1.3.2

The City is responsible for implementing surface water management activities within its boundaries, including the planning, design, construction, operation, and maintenance of the stormwater drainage system. In response to the NPDES Phase II stormwater requirements, the City has developed a MS4 plan addressing each of the six required Minimum Control Measures, as specified in the Federal-NPDES Phase II rules. The City's stormwater management program is the responsibility of the Public Works Department. However, the implementation of the City's MS4 plan will extend throughout the City organization. Please see Figure 1.1 Washington City Stormwater Organizational Chart for departments involved in implementing the Stormwater Management Program. The Department of Public Safety will provide enforcement support when necessary.

The Washington City Stormwater Coordinator will be responsible for the implementations of most BMPs and their evaluation. The involvement of the other City Departments will be utilized when possible.

Please contact:

**Sean Barry**

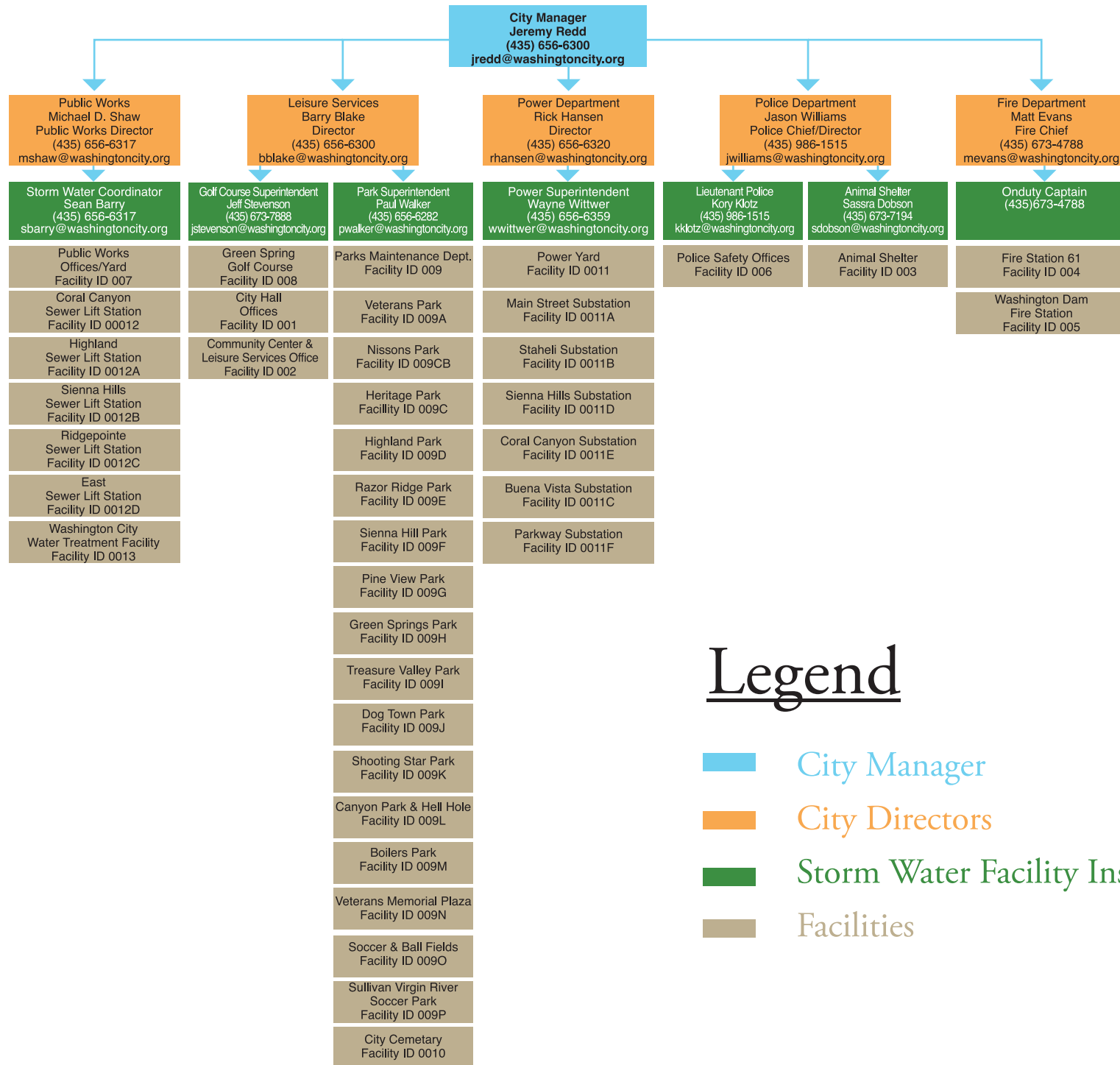
Stormwater Coordinator

(435)656-6317

[sbarry@washingtoncity.org](mailto:sbarry@washingtoncity.org)

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# Washington City Stormwater Organizational Chart



## Legend

- City Manager
- City Directors
- Storm Water Facility Inspectors
- Facilities

## Certification And Signature Requirements



UPDES Sec. 6.8

All notices of intent, stormwater management programs, stormwater pollution prevention plans, reports, certifications or information either submitted to the Division or that the Permit requires to be maintained by Washington City, shall be signed, dated and certified as follows:

- All Permit applications shall be signed by either a principal executive officer or ranking elected official.
- Certification. Any person signing documents shall make the following 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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

## 1.4 FISCAL ANALYSIS & PROGRAM FUNDING

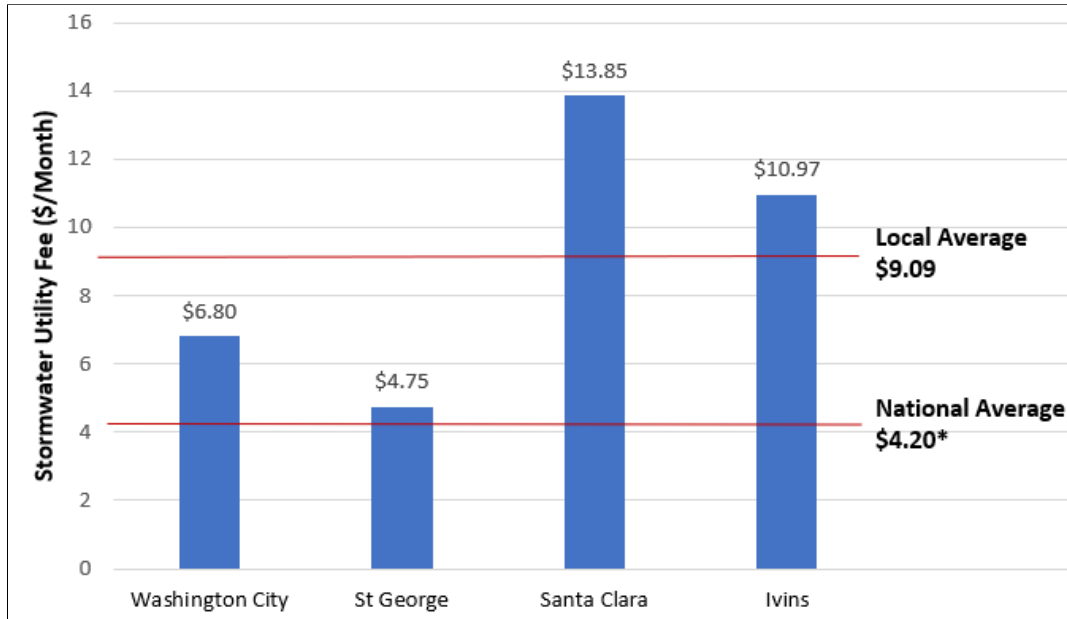
### Stormwater Utility Fee



UPDES Sec. 4.1.2.2

Operations within the City's Stormwater Management Program, including development and implementation of the MS4 plan, is completely funded by user fees, which are billed on a monthly basis. In 2004, the City Council adopted ordinance 2004-14, a stormwater utility ordinance to establish and implement a stormwater utility fee. Single family residences are charged a flat fee based on average amounts of impervious area. This fee constitutes an equivalent service unit (ESU). All non-single family residential parcels pay a multiple of this equivalent service unit. The multiple factor, expressed in ESUs, is calculated by dividing total square feet of impervious surface by three thousand five hundred (3,500) square feet, rounded to the nearest whole number. Ordinance 2004-14 is available on the Washington City website and provides additional information on stormwater utility fees. [www.WashingtonCity.org](http://www.WashingtonCity.org)

Washington City charges a \$6.80 stormwater utility fee for single family residences. All non-single family residences pay a multiple of this rate based on amounts of impervious surface area. As illustrated in Figure 1.2, the City has the second lowest drainage user fee in the urbanized area which includes Washington City, St George, Santa Clara, and Ivins.



**Figure 1.2: Stormwater Utility Fees in the Urbanized Areas**

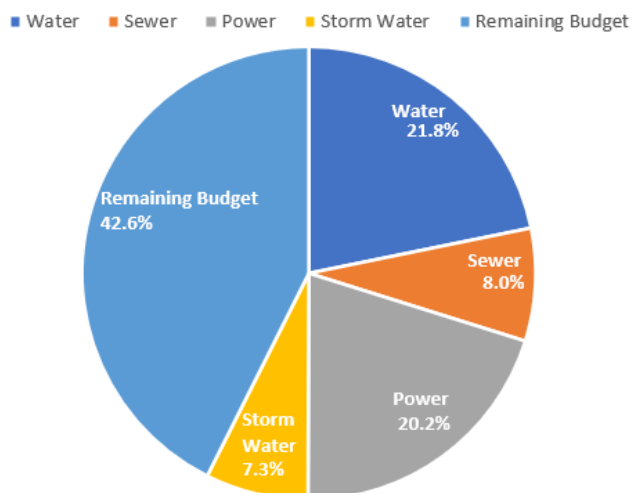
## Washington City Stormwater Budget



### UPDES Sec. 4.1.2.2

Section 4.1.2.2 of the permit requirements states: “Each Permittee must secure the resources necessary to meet all requirements of this permit. Each Permittee must conduct an annual analysis of the capital and operation and maintenance expenditures needed, allocated, and spent as well as the necessary staff resources needed and allocated to meet the requirements of this permit, including any development, implementation, and enforcement activities required. Each permittee must submit a summary of its fiscal analysis with each annual report.”

Washington City will conduct an annual analysis of its capital, operation and maintenance expenditures that are spent and allocated to meet the MS4 permit requirements. A summary of this analysis will be submitted to DEQ with the City’s annual report. Figure 1.3 represents a breakdown of Washington City’s 2021 fiscal year budget. Stormwater expenditures constitute approximately 7.3% of the City’s total operating budget. Washington City’s approved total budget for fiscal year 2021 is \$76,737,165.



**Figure 1.3:** Stormwater Budget for Fiscal Year 2021

## 1.5 NPDES PHASE II BMP REQUIREMENTS



### UPDES Sec. 4.1.3

Specific Best Management Practices (BMPs) are proposed for each Minimum Control Measure, which are intended to support the reduction of discharges of pollutants in stormwater runoff to the maximum extent practicable (MEP) as required by the Federal-NPDES Phase II rules. In Sections 5 through 10: Minimum Control Measures, a summary table is provided for each Minimum Control Measure at the first of each section. This summary table includes a list of the selected BMPs, the corresponding UPDES permit requirement, the lead agency, and the responsible party.

Following the summary sheet for each Minimum Control Measure, additional information is provided for each BMP and the following information is provided in accordance with the UPDES requirements:

1. a brief description of the BMP;
2. a description of existing program elements;
3. the proposed MS4 plan activities
4. measurable goals; and
5. an implementation schedule.



### UPDES Sec. 4.1.3.1

The BMP development/implementation schedule shows when certain activities will be completed on a yearly basis. The NPDES Phase II rules provide for a five-year implementation schedule starting from November 8, 2021. This date corresponds to 180 days after the UPDES general permit became effective.



## SECTION 2: REGULATORY CONTEXT

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### 2.1 FEDERAL CLEAN WATER ACT (CWA)

The CWA is Federal law regulating water quality and discharges to waterways under State and Federal jurisdiction. It contains the predominant Federal requirements guiding the development and implementation of Washington City's Stormwater Program.

The EPA website provides the following history on the Clean Water Act:

"The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972. As amended in 1977, the law became commonly known as the Clean Water Act (CWA).

The 1977 amendments:

- Established the basic structure for regulating pollutant discharges into the waters of the United States.
- Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry.
- Maintained existing requirement to set water quality standards for all contaminants in surface waters.
- Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.
- Funded the construction of sewage treatment plants under the construction grants program.
- Recognized the need for planning to address the critical problems posed by non-point source pollution.

Subsequent amendments modified some of the earlier CWA provisions. Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of treatment plants built under the program. Changes in 1987 phased out the construction grants program, replacing it with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund (CWSRF). This new funding strategy addressed water quality needs by building on EPA-State partnerships.

## **2.2 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM**

In 1999, the U.S. Environmental Protection Agency (EPA) finalized what have come to be commonly known as the NPDES “Phase II” rules for stormwater. These rules govern small to medium-sized cities of 50,000-100,000 in population across the country. The Phase II rules also apply to “urbanized” areas with the same population bracket. Washington City, St George, Ivins, and Santa Clara being connected constitute an urban area based on state and federal population density specifications.

Authorization to discharge under the Utah Pollutant Discharge Elimination System (UPDES) General Permit requires that Washington City’s MS4 plan address six minimum areas, which are termed “Minimum Control Measures.” These areas are as follows:

1. Public Education and Outreach on Stormwater Impacts;
2. Public Involvement/Participation;
3. Illicit Discharges Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Post-Construction Stormwater Management for New Development and Redevelopment;  
and
6. Pollution Prevention in Municipal Operations.

Under each of these areas described above, the City’s MS4 plan must contain the following information:

- The structural and non-structural Best Management Practices (BMP)s that the permittee or another entity will implement for each of the stormwater minimum control measures;
- The measurable goals (Benchmarks) for each of the BMPs including, as appropriate, the months and years in which the permittee will undertake required actions, including interim milestones and the frequency of the action; and
- The person or persons responsible for implementing or coordinating the BMPs for the permittee’s MS4 plan.

In addition to the requirements listed above, the permittee must provide a rationale for how and why each of the BMPs are selected and measurable goals for the permittee’s stormwater management program.

## SECTION 3: WATER QUALITY - SWMP GOALS

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### 3.1 TMDL IDENTIFICATION AND POLLUTANT MINIMIZATION



#### UPDES Sec. 3.1.1.1

Under Section 303(d) of the CWA, states are required to identify waters that fail to meet water quality standards, and are required to develop Total Maximum Daily Loads (TMDLs) to address the specific pollutants contributing to the water quality degradation. The Utah Department of Environmental Quality has listed segments of the Virgin River within or adjacent to Washington City as being “water quality limited” on its 2002 303(d) list. The Primary pollutant of concern is Total Dissolved Solids (TDS).



#### UPDES Sec. 3.1.1.2

In September 2004, the EPA approved TMDL levels recommended by the Utah Department of Environmental Quality in their study titled *TMDL Water Quality Study of the Virgin River Watershed* (TMDL Study). It was determined in the study that the Virgin River TMDL of dissolved solids from natural sources, especially Pah Tempe Hot Springs, made it impossible to meet the State standards of 1,200 mg/l. Pah Tempe likely has a greater impact on the water quality of the river than any other source of pollution in the watershed. Approximately 60% of the total TDS loading in the segment of the lower Virgin River comes from the Pah Tempe Hot Spring. The TMDL Study proposed a site-specific total dissolved solids concentration of 2,360 mg/l for the Virgin River from Pah Tempe downstream as a criterion that represents the natural background conditions of the river. The EPA approved the recommended site-specific TDS concentration.

Upon adoption of the TMDLs, it was understood that all parties with discharges to the rivers, including Washington City, would either be allocated pollution limits for discharges to the affected waters i.e., numerical limits based requirements, or be required to implement certain practices and provisions to minimize the pollutant (BMP based requirements).

The TMDL Water Quality Study of the Virgin River Watershed recommended implementing Best Management Practices (BMPs) and regulations to minimize the TDS loading. Several specific BMPs were suggested to reduce the loadings and impacts in the Virgin River from Bloomington to the Washington Fields Diversion (UDEQ 2004). Figure 3.0 provides a wider perspective of major washes and rivers in Washington County that constitute the Virgin River Watershed.



#### UPDES Sec. 3.2.1 - 3.2.1.3

The Virgin River Watershed segments in or near Washington City do not currently have any TMDL pertaining to nutrient pollution (excess nitrogen and phosphorus); however, the Division requires the identification and targeting of sources that are contributing, or have the potential to contribute, nitrogen and phosphorus to waters of the state.



#### UPDES Sec. 4.2.1.1

According to the EPA, the primary sources of excess nitrogen and phosphorus include fertilizers, yard and pet waste, and certain soaps and detergents. These along with any other potential sources of nitrogen and phosphorus will be implemented into the Public Education and Outreach BMPs identified in Section 5 to inform homeowners and businesses about the proper utilization and disposal of such items.

If a TMDL is developed and approved in the future for any other pollutants, Washington City will update this section to meet the requirements of UPDES Permit 3.1.1.2.



**Figure 3.0:** Virgin River Watershed within Washington County

## 3.2 BMP IMPLEMENTATION FOR PRIMARY POLLUTANT



#### UPDES Sec. 3.1.2

The 2004 study by the DEQ recommended several BMPs to reduce loadings with varying engineering intensity levels. The recommended BMPs are presented in Table 3.3.

**Table 3.3:** DEQ Recommended BMPs

<b>Practice Number</b>	<b>Practice Name</b>	<b>Intensity Level</b>
<b>100</b>	<b>Construction Site Management</b>	<b>Passive Management</b>
<b>140</b>	<b>Irrigation Water Management</b>	<b>Passive Management</b>
160	Nutrient Management	Passive Management
190	Residue Management	Passive Management
200	Cover Crop	Active Management
<b>210</b>	<b>Exotic Removal</b>	<b>Active Management</b>
<b>221</b>	<b>Seeding</b>	<b>Active Management</b>
240	Filter Strips	Active Management
<b>80</b>	<b>Pole/Post Plantings</b>	<b>Active Management</b>
270	Waste Utilization	Active Management
<b>331</b>	<b>Erosion Control Fabric</b>	<b>Mild Engineering</b>
<b>333</b>	<b>Silt Fence</b>	<b>Mild Engineering</b>
<b>334</b>	<b>Straw Bale</b>	<b>Mild Engineering</b>
<b>400</b>	<b>Detention Basin</b>	<b>Moderate Engineering</b>
421	Rock Vane	Moderate Engineering
422	Rock Weir	Moderate Engineering
<b>423</b>	<b>Toe Rock</b>	<b>Moderate Engineering</b>
<b>450</b>	<b>Irrigation Pipeline</b>	<b>Moderate Engineering</b>
452	Irrigation Sprinklers	Moderate Engineering
<b>454</b>	<b>Irrigation Tail Water Recovery</b>	<b>Moderate Engineering</b>
520	Cross-Vane Weir Diversion	Intense Engineering
<b>521</b>	<b>Rip-Rap Rock</b>	<b>Intense Engineering</b>
<b>522</b>	<b>Stream Channel Stabilization</b>	<b>Intense Engineering</b>

\*TMDL Water Quality Study of the Virgin River Watershed

The bold-typed items of Table 3.0 represent the BMPs that Washington City is currently implementing or partnering with other organizations to implement. Since the TMDLs were established in 2004, the City has taken a proactive approach to reducing TDS loadings. One of the most significant improvements completed in the last six years was piping all the irrigation canals and ditches being used for runoff and irrigation in Washington Fields. Runoff from this large agricultural area was considered Washington City's greatest impact on the water quality of the Virgin River. Managing this runoff and controlling pollutant discharges became the City's top priority. Washington City has spent more than 5 million dollars over the last 5 years in storm sewer infrastructure planning, design, and construction.

In 2006, the Washington City Public Works Department published its first edition of the Washington City Grading Manual. The purpose of this manual is to implement effective grading, drainage, erosion, and sediment control Best Management Practices. The manual is a comprehensive document that provides suitable guidance for use by a wide range of individuals involved in construction. The Washington City Council adopted the grading manual as ordinance, and in doing so effectively adopted an ordinance for the specifications and regulations outlined in the manual. This manual is the tool that Washington City has elected to implement the BMPs recommended to control the TMDL of Total Dissolved Solids discharged into the Virgin River.

The manual is published on the Washington City Public Works website and available to the public. It includes specifications for the DEQ recommended BMPs relevant to Washington City. In the upcoming years, Washington City intends to continue implementing BMPs included in the Grading Manual to reduce and monitor TDS loadings to the river. Within the first year of this permit, the City intends to update its grading manual and investigate analytical monitoring for controlling pollutant discharge.

Washington City is committed to reducing its impact on impaired waters within the City's influence.

### **3.3 MEASURABLE GOALS FOR SWMP DEVELOPMENT**



#### **UPDES Sec. 2.3.2.3**

The following goals are long-term outcomes Washington City desires to accomplish with its SWMP. The policies provide specific direction consistent with local goals, as well as State and Federal requirements. Implementation Actions include BMPs discussed in detail in the NPDES MS4 plan and other actions needed to achieve local objectives.

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<b>Goal #1</b>	
Preserve and maintain surface waters, wetlands, and riparian areas as functional and aesthetically pleasing for people, fish, and wildlife.	
Policies:	The City will implement permitting programs, educational outreach, compliance inspections and enforcement activities as needed to reduce erosion, sedimentation, illicit discharges, and other pollution impacts to the City's waterways.
	Through the development review process, the City will facilitate development that is protective of significant open waterways, wetlands, and riparian areas.
Implementation Actions:	The City will implement and continue to refine/improve BMPs for all City activities with potential to impact water quality and/or the functions of waterways, wetlands, and riparian areas.
	The City will implement and continue to refine/improve BMPs for all City activities with potential to impact water quality and/or the functions of waterways, wetlands, and riparian areas.
Implementation of BMPs included in the NPDES MS4 Plan	Implement BMPs consistent with NPDES Minimum Control Measure #4, Construction Site Stormwater Runoff Control, to reduce or eliminate sedimentation from construction sites as a contributor to poor water quality and quantity management.
	Implement BMPs consistent with NPDES Minimum Control Measure #5, Post- Construction Stormwater Management for New Development and Redevelopment, so new development at a minimum maintains the functioning of the stormwater drainage system, and doesn't contribute to future degradation.
	Implement BMPs consistent with NPDES Minimum Control Measure #6, Pollution Prevention in Municipal Operations, which is critical to maintaining properly functioning wetland and riparian areas and open channels.

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<b>Goal #2</b>	
Educate industries, businesses, and citizens on the need for water quality protection.	
Policies:	The City will develop targeted education and outreach and technical assistance programs regarding practices and obligations for keeping debris and pollutants out of the stormwater drainage system. Stakeholder groups will be trained in appropriate erosion control and sediment prevention practices, as well as stormwater management BMPs.
	The City will seek to form partnerships with neighborhoods or groups interested in providing assistance in maintaining local waterways.
	The City will develop, implement, and enforce appropriate building, design, and Municipal Codes to address water quality compliance issues, including pollution, habitat, and aesthetic issues, to encourage the development of urban waterways that are positive amenities in the community.
Implementation Actions:	The City will continue to support outreach and education efforts regarding water quality, riparian and wetland areas, including business, contractor, and developer outreach programs to educate these parties about their impacts on stormwater quality.
	The City will continue to maintain enforcement and compliance activities, including inspections, technical assistance, and code enforcement.
Implementation of BMPs included in the NPDES MS4 Plan	Implement BMPs consistent with NPDES Minimum Control Measure #1, Public Education and Outreach on Stormwater Impacts, to engage the public in the efforts to create positive urban amenities.
	Implement BMPs consistent with NPDES Minimum Control Measure #3, Illicit Discharge Detection and Elimination, to ensure that waterways are safe, meet State water quality standards, and can function as positive amenities.

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<b>Goal #3</b>	
Provide guidelines and regulations for the development and general community for preserving stormwater quality.	
Policies:	The City will develop and implement Codes addressing water quality and natural resource management, consistent with State and Federal requirements, to provide clear and objective standards for development.
	The City will develop, within fiscal constraints, adequate stormwater infrastructure, and will maintain a Stormwater Capital Facilities Master Plan that identifies public and private infrastructure needed to facilitate planned growth patterns.
Implementation Actions:	The City will continue to update its Stormwater Capital Facilities Master Plan.
	The City will pursue capital projects supporting stormwater infrastructure development, consistent with fiscal restraints, State and Federal requirements, and the needs of the community. These projects will be identified in the Stormwater Capital Facility Master Plan.
Implementation of BMPs included in the NPDES MS4 Plan	Implement BMPs consistent with NPDES Minimum Control Measure #1, Public Education and Outreach on Stormwater Impacts, to ensure that the development community is knowledgeable and informed regarding stormwater regulations.
	Implement BMPs consistent with NPDES Minimum Control Measure #2, Public Involvement/Participation, to ensure that the public has adequate input into new requirements or regulations.

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## **SECTION 4: RECEIVING STREAMS - STORM SEWER MAPPING**

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### **4.1 WASHINGTON CITY'S DRAINAGE SYSTEMS**

#### **Overview Of Washington City's Stormwater Drainage Systems**

The City is responsible for implementing surface water management activities within its boundaries, including the planning, design, construction, operation, and maintenance of the stormwater drainage system. The City performs all operation and maintenance on the public drainage system that is designed and constructed to public standards and located within easements or rights-of-way, or property that has been conveyed or dedicated to the City. The City also maintains open channels throughout the city, many of which are old irrigation canals. The geographic area covered by this Stormwater Program includes approximately 35 square miles inside Washington City limits.

Washington City's stormwater drainage system encompasses approximately 50 miles of piped drainage system, and more than 50 miles of open channel waterways throughout the area. The storm sewer system includes more than 1,200 as-built catch basins and 319 outfalls.

The City's stormwater drainage system also includes many private stormwater management facilities that help moderate and reduce the volume and pollutant content of stormwater leaving private property and entering the public stormwater drainage. These systems have been incorporated into newly developing properties since the late 1990s and include both mechanical pollutant removal devices, and other landscape features that use natural processes to clean and reduce the volume of stormwater discharge that flows to the public system.

#### **Stormwater Drainage Basin Characterization**

Washington City's stormwater drainage system has several major drainage basins that discharge to the Virgin River. A drainage basin can be described as a geographic area within which stormwater drains from many small systems converging on larger drainage ways, ultimately culminating in outfalls to rivers or major drainage ways. The character and condition of the drainage ways varies significantly throughout Washington City's basins. The condition of the drainage ways depends greatly on surrounding land uses and contributing drainages. A more complete description of each of the City's basins, and smaller sub basins, is included in the City's Stormwater Capital Facilities Plan. The Capital Facilities Plan is available to the public on Washington City's Public Works website.

## **Washington City Outfall Inventory, 2020**

An inventory update of outfalls to the City's stormwater drainage system was conducted in 2020. The purpose of this inventory was to identify and map both known and unknown stormwater outfalls. This inventory characterized outfalls by size and location, and successfully identified previously unknown contribution points to the City's stormwater drainage system. This information enables the City to more accurately predict runoff rates and areas where drainage systems may be operating beyond design capacity. It also enables the City to identify locations and sources of pollutants entering the stormwater drainage system. The Outfall Inventory is maintained in a GIS database.

## SECTION 5: PUBLIC EDUCATION AND OUTREACH

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UPDES Sec. 4.2.1

### 5.1 REGULATION

“The Permittee must implement a public education and outreach program to promote behavior change by the public to reduce water quality impacts associated with pollutants in stormwater runoff and illicit discharges. Outreach and educational efforts shall include a multimedia approach to be targeted and presented to specific audiences for increased effectiveness. The educational program must include documented education and outreach efforts for the following four audiences:

- Residents,
- Business, Institutions, and Commercial Facilities,
- Developers and Contractors (construction), and
- MS4-owned or operated Facilities.

The Permittee must include written documentation or rationale as to why particular BMPs were chosen for its public education and outreach program”.

The following sections present the Public Education and Outreach BMPs Washington City has determined to use in accomplishing its water quality goals and complying with state and federal regulations.

### 5.2 BMP SELECTION RATIONALE



UPDES Sec. 4.2.1.8

Washington City selected the following BMPs in order to cover a wide range of audience including homeowners, businesses, developers, contractors, engineers, and municipal employees. Coordinating with other agencies like the Washington County Water Conservancy District, Southwest Utah Stormwater Coalition, and others, helps to address a wider range of water quality concerns while taking advantage of events that are already being hosted, making the program more cost effective and efficient.

A particular priority of the City is to keep staff informed and educated on regional stormwater-related issues, such as existing materials and information available for common use (e.g., monitoring data and results of BMP evaluations), and issues such as DEQ’s TMDL implications for City stormwater management activities.

Washington City's strategy for developing and distributing the public education materials is to start with information such as the most typical sources of pollutants in stormwater runoff and the impacts associated with those pollutants and making this information available as educational handouts, flyers, and mailings. Future activities will include outreach presentations, advertisements, and workshops for the public, businesses, industry, and various other stakeholders, to educate them on impacts that the City's stormwater management program may have, and what they can do to improve stormwater quality.

A summary of the BMPs chosen for Public Education and Outreach are presented in Table 5.0. Sections 5.3 through 5.19 provide a description and the implementation schedule for each BMP.

**Table 5.0:** Public Education & Outreach BMP Summary Table (UPDES 4.2.1)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.1.1	Develop Municipal Outreach Strategy			
	PE-1	Developing an Outreach Strategy	Public Works	Stormwater Coordinator
	PE-2	Using the Media		
	PE-3	Stormwater Outreach Materials		
4.2.1.2	Education for Homeowners			
	PE-4	Lawn Care	Public Works	Stormwater Coordinator
	PE-5	Auto Washing		
	PE-6	Pet Waste		
	PE-7	Swimming Pool Water		
	PE-8	On-Site Septic Systems		
	PE-9	On-Site Infiltration		
4.2.1.3	Education for Businesses			
	PE-10	Landscape and Lawncare for Businesses	Public Works	Stormwater Coordinator
	PE-11	On-site Infiltration for Businesses		
	PE-12	Building Equipment Maintenance		
	PE-13	Proper Storage of Materials		
	PE-14	Stormwater Outreach for Commercial Businesses		
4.2.1.4	Education for Developers, Contractors, & Engineers			
	PE-15	Stormwater Outreach Materials for Developer, Contractors and Engineers	Public Works	Stormwater Coordinator
4.2.1.5	Education for City Employees			
	PE-16	Municipal Employee Training and Education	Public Works	Stormwater Coordinator

## 5.3 PE-1 DEVELOPING AN OUTREACH STRATEGY

### BMP Description



UPDES Sec. 4.2.1

The intent of this BMP is to engage the general public's interest in preventing stormwater pollution. Washington City recognizes the public has varying levels of background knowledge of both stormwater management and its role in reducing stormwater pollution.

Based on this recognition, the City is taking a multipronged approach to outreach efforts by:

- Generating basic awareness of stormwater pollution,
- Educating at a more sophisticated level using more substantive content, and
- Building on existing recognition of the issue to prompt behavior changes that reduce pollution (or the opportunities for pollution).

### Existing Program Elements

Washington City developed an outreach campaign as part of the previous permit cycle. First a problem statement was generated, and research was conducted on the viability of the problem statement. Second, the audience was identified and motivations and values discussed. Strategies and tactics were then identified to appeal to the target audiences and effectively deliver the strategy. Thirdly, specific messages were then constructed to appeal to each audience segment. Media contact information was also developed. Also, a benchmark survey was conducted in the last permit cycle to better understand the audience demographic. This campaign has informed the public education and outreach efforts.

To improve evaluation and tracking for the outreach campaign, a Post Event Report (PER) was created. The PER includes an event summary, name, location, organizer, date(s), organizer overview, event objectives, facilities, type, frequency, expected and actual attendance and contact information.



UPDES Sec. 4.2.1.7

### Proposed MS4 Activities

Washington City will update its outreach campaign in year three. This update will include a revised problem statement, additional research, updated audience profiles using data from surveys, and improved evaluation strategies. Data from construction and post-construction inspections, illicit discharges, and good housekeeping activities will also be utilized.

The Southwest Utah Stormwater Coalition will also be used to coordinate efforts with neighboring MS4's. The outreach campaign will foster partnerships to focus overall efforts in public education and outreach and maximize effectiveness.

A watershed map with political boundaries overlaid and a background issues sheet will be prepared to raise awareness with stakeholders of common issues and potential solutions.



### Measurable Goals

Washington City will use the following goals to measure its progress in its stormwater outreach materials BMP implementation.

**Table 5.1:** Measurable Goals for PE-1

Goal	Implementation Schedule
Update outreach campaign as needed	Years 1-5
Conduct an attitude survey to determine behavior changes	Years 1, 3, 5
Track number of participants in campaign events	Years 1-5
Develop a map of watershed with political boundaries overlaid	Year 1
Prepare issues background sheet	Year 1
Participate in Southwest Utah Stormwater Coalition	Years 1-5

## 5.4 PE-2 USING THE MEDIA

### BMP Description

The media can greatly enhance a stormwater pollution prevention campaign. It can educate a targeted or mass audience about the problems of and solutions to stormwater pollution. A campaign can raise awareness of, and spark interest in, stormwater management. Surveys show that the public is interested in environmental issues, particularly when they involve water quality, drinking water, or recreation.

E-mail is the preferred communication medium among many citizens, business people, and agency officials. The City will work toward an active stormwater program that will establish an email list server to keep stakeholders updated on meetings, policy discussions, and other developments. Implementing this communication link will provide a written record of the communication.

### Existing Program Elements

By tracking our visitors IP Address we can calculate that our residents have taken advantage of our website. A survey conducted by Washington City in 2005 showed that 33% of its residents visited the Washington City Website, and in 2015 a total number of users visiting the website increased to 109,958. It was determined that the City website is a good place to post stormwater information. The City will continue to post information on the Public Works department's page and any other relevant department's page.

Washington City developed a Public Service Announcement (PSA) using information developed from audience surveys and its public education and outreach campaign. The PSAs deliver short stormwater messages to the public regarding events or pollution prevention information. The PSA is delivered by Cherry Creek Radio in cooperation with the Southwest Utah Stormwater Coalition.

### Proposed MS4 Activities

In year three of the current permit cycle, a media kit will be compiled to facilitate partnerships with local media. The media kit will include a watershed map, background information on pollutants specific to the area, contact list, and news articles with quotes on pollution prevention.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Using the Media BMP implementation.

**Table 5.3:** Measurable Goals for PE-2

Goal	Implementation Schedule
Develop Media Kit that includes: <ul style="list-style-type: none"><li>• Watershed Map</li><li>• Background information on pollutants specific to the area</li><li>• Contact list</li><li>• News articles with quotes on pollution prevention</li></ul>	Year 3
Continue posting stormwater information on Washington City website	Years 1-5
Update PSAs annually	Years 1-5

## 5.5 PE-3 STORMWATER OUTREACH MATERIALS

### BMP Description

A portfolio of educational brochures was developed for all Public Works staff to assist with educating and informing the public about activities that may adversely impact stormwater quality.

### Existing Program Elements

A portfolio containing a broad range of informational and educational handouts was developed by the City for staff working in the field or responding to complaints of spills, dumping, or other problematic practices. Public Work's staff are trained in the use of the handouts, as well as information concerning the City's Municipal Code with regard to illegal activities covered by the handouts.

The purpose of this portfolio is to insure that this material is readily available for distribution when opportunities arise. The handouts inform residents that their activities may cause significant pollution levels downstream, harming fish, plants, and aquatic life, as well as potentially harming people swimming or recreating in the waterway.

The portfolios include handouts and brochures on a wide variety of household and construction BMPs, including concrete clean out, car washing, restaurant and business stormwater BMPs, pet waste disposal, and more, addressing situations which are frequently observed. Staff responsible for the portfolio were briefed on the content and purpose of the handouts, and provisions were developed for updating and refilling the portfolios as the material was used.

The City has several locations and events where stormwater outreach materials are distributed. Information in the form of handouts, brochures, and posters is provided at the Washington City and Public Works Offices. The following tactics are used as particular opportunities for material distribution.

#### Cotton Days Booth

Washington City annually sponsors a community activity called Cotton Days. This activity is a major event in the summer where the citizens of Washington City gather to celebrate the founding of the City. The Cotton Days celebration is a great opportunity to reach a large group of people. At Cotton Days, the Public Works Department staffs a stormwater booth that showcases educational displays and provides outreach materials. The City's stormwater survey is also conducted at this time. With this survey, the general knowledge and attitude of the public regarding stormwater can be determined.

#### Washington City Night at the Community Center

The Washington City Community Center is popular with city residents for swimming, rock climbing, holiday themed festivals, and community classes. In 2020, the Washington City Night at the Community Center was held on October 5th, 2020. Approximately 1,000 community members received stormwater outreach information and promotional giveaways.

### **Proposed MS4 Activities**



#### **UPDES Sec. 4.1.2.1**

Washington City will primarily focus on improving tracking and evaluation methods for existing stormwater outreach materials. Washington City will educate its residents on Cotton Days, Washington City Nights, and the Water Fair. We will also continue to play a vital role in the Southwest Utah Stormwater Coalition.

### **Measurable Goals**

Washington City will use the following goals to measure its progress in its stormwater outreach materials BMP implementation.

**Table 5.4:** Measurable Goals for PE-3

Goal	Implementation Schedule
Continue to staff a stormwater booth at Cotton Days and Washington City Night	Years 1-5
Improve tracking and evaluation methods for booths	Year 1
Continue to provide stormwater information for inclusion in the City quarterly newsletter	Years 1-5
Continue offering handouts at the City offices	Years 1-5
Continue promotional giveaways promoting stormwater message at Cotton Days, Water Fair, and Washington City Night	Years 1-5

## 5.6 PE-4 LANDSCAPE AND LAWN CARE



UPDES Sec. 4.2.1.2

### BMP Description

This management measure uses education and outreach to control the effects of landscaping and lawn care practices on stormwater. Lawns produce significant amounts of nutrient-rich stormwater runoff. Pesticide runoff can contaminate drinking water supplies with chemicals toxic to both humans and aquatic organisms. Fertilizer isn't a problem if it's used carefully. If too much fertilizer is used or applied at the wrong time, it can easily wash off the lawn or garden into storm drains and then flow untreated into lakes or streams. Just like in a garden, fertilizer in lakes and streams makes plants grow. In water bodies, extra fertilizer can mean extra algae and aquatic plant growth. Too much algae harms water quality and makes boating, fishing and swimming unpleasant. As algae decay, they use up oxygen in the water that fish and other wildlife need.

### Existing Program Elements

Few residents consider lawn fertilizer a cause of water quality problems. Few suburban and rural landowners are aware of their lawn's nutrient needs. Helping residents, municipalities, and lawn care professionals learn methods to reduce fertilizer and pesticide application, water use, and land disturbance can help alleviate the effects of a major source of stormwater pollution in residential communities. Part of Washington City's current outreach campaign is to alert residents of the impact that their landscaping and lawns have on stormwater quality. Information regarding the impact of lawns and landscaping on nutrient pollutant loading is available on the Washington City Website. This information is also available as handouts at the City offices and offered on educational displays at Cotton Days and Washington City Night.

### Proposed MS4 Activities

Washington City will continue offering lawn care and landscaping information on the City's website, handouts, and educational displays at events like Cotton Days and Washington City Night.

### Measurable Goals

Washington City will use the following goals to measure its progress in its landscape and lawn care BMP implementation.

**Table 5.5:** Measurable Goals for PE-4

Goal	Implementation Schedule
Continue offering lawn care and landscaping information on the City's website and handouts at events like Cotton Days	Years 1-5
Evaluate and update, if necessary, handouts based on additional data collected in other minimum control measures and the revised outreach campaign	Years 1-5

## 5.7 PE-5 AUTO WASHING



UPDES Sec. 4.2.1.2

### **BMP Description**

This management measure involves educating the general public, businesses, and municipal fleets (public works, school buses, fire, police, and parks) on the water quality impacts of the outdoor washing of automobiles and how to avoid allowing polluted runoff to enter the storm drain system. Car washing is a common routine for residents and a popular way for organizations such as scout troops, schools, and sports teams to raise funds. Outdoor car washing that uses detergent-rich water flows down the street and into the storm drain. Most stormwater impacts from car washing are from residents, businesses, and charity car wash fundraisers that discharge polluted wash water to the storm drain system. Currently, Washington City's pollution prevention program incorporates proper car washing practices as part of an overall message to residents on ways to reduce stormwater pollution.

### **Existing Program Elements**

Currently, Washington City's pollution prevention program incorporates proper car washing practices as part of an overall message to residents on ways to reduce stormwater pollution. Information on where, and how, residents should wash their cars is provided on the City website. The water quality impacts of outdoors auto washing is also provided in the handouts distributed at the City offices and events like Cotton Days and Washington City Night.

### **Proposed MS4 Activities**

The most important things to consider in washing an automobile, or recreational vehicle, is where and how it is done. Most soap contains phosphates and other chemicals that harm fish and water quality. The soap, together with the dirt and oil washed from the vehicle, flows into nearby storm drains which run directly into lakes, rivers or marine waters. The phosphates from the soap can cause excess algae to grow. Algae looks bad, smells bad, and harms water quality. As algae decay, the process uses up oxygen in the water that fish need. Washington City will continue offering information regarding auto washing on the City's website, and handouts at events like Cotton Days. The information on the website and in the handouts will be updated in year three (3) of this permit to reflect new information and/or improved pollution prevention techniques.

### **Measurable Goals**

Washington City will use the following goals to measure its progress in its auto washing BMP implementation.

**Table 5.6:** Measurable Goals for PE-5

Goal	Implementation Schedule
Continue offering auto washing information on the City's website and handouts at events like Cotton Days	Years 1-5
Evaluate and update handouts and website, if necessary, based on additional data collected in other minimum control measures and the revised outreach campaign.	Years 1-5

## 5.8 PE-6 PET WASTE



UPDES Sec. 4.2.1.2

### **BMP Description**

When pet waste is improperly disposed of, it can be picked up by stormwater runoff and washed into storm drains or nearby water bodies. Since storm drains do not always connect to treatment facilities, untreated animal feces often end up in lakes and streams, causing significant water pollution. Decaying pet waste consumes oxygen and sometimes releases ammonia. Low oxygen levels and ammonia can damage the health of fish and other aquatic life. Pet waste carries bacteria, viruses, and parasites that can threaten the health of humans and wildlife.

Pet waste also contains nutrients that promote weed and algae growth (eutrophication). Cloudy and green, Eutrophic water makes swimming and recreation unappealing or even unhealthy. This BMP consists of distributing materials that explain how pet waste harms water quality and how citizens can help reduce water pollution. Additionally, Washington City will continue to install signage as part of its outreach strategy.

### **Existing Program Elements**

Currently, Washington City's pollution prevention program incorporates proper pet waste disposal practices as part of an overall message to residents on ways to reduce stormwater pollution. Information on proper pet waste disposal is provided on the City Website. The water quality impacts of improper waste disposal is also provided in the handouts distributed at the City offices and events like Cotton Days. Washington City implements pet waste management programs by posting signs in parks or other pet-frequented areas.

### **Proposed MS4 Activities**

Signposting is one of the outreach strategies used by Washington City. These signs designate areas where dog walking is prohibited, where waste must be recovered, or where dogs can roam freely. In addition to postings, the City has installed "pet waste stations" with waste receptacles and a supply of waste collection bags, scoops, and shovels. Washington City will continue to implement its sign posting strategy and "pet waste stations". The City encourages residents to dispose of pet waste in the trash, bury it in their yards, or flush it down the toilet.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Pet Waste BMP implementation.

**Table 5.7:** Measurable Goals for PE-6

Goal	Implementation Schedule
Continue offering pet waste information on the City's website and handouts	Years 1-5
Update handouts based on additional data collected in other minimum control measures and the revised outreach campaign	Year 4
Continue signage and pet waste station initiatives	Years 1-5

## 5.9 PE-7 SWIMMING POOL WATER



UPDES Sec. 4.2.1.2

### BMP Description

Chlorinated water discharged to surface waters has an adverse effect on water quality. Swimming pools are a major source of chlorinated water discharged into sanitary and storm sewer systems. An average swimming pool holds 19,000 gallons of highly chlorinated water, which is toxic to wildlife and fish. This management measure is to raise awareness of the adverse impact chlorinated water has on water quality.

### Existing Program Elements

Washington City has posted information regarding Swimming Pool Water on its website: <https://washingtontcity.org/publicworks/PoolsSpas.pdf> and handouts have been developed and distributed at community events.

### Proposed MS4 Activities

In addition to the handout that has been developed for distribution at community events, Washington City will develop a handout or implement a plan to distribute the current handout with swimming pool permits.

### Measurable Goals

Washington City will use the following goals to measure its progress in its swimming pool water BMP implementation.

**Table 5.8:** Measurable Goals for PE-7

Goal	Implementation Schedule
Develop handout to distribute with swimming pool permits	Year 1
Evaluate and update, if necessary, website information and handouts.	Years 1-5

## 5.10 PE-8 ON-SITE SEPTIC SYSTEMS



UPDES Sec. 4.2.1.2

### BMP Description

A failing septic system is a threat to human and environmental health. Dangerous bacteria, viruses and high levels of nitrogen can be discharged to the groundwater table, which may lead to the contamination of groundwater at drinking wells that are down gradient of the failing system. These same pollutants may be fed into nearby waterways by groundwater, resulting in pollutant discharge to streams, rivers and lakes used for fishing, swimming, boating, and recreation. Pollutants of this nature can lead to sickness, skin irritations, and can be harmful to aquatic life.

### Existing Program Elements

Washington City has posted information regarding on-site septic systems on its website: <https://washingtoncity.org/services/publicworks/stormwater/septicsystems> and handouts have been developed and distributed at community events.

### Proposed MS4 Activities

Washington City will continue to distribute and update the website and handouts regarding on-site septic systems.

### Measurable Goals

Washington City will use the following goals to measure its progress in its on-site septic system BMP implementation.

**Table 5.9:** Measurable Goals for PE-8

Goal	Implementation Schedule
Evaluate and update, if necessary, website information and handouts.	Years 1-5

## 5.11 PE-9 ON-SITE INFILTRATION



UPDES Sec. 4.2.1.2

### BMP Description

This management measure is to raise awareness of the potential advantages of on-site infiltration and promote Low Impact Design (LID) practices. In LID, natural landscape features are utilized to detain, infiltrate, and treat runoff. This approach is widely endorsed by city, state, and federal agencies at all levels.





UPDES Sec. 4.2.1.6

### Existing Program Elements

The Dixie Stormwater Coalition (now the Southwest Utah Stormwater Coalition), which includes Washington City, has developed a manual titled *Green Infrastructure and Low Impact Development Application Guidance for Washington County, Utah*. The manual provides requirements and guidance for the onsite retention of the 80th percentile rainfall event for new development and redevelopment projects that are one acre or greater. A City resolution adopting the LID Guidance manual is located on the Washington City website.

### Proposed MS4 Activities

Information regarding LID practices will be posted on the City's website within year one to raise awareness. In year four, handouts will be developed to distribute at community events. Website information and handouts will be evaluated and updated annually.

### Measurable Goals

Washington City will use the following goals to measure its progress in its on-site infiltration BMP implementation.

**Table 5.10:** Measurable Goals for PE-9

Goal	Implementation Schedule
Post information on website about the benefits of utilizing LID practices	Year 1
Evaluate and update, if necessary, website information and handouts	Years 1-5

## 5.12 PE-10 LANDSCAPE AND LAWN CARE FOR BUSINESSES



UPDES Sec. 4.2.1.3

### BMP Description

This management measure uses education and outreach to control the effects of landscaping and lawn care practices on stormwater. Lawns produce significant amounts of nutrient-rich stormwater runoff. Pesticide runoff can contaminate drinking water supplies with chemicals toxic to both humans and aquatic organisms.

### Existing Program Elements

Few residents consider lawn fertilizer a cause of water quality problems. Few suburban and rural landowners are aware of their lawn's nutrient needs. Helping residents, municipalities, and lawn care professionals learn methods to reduce fertilizer and pesticide application, water use, and land disturbance can help alleviate the effects of a major source of stormwater pollution in residential communities. Part of Washington City's current outreach campaign is to alert the public of the impact that their landscaping and lawns have on stormwater quality. Information regarding the impact lawns and landscaping have on nutrient pollutant loading is available on the Washington City Website. This information is also available as handouts at the City offices and distributed at events like Cotton Days.

### Proposed MS4 Activities

Fertilizer isn't a problem if it's used carefully. If too much fertilizer is used or applied at the wrong time, it can easily wash off the lawn or garden into storm drains and then flow untreated into lakes or streams. Just like in a garden, fertilizer in lakes and streams makes plants grow. In water bodies, extra fertilizer can mean extra algae and aquatic plant growth. Too much algae harms water quality and makes boating, fishing and swimming unpleasant. As algae decay, they use up oxygen in the water that fish and other wildlife need. Washington City will continue offering lawn care and landscaping information on the City's website, and handouts at events like Cotton Days. Washington City will develop a handout to accompany related industries, institutions and commercial facilities annually upon license renewal, informing them of the water quality impacts associated with illicit discharges and improper disposal of waste.

### Measurable Goals

Washington City will use the following goals to measure its progress in its landscape and lawn care BMP implementation.

**Table 5.11:** Measurable Goals for PE-10

Goal	Implementation Schedule
Continue to post information on city website and offer handouts at city events	Years 1-5
Develop handouts to accompany city business license renewal for related industries.	Year 1
Evaluate and update, if necessary, website information and handouts annually	Years 1-5

## 5.13 PE-11 ON-SITE INFILTRATION FOR BUSINESSES



UPDES Sec. 4.2.1.3

### BMP Description

This management measure is to raise awareness of the potential advantages of on-site infiltration and promote LID practices. In LID, natural landscape features are utilized to detain, infiltrate, and treat runoff. This approach is widely endorsed by agencies at all levels.

### Existing Program Elements

The Dixie Stormwater Coalition, which includes Washington City, has developed a manual titled *Green Infrastructure and Low Impact Development Application Guidance for Washington County, Utah*. The manual provides requirements and guidance for the onsite retention of the 80th percentile rainfall event for projects that are one acre or greater. A City resolution adopting the LID Guidance manual is located on the Washington City website.

### Proposed MS4 Activities

Information regarding LID practices will be posted on the City's website within year one to raise awareness. In year four, handouts will be developed to distribute at community events. Website information and handouts will be evaluated and updated annually.

### Measurable Goals

Washington City will use the following goals to measure its progress in its on-site infiltration BMP implementation.

**Table 5.12:** Measurable Goals for PE-11

Goal	Implementation Schedule
Post information regarding LID practices to website	Year 1
Develop handout to distribute at community events	Year 4
Evaluate and update, if necessary, website information and handouts annually	Years 1-5

## 5.14 PE-12 BUILDING EQUIPMENT MAINTENANCE



UPDES Sec. 4.2.1.3

### BMP Description

This management measure uses education and outreach to control the effects of building equipment and maintenance practices on stormwater. Activities associated with building equipment maintenance such as hazardous materials storage, pest control, parking lot cleaning and waste storage and disposal are potentially hazardous to water quality if pollutants enter storm drain systems or receiving waters.

### Existing Program Elements

This practice deals with the confinement of the maintenance, repair, cleaning, and storage of construction machinery, vehicles, and equipment, to areas specifically designed and designated for those purposes. It is applicable to both temporary and permanent sites and facilities, whether open or covered. It emphasizes the importance of controlling runoff from these areas.

### Proposed MS4 Activities

In the first permit year Washington City will develop a handout to educate business owners on proper methods and procedures to use in their building and equipment maintenance programs to minimize their impact on water quality. A standard procedure for including the handout with all new and renewal business licenses will also be implemented. Information developed for the handout will also be posted on the website. The website and handout will be evaluated and updated annually.

### Measurable Goals

Washington City will use the following goals to measure its progress for its building equipment maintenance BMP implementation.

**Table 5.13:** Measurable Goals for PE-12

Goal	Implementation Schedule
Develop a handout and a standard procedure for including with business licenses	Year 1
Post information on website	Year 1
Continue to hand out educational material	Years 1-5
Evaluate and update, if necessary, website information and handouts annually	Years 1-5

## 5.15 PE-13 PROPER STORAGE OF MATERIALS



UPDES Sec. 4.2.1.3

### BMP Description

Responsible management of common chemicals, such as fertilizers, solvents, paints, cleaners, and automotive products, can significantly reduce polluted runoff. Such products must be handled properly in all stages of development, use, and disposal. Materials management entails the selection of the individual product, the correct use and storage of the product, and the responsible disposal of associated waste(s).

### Existing Program Elements

There are currently no elements in the existing program that provide information to business owners about proper storage of common chemicals and materials.

### Proposed MS4 Activities

In the first permit year Washington City will develop information to post on its website to educate business owners on proper methods and procedures to use in their materials storage management to minimize their impact on water quality. A standard procedure for developing and distributing handouts to businesses will also be implemented in year three (3). Information developed for the handouts and website will be updated as needed. Information regarding proper material storage will also be included in the Public Works holding message.

### Measurable Goals

Washington City will use the following goals to measure its progress for its proper storage of materials BMP implementation.

**Table 5.14:** Measurable Goals for PE-13

Goal	Implementation Schedule
Develop and post information on the City website.	Year 1
Develop and distribute handouts to local businesses	Years 3-5
Track number of handouts distributed.	Years 3-5
Evaluate and update, if necessary, the website and handouts annually.	Years 1-5

## 5.16 PE-14 STORMWATER OUTREACH FOR COMMERCIAL BUSINESSES



UPDES Sec. 4.2.1.3

### **BMP Description**

The target audience for this BMP is industry and business groups whose activities influence the health of watersheds. Many commercial activities contribute to stormwater pollution (such as vehicle washing, landscape fertilization, and improper hazardous waste disposal). The City will address these types of commercial activities specifically in business outreach strategy. Because many business practices use materials and chemicals that are harmful to the environment, it is important for business owners, operators, and employees to know about practices that should be avoided to maintain and improve water quality. With this outreach program for businesses, the City expects to increase public awareness about water quality issues.

### **Existing Program Elements**

Washington City's Illicit Discharge Detection and Elimination Program contains a draft outreach campaign element for businesses. This element includes education on how to detect illicit discharge and alert business owners of the impact their activities have on stormwater quality.

### **Proposed MS4 Activities**

The City will develop an outreach campaign designed to educate business owners on proper management of waste materials and dumpsters and proper management of parking lot surfaces (sweeping). More specifically, the City will develop and distribute material to business owners on the proper way to dispose of trash and debris collected when sweeping or cleaning parking lot surfaces.

The City will also encourage all business owners that have dumpsters to make sure they are covered and not leaking pollutants out onto the ground. This education will be incorporated as a part of the Illicit Discharge Detection and Elimination program. In year one (1) of this permit cycle, the City will develop and post information on its website. In year three (3), the City will develop and distribute information to business owners on proper storage of materials for waste management and dumpsters, and proper maintenance of parking structures. The following items are example topics that could be contained in a booklet.

- Promptly cleaning up vehicle leaks
- Using a rag or absorbent material to properly dispose of automotive fluids
- Regularly sweeping the parking lot and picking up litter
- Avoiding washing down the parking lot unless a mop for spot cleaning is used.
- Disposing of the mop water to a sanitary sewer
- Rinsing the parking lot with water only (no soap) after first sweeping it up and cleaning up oil spots with an absorbent, or collecting the soapy rinse water and pumping it to the sanitary sewer

The City will require each commercial business to have a spill response and prevention procedure included as part of the site's SWPPP.

### Measurable Goals

Washington City will use the following goals to measure its progress for its stormwater outreach for commercial businesses BMP implementation.

**Table 5.15:** Measurable Goals for PE-14

Goal	Implementation Schedule
Continue to post information on city website and offer handouts at city events	Years 1-5
Develop handout to accompany city business license renewal for related industries	Year 3
Evaluate and update, if necessary, website information and handouts annually	Years 1-5

## 5.17 PE-15 STORMWATER OUTREACH MATERIALS FOR DEVELOPER, CONTRACTORS AND ENGINEERS



UPDES Sec. 4.2.1.4

### BMP Description

The target audience for this BMP is developers, contractors, and engineers whose activities influence the health of watersheds. Many activities from contractors and developers contribute to stormwater pollution (such as land grading, ). The City will address the types of activities conducted by developers and engineers specifically in an outreach strategy. Engineers and developers have an important part in pollution prevention. In both the design and construction of new development, an opportunity to implement control measures directly into a project is presented. Construction sites are particularly places of potential pollution. Because many construction sites store and use materials and chemicals that are harmful to the environment, it is important that contractors and their employees know about practices that should be avoided to maintain and improve water quality. With this outreach program for developers and contractors, the City expects to increase public awareness about water quality issues.

### Existing Program Elements

Components in Washington City's managing construction runoff minimum control measure are directed at contractors, developers, and engineers. In particular, the City provides BMPs for construction sites to implement. These BMPs are reviewed by the City in the contractor's Stormwater Pollution Prevention Plans (SWPPPs). The Washington City Grading Manual and BMP Handbook are both provided to minimize the effects of development and redevelopment on the environment.

### Proposed MS4 Activities

Washington City will continue to implement its current control measures. In addition to the information in the Grading Manual and Best Management Practices Handbook, the City intends to develop presentations targeted at building professionals. The City will present an informative presentation at the Southern Utah Home Builders Association (SUHBA), the primary professional association for contractors and developers. With these presentations, the City expects to provide information to the majority of engineers, construction contractors, developers, development review staff, and land use planners in the area. The material presented will include the development of SWPPPs and BMPs for reducing adverse impacts from stormwater runoff from development sites. As previously mentioned, the Construction Site Runoff control measure will include additional information on the development of a SWPPP. The grading manual will be updated to reflect the requirements of DEQ and will be the City's primary education and implementation tool for contractors, developers, and engineers.

### Measurable Goals

Washington City will use the following goals to measure its progress for its stormwater outreach for developers, contractors, and engineers BMP implementation.

**Table 5.16:** Measurable Goals for PE-15

Goal	Implementation Schedule
Continue to implement the Grading Manual and BMP Handbook	Years 1-5
Develop presentation for SUHBA	Year 1
Update presentation for SUHBA and present at SUHBA.	Years 1-5
Track number of attendees at presentations.	Years 1-5
Evaluate attendees knowledge on stormwater related issues at presentations.	Years 1-5

## 5.18 PE-16 MUNICIPAL EMPLOYEE TRAINING AND EDUCATION



UPDES Sec. 4.2.1.5

### BMP Description

The City will implement a training program designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance. Training will include a general stormwater awareness message on pollution prevention/good housekeeping measures, spill response and prevention, and information about the operation and maintenance and operation of structural BMPs. Proper disposal of trash and debris will be specifically addressed. The City training program will also include information on stormwater pollution prevention plans (SWPPPs) for municipal facilities and BMPs recommended for use in the field to prevent contaminated discharges. Washington City field staff will be trained to recognize, track, and report illicit discharges.

### Existing Program Elements

Washington City has established a training program for field maintenance staff to address safety, materials handling, waste disposal, or other issues. The City's training program format is classroom style. These meetings include watching educational videos and addressing any additional questions. Basic stormwater information and details about pollution prevention and BMPs are also addressed. Quizzes are given at the completion of the training and scores recorded in employee files.



UPDES Sec. 4.2.1.6

### Proposed MS4 Activities

The City will conduct more comprehensive training when new employees are hired. Whenever possible, the City will provide additional in-field training to demonstrate proper implementation of operation and maintenance of BMPs and housekeeping measures at municipal facilities. Educational videos will continue to be the primary tool used during training.

### Measurable Goals

Washington City will use the following goals to measure its progress in its municipal training BMP implementation.

**Table 5.17:** Measurable Goals for PE-16

Goal	Implementation Schedule
Continue to conduct training; track dates, topics, attendees; and quiz results	Years 1-5



## SECTION 6: PUBLIC INVOLVEMENT AND PARTICIPATION

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UPDES Sec. 4.2.2

### 6.1 REGULATION

“The Permittee must implement a program that complies with applicable State and Local public notice requirements. The SWMP shall include ongoing opportunities for public involvement and participation such as advisory panels, public hearings, watershed committees, stewardship programs, environmental activities, other volunteer opportunities, or other similar activities. The Permittee should involve potentially affected stakeholder groups, which include but is not limited to, commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and education organizations. Permittees shall adopt a program or policy directive to create opportunities for the public to provide input during the decision making processes involving the development, implementation and update of the SWMP document including development and adoption of all required ordinances or regulatory mechanisms.”



UPDES Sec. 4.2.2.2 and 4.2.2.3

“If the Permittee maintains a website, the latest version of the SWMP document shall be posted on the website to allow the public to review and provide input. The SWMP must be made available for public input within 180 days from the effective date of the permit. The Permittee must at a minimum comply with State and Local public notice requirements when implementing a public involvement/participation program.”

### 6.2 BMP SELECTION RATIONALE

The City selected three BMPs to address the Public Involvement/Participation minimum control measure and to complement its public education efforts. PI-1 details the public involvement and participation required under the UPDES program. Certain policies, implementation actions, and BMPs included in the Stormwater Program may trigger requirements for additional public involvement, such as amending the Municipal Code, the Development Code, or implementing new ordinances. These processes will have a public involvement component in their own right, which will be adhered to in the standard City approval processes.



#### UPDES Sec. 4.2.2.1

Washington City is participating in an informal organization known as the Southwest Utah Stormwater Coalition. This organization gathers monthly to discuss stormwater related issues that affect the area. The coalition is comprised of representatives of the various municipalities, as well as private consultants. Washington City would like to see this coalition take a more active role in stormwater management for the area, particularly in the area of public involvement. Through the next five years, the City will encourage the coalition to take on the role of organizing citizen participation in periodic cleanup efforts, or assisting with educational or interpretive events. The following BMPs are expected to help the City achieve these goals.

**TABLE 6.0** Public Involvement BMP Summary Table (UPDES 4.2.2)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.2	Soliciting Public Opinion			
	PI-1	Public Involvement/Participation Program Development	Public Works	Stormwater Coordinator
	PI-2	City Council Involvement		
	PI-3	Watershed Organization/Stakeholder Meetings		

## 6.3 PI-1 PUBLIC PARTICIPATION/INVOLVEMENT PROGRAM DEVELOPMENT



#### UPDES Sec. 4.2.2.1

### BMP Description and Selection Rationale

Public involvement and public participation naturally require the inclusion of stakeholders. Stakeholders for Washington City's Stormwater Management Program include citizens, local school groups, community leaders, local and state government representatives, and business owners in the watershed. A public participation program is a way to inform citizens about stormwater impacts, in addition to gaining support for the stormwater management program.

### Existing Program Elements

Washington City currently provides several opportunities for public involvement and participation. In 2003, the City published a Community Project List. The Community Project List is a compilation of community projects posted at City Hall to encourage volunteerism and community involvement. In 2004, Washington City developed a Community Hotline as a mechanism for the public to report illicit discharges.

As previously stated, Washington City is participating in an informal organization known as the Southwest Utah Stormwater Coalition. The Coalition meets monthly to discuss stormwater related issues that affect the area. The organization is comprised of representatives from the various municipalities, as well as private consultants.

A long term goal of the Stormwater Coalition is to share the cost of implementation for their respective stormwater management programs, particularly in the areas where their programs overlap. For example, all the MS4s in the area will need to implement elements like public outreach and education, and public involvement.

In 2005, Washington City conducted a base line attitude survey. One primary focus of the survey was how the community felt about stormwater management as a spending priority. The results of the survey indicated that approximately 83% of residents agree that stormwater management should be made a spending priority. In the eighteen years since the City implemented its first SWMP, public involvement has fallen short of the City's goals. Within the next permit period, Washington City intends to boost this aspect of its SWMP.

### **Proposed MS4 Activities**

Through the next five years, the City will work to provide additional opportunities for public involvement in its Stormwater Program. The areas in this minimum control measure the City will focus on include public meetings and providing more opportunities for stormwater related activities in the community. The City will investigate implementing program elements like adopt-a-stream, community clean up, and community monitoring.

As previously mentioned in the Public Education and Outreach section, the City hopes to utilize professionals from the community for its stormwater education and outreach efforts. Washington City will investigate creating an opportunity for local colleges to be involved by assisting the City in its survey efforts.

Washington City will work toward soliciting opinion and feedback from the public on processes involved in the SWMP. One technique the City will implement to accomplish this is to provide an area for comments and feedback on the website where the SWMP is posted. The City will provide opportunities for public involvement and participation at least twice annually.

### **Measurable Goals**

Washington City will use the following goals to measure its progress in the Public Participation Program implementation.

**Table 6.1:** Measurable Goals for PI-1

<b>Goal</b>	<b>Implementation Schedule</b>
Make revised SWMP available to the public for review and input	Year 1
Provide opportunity for public involvement and participation at least twice annually	Years 1-5
Post the SWMP on Washington City's website for public review and comments for the life of the permit	Years 1-5
Comply with local public notice requirements	Years 1-5
Use information from biannual survey to gauge public attitude toward pollution prevention	Years 2,4
Investigate community involvement activities, including clean-up and monitoring	Year 4

## 6.4 PI-2 CITY COUNCIL INVOLVEMENT

### BMP Description and Selection Rationale

The goal of this BMP is to maintain an informed and involved City Council through periodic communication of program requirements, regulations, strategies, and outcomes. The City Council is an important partner in the implementation of a successful stormwater management program. They establish city-wide goals and policies, guide strategy development, and ultimately approve funding for stormwater management planning and capital project implementation.

Implementation of the SWMP is a task that will require the participation of all the City departments. Traditionally, Public Works has been responsible for the implementation of the SWMP. Although the Public Works Department will continue to oversee the SWMP, a successful Program will require participation and cooperation from all departments as the scope of this permit is too large for Public Works to handle alone. The City Council is in a position to help facilitate cooperation from the City departments and the Council's involvement will be vital for the program to be successful.

### Existing Program Elements

The City Council and Planning Commission are important partners in the implementation of a successful stormwater management program. They establish citywide goals and policies, guide strategy development, and ultimately approve funding for stormwater management planning and capital project implementation.

### Proposed MS4 Activities

The Public Works Department will continue to update the City Council through informational communication packet items, and periodic presentation. A presentation regarding the SWMP program requirements, regulations, strategies will be given to the City Council in year one (1) of the permit Cycle. The goal is to communicate the overall scope of the program and to receive feedback from the council at least once a year. Information obtained from the feedback will be factored into staff communication strategies through adaptive management. If feedback indicates communication avenues are not effective, a different approach will be developed and implemented.

### Measurable Goals

Washington City will use the following goals to measure its progress in the City Council involvement implementation.

**Table 6.2:** Measurable Goals for PI-2

Goal	Implementation Schedule
Give presentation to City Council regarding SWMP requirements, regulations, and strategies	Year 1
Solicit feedback from City Council members on an annual basis	Years 1-5

## 6.5 PI-3 WATERSHED ORGANIZATION/STAKEHOLDER MEETINGS

### BMP Description

A watershed organization/stakeholders meeting incorporates the ideas and resources of many different groups into a single organization. The groups can consist of local governments, citizens, nonprofit environmental groups, and local universities, among others. The City will encourage the development of a local stormwater coalition. The purpose of which is to restore, protect, and promote the natural resources of the watershed. To accomplish this, a watershed organization will work to implement public education and stormwater management programs, stream cleanup events, or restoration activities.

One of the benefits of stakeholder meetings is the variety of ideas from people of all backgrounds and interests. Some participants will be more knowledgeable than others, and they can share their expertise with the other stakeholders. In some cases, stakeholders might belong to other groups with overlapping concerns. In such cases, resources can be pulled together to achieve corresponding goals.

### Existing Program Elements

Washington City is participating in an organization known as the Southwest Utah Stormwater Coalition. This organization gathers monthly to discuss stormwater related issues that affect the area. The coalition is comprised of representatives of the various municipalities, as well as private consultants and area contractors and developers. Washington City would like to see this coalition take a more active role in stormwater management for the area, particularly in the area of public involvement.

### Proposed MS4 Activities

Through the next five years, the City will encourage the coalition to take on the role of organizing citizen participation, or assisting with educational or interpretive events.

### Measurable Goals

Washington City will use the following goals to measure its progress in the Public participation Program implementation.

**Table 6.3:** Measurable Goals for PI-3

Goal	Implementation Schedule
Continue participating in the Southwest Utah Stormwater Coalition	Years 1-5
Track meeting dates, times, attendees, and agendas	Years 1-5

## SECTION 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

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UPDES Sec. 4.2.3

### 7.1 REGULATION

Washington City has developed, implemented and enforced an IDDE program ordinance (Ordinance No. 2009-15) to systematically find and eliminate sources of non-stormwater discharges from the MS4 and has implemented the procedures to prevent illicit connections and discharges according to the minimum performance measures listed below. The purpose of the ordinance is to provide for the health, safety, and general welfare of the citizens of Washington City through the regulation of non-stormwater discharge to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the Municipal Separate Storm Sewer System (MS4) in order to comply with requirements of the UPDES permit process. The objectives of this ordinance are:

1. To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any use.
2. To prohibit illicit connections and discharges to the MS4.
3. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance. Effectively, Washington City Public Works has implemented a Stormwater Pollution Prevention Plan (SWPPP) which describes the BMPs and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and actions to eliminate or reduce pollution discharges to the MS4. Whenever the Public Works Department finds that a person has violated a prohibition or failed to meet a requirement of this ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
  - a. The performance of monitoring, analyses, and reporting;
  - b. The elimination of illicit connections or discharges;
  - c. That violating discharges, practices, or operations shall cease and desist;
  - d. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
  - e. Payment of a fine to cover administrative and remediation costs; and
  - f. The implementation of source control or treatment BMPs

## 7.2 BMP SELECTION RATIONALE

Washington City selected the following BMPs to address the IDDE requirements set forth by DEQ. BMPs ID-1 and ID-2 describe the City's processes that respond to and document complaints regarding water quality, including illicit discharges, in fulfillment of permit requirements. These two BMPs include a hotline for complaints and protocols for the most efficient and effective follow-up actions in response to calls. Outfall inventory and mapping is a project the City has already completed and will maintain during the permit period in accordance with permit requirements. BMP ID-1 includes the monitoring program conducted by the City to identify and track the sources of illicit discharges. The City's program to prohibit and enforce elimination of illicit discharges is described under BMP ID-1, and addresses section 4.2.3.2 of the permit requirements. Requirements to inform the public regarding the hazards of illicit discharges is also implemented through several of the public education BMPs described in Section 5 of this report.

Proper trash and debris disposal is addressed specifically through BMP ID-3. Requirements addressing non-stormwater discharges require that the City assess these discharges, and determine if they adversely impact the stormwater system. If they are found to cause an adverse impact, appropriate management practices or regulations will be developed and implemented. This assessment and appropriate follow up will be conducted as BMP ID-1.

Per DEQ requirements, Washington City will publicly list and publicize a hotline for reporting of spills and other illicit discharges. A written record shall be kept of all calls received, all follow-up actions taken, and any feedback received from public education efforts. BMP ID-2 addresses this requirement.

**TABLE 7.0** Illicit Discharge Detection and Elimination (IDDE) BMP Summary Table (UPDES 4.2.3)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.3	Developing an IDDE Program			
	ID-1	Illicit Discharge Detection and Elimination (IDDE) Program Development	Public Works	Stormwater Coordinator
4.2.3.9	Public Reporting			
	ID-2	Community Hotline	Public Works	Stormwater Coordinator
4.2.3.7	Trash and Illegal Dumping			
	ID-3	Trash and Debris Management	Public Works	Stormwater Coordinator
4.2.3.11	Education for Municipal Employees			
	ID-4	Municipal Employee Training and Education	Public Works	Stormwater Coordinator

## 7.3 ID-1 ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM DEVELOPMENT



### UPDES Sec. 4.2.3.2

Stormwater regulations define an "illicit discharge" as any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a UPDES Permit (other than the UPDES Permit for discharges from the MS4) and discharges resulting from fire fighting activities. Common sources of non-stormwater, dry weather discharges in urban areas include apartments and homes, car washes, restaurants, airports, landfills, and gas stations, to name a few.

Dry weather discharges contribute significant pollutants to receiving waters. The detection and elimination of illicit discharges is important to protect and restore urban waterways. The development of an effective municipal illicit discharge detection and elimination (IDDE) program requires the establishment of adequate legal authority to prohibit illicit discharges; to assess and prioritize potential areas, pollutants, or behaviors of concern; to coordinate existing resources; to establish a mechanism to track activities; and to establish measurable goals.

Washington City will develop a comprehensive program to address non-stormwater discharges, including reporting hotlines and response procedures.

The City will focus on tracing and eliminating illicit discharges that flow into City infrastructure. The City will prioritize areas for targeted investigation, such as dry weather screening at outfalls.

### Existing Program Elements



### UPDES Sec. 4.2.3.1

#### Outfall Inventory and Mapping

An initial task in locating and eliminating illicit discharges is surveying, inventorying, and mapping all outfalls to the stormwater drainage system. An outfall map, in conjunction with systematic monitoring and sampling, forms the basis for further investigations. Washington City initiated a stormwater drainage system outfall inventory in 2004, which involved a physical inspection of the entire drainage system. At the same time, staff inventoried and mapped all of the outfalls within the City. Since the initial inventory, the City has periodically updated its outfall map and database. The updated outfall map with the associated receiving waters is included in the City's GIS. The inventory database includes information regarding the precise location of each outfall, its source, and additional relevant information such as observed outfall condition. The physical inspection also resulted in locating dozens of additional unmapped and previously unknown outfalls to the stormwater drainage system.



### Illicit Discharge Ordinance

Washington City has established an illicit discharge ordinance to prohibit non-stormwater discharges to its drainage system, including spills, illicit connections, illegal dumping and sanitary sewer overflows (“SSOs”) into the storm sewer system. Enforcement procedures and action have been developed pursuant to DEQ’s requirements. [www.WashingtonCity.org](http://www.WashingtonCity.org)



### UPDES Sec. 4.2.3.3 to 4.2.3.6

### IDDE Handbook

Washington City has established an IDDE Handbook that includes a plan to address non-stormwater discharges to the MS4, including spills, illicit connections, sanitary sewer overflows, and illegal dumping. The IDDE Handbook has been developed to comply with sections 4.2.3.3 to 4.2.3.6 of the UPDES General Permit requirements. Currently, Washington City has developed and is implementing the following elements of the IDDE Handbook:

- Written systematic procedures for locating and listing priority areas in the City that are likely to have illicit discharges This priority area list will be updated annually to reflect changing priorities in accordance with section 4.2.3.3.1.
- Standard Operating Procedures (SOPs) for tracing the source of an illicit discharge in accordance with the City’s Storm Drain Network Tracking Illicit Discharge Investigation Procedures. These procedures include a Tracking Field Sheet that records visual inspections in accordance with section 4.2.3.4.
- SOPs for characterizing the nature of illicit discharges reported by the hotline. These procedures include detailed instructions for evaluating how the discharge shall be immediately contained and steps to be taken for containment of the discharge. An investigation is initiated immediately upon being alerted of a potential illicit discharge as required by section 4.2.3.5.
- An Illicit Discharge Detection Report Form has been developed in the event the source of a non-stormwater discharge is identified and confirmed. The report was developed to meet the requirements of section 4.2.3.5.1 of the permit requirements. Currently, there are no provisions for analytical monitoring.
- Enforcement SOPs for ceasing illicit discharge. These procedures have been developed to comply with section 4.2.3.6 of the permit requirements. Illicit discharges to the MS4 are prohibited. Upon detection, Washington City requires immediate cessation of improper disposal practices upon confirmation of responsible parties in accordance with its Illicit Discharge Detection and Elimination ordinance previously referenced.
- Washington City does not take liability for illicit discharges by others that occur within the City Boundaries even if detected and addressed by Washington City as required by section 4.2.3.6.2.
- SOPs for field assessment activities (ORIs) for the purpose of verifying outfall locations and detecting illicit discharges. Activities including dry weather screening of outfalls or facilities serving priority areas, as well as routine dry weather screening of all outfalls that discharge within Washington City.

## **Proposed MS4 Activities**



### **UPDES Sec. 4.2.3.1**

#### Outfall Inventory and Mapping

The outfall mapping effort will be ongoing as new development and redevelopment result in the construction of new outfalls to the stormwater drainage system. Ongoing efforts will include yearly map updates from “as-built” plans. Periodic additional updates to capture outfalls from new developments or newly permitted dischargers will be conducted as needed.



### **UPDES Sec. 4.2.3.2**

#### Field Assessment Activities

Washington City will assess in the field at least 20 percent of its Class 1 priority areas to detect illicit discharges within one year of receiving coverage from the general permit. The City will also assess in the field an additional 20 percent of the identified high priority water bodies or other high priority areas each year thereafter. Field assessment activities shall utilize an Outfall Reconnaissance Inventory Form (ORI) to document findings.

#### Update IDDE Report Form

Analytical monitoring may be necessary to aid in the identification of potential sources of an illicit discharge and to characterize the nature of the illicit discharge. Washington City intends to develop procedures in determining if analytical monitoring will be required.



### **UPDES Sec. 4.2.3.10**

The City intends to implement a database for mapping and tracking of the number and type of spills or illicit discharges identified. It will also list the inspections that were conducted.

## **Measurable Goals**

Washington City will use the following goals to measure its progress in the Illicit Discharge Detection and Elimination Program development and implementation.

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**Table 7.1:** Measurable Goals for ID-1

Goal	Implementation Schedule
Conduct GIS map updates at least annually and conduct physical re-inspections of new or redeveloped areas every 5 years	Years 1-5
Review existing illicit discharge ordinance in Year 1 and update, if necessary, in Year 2	--
Do field assessment activities that include: <ul style="list-style-type: none"> <li>• Dry weather screening of priority areas</li> <li>• Routine dry weather screening</li> <li>• Annually inspect 20% of priority areas</li> <li>• Annually inspect 20% of Class 2 routine areas</li> </ul>	Years 1-5
Develop SOP in determining whether analytical monitoring will be necessary	Year 1
Update priority area list annually	Years 1-5
Implement database for tracking and mapping of spills or illicit discharge	Year 1

## 7.4 ID-2 COMMUNITY HOTLINE



UPDES Sec. 4.2.3.9

### BMP Description

Section 4.2.3.9 of the permit regulation states, “Permittees shall publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. A written record shall be kept of all calls received, all follow-up actions taken, and any feedback received from public education efforts”.

### Existing Program Elements

Washington City is currently implementing a hotline for the receipt of complaints/reports of illicit discharges or spills, and maintains a tracking system documenting complaints/ incidents and follow-up actions taken. The City uses a database system to record information from the caller. Once the incident information is entered into the system, a city work order is generated and SOPs implemented to respond to public referrals of illicit discharge.



UPDES Sec. 4.2.3.9.1

### Spill Response Handbook

Washington City has currently developed a Spill Response Handbook. This handbook contains written spill/dumping response procedures and a flow chart for internal use, that shows the procedures for responding to public referrals of spills, dumping, or illicit discharges. Also included in the handbook are the various responsible agencies, and their contacts, who would be involved in an illicit discharge incidence response. The contact list will be maintained and updated as changes occur. Spill/dumping response forms are included for documenting the nature of spill/dumping.

### Proposed MS4 Activities

The City will develop a standard form for recording illicit discharge calls. The Hotline number will continue to be provided on informational brochures. The City plans to implement a website reporting system to supplement the Hotline.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Community Hotline BMP development and implementation.

**Table 7.2:** Measurable Goals for ID-2

Goal	Implementation Schedule
Develop a standard form for recording illicit discharge calls	Year 1
Each year the number of calls received and the follow-up actions will be tracked. Information regarding the complaint will also be documented in databases maintained by Public Works	Years 1-5
Continue to publicly list and publicize a Community Hotline number for reporting of spills and other illicit discharges	Years 1-5
Continue to improve cartograph management system as required	Years 1-5
Implement illicit discharge website reporting	Year 3

## 7.5 ID-3 TRASH AND DEBRIS MANAGEMENT



### UPDES Sec. 4.2.3.7

#### BMP Description

Trash and debris have become significant pollutants and detract from the aesthetics of a landscape. Trash also poses a threat to wildlife and human health (e.g., choking hazards to wildlife and bacteria to humans). Citizens should be informed about the environmental consequences of littering. The City will facilitate proper trash disposal by providing assistance to the community in their trash removal.



### UPDES Sec. 4.2.3.8

#### Existing Program Elements

Washington City currently implements a Community Cleanup Day. Monthly, the City provides a free trash collection service. This service is provided to facilitate proper waste management in the community. Additionally, the City characterizes the type of trash and debris collected on Community Cleanup Day. Using this data, the City can more effectively target the communities common pollutants in their Public Education and Outreach Campaign described in Section 5 of this report.

Part of the training program that the City implements for its employees specifically addresses the proper disposal of trash and debris.

Washington County Solid Waste (WCSW) operates a landfill that accepts household hazard waste at specified dates and locations. The landfill is located at the following address.

### Washington County Solid Waste

325 N Landfill Rd

Washington, UT 84780

(435) 673-2813

For more information, including dates and times for pick up and the types of materials accepted, visit the WCSW website provided in the following link.

<http://www.wcsw.org/household-hazardous-waste/>

### Proposed MS4 Activities

Washington City will continue to implement Community Cleanup Day. The City will investigate focusing on this issue in its Public Education and Outreach program.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Trash and Debris Management BMP development and implementation.

**Table 7.3:** Measurable Goals for ID-3

Goal	Implementation Schedule
Continue to implement Community Cleanup Day and provide a free trash collection service monthly	Years 1-5
Track the number of hours dedicated to Community Cleanup Day	Years 1-5
Continue to track and characterize types of trash and debris	Years 1-5
Use the Public Education and Outreach materials to educate citizens on the effects that littering has on stormwater quality	Years 1-5

## 7.6 ID-4 MUNICIPAL EMPLOYEE TRAINING AND EDUCATION



### UPDES Sec. 4.2.3.11

#### BMP Description

The City will implement a training program designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance.

Training will include a general stormwater awareness message on pollution prevention/good housekeeping measures, spill response and prevention, and information about the operation and maintenance and operation of structural BMPs. Proper disposal of trash and debris will be specifically addressed.

The City training program will also include information on stormwater pollution prevention plans (SWPPPs) for municipal facilities and BMPs recommended for use in the field to prevent contaminated discharges. Washington City field staff will be trained to recognize, track, and report illicit discharges.

### **Existing Program Elements**

Washington City currently uses a multi-faceted approach to municipal employee education through in-house training programs, on-the-job reinforcement, general awareness and education materials, and workshops and conferences.

In-house training is conducted in a classroom style program using educational videos. Topics include spill prevention and spill reporting and response. Employees watch videos of the topic, discuss the material, do classroom exercises, and take quizzes.

After this training, on-the job-reinforcement is conducted with employees involved in illicit discharge detection and prevention activities such as outfall reconnaissance. Periodically, managers check employee's work practices to ensure BMPs are implemented properly. General awareness and education materials are both presented by and received by employees as part of public education and outreach efforts. Workshops and conferences about pollution prevention and stormwater management BMPs are attended by program managers.

### **Proposed MS4 Activities**

Washington City will develop and implement a training process for new hires which will be provided immediately upon hire.

### **Measurable Goals**

Washington City will use the following goals to measure its progress in its Employee Training BMP development and implementation.

**Table 7.4:** Measurable Goals for ID-4

Goal	Implementation Schedule
Track dates of training workshops and conferences	Years 1-5
Track number and names of attendees to training workshops and conferences	Years 1-5
Track training workshops and conference topics	Years 1-5
Track training workshops and conference quiz results	Years 1-5
Evaluate IDDE training program and update if necessary	Year 3
Develop and implement process for training new hires	Year 1

## SECTION 8: CONSTRUCTION RUNOFF

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### UPDES Sec. 4.2.4

## 8.1 REGULATION

“All Permittees shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to the MS4 from construction sites with a land disturbance of 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 according to the minimum performance measures listed below; including, projects proposed by the Permittee’s own departments and agencies, shall comply with these requirements.



### UPDES Sec. 4.2.4.2

All Permittees shall develop and implement SOPs or a similar type of document for construction site inspection and enforcement of construction stormwater pollution control measures. The procedures must clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The Permittee must have the authority to the extent authorized by law to impose sanctions to ensure compliance with the local program. These procedures and regulatory authorities must be written and documented in the SWMP.”



### UPDES Sec. 4.2.4.4.1

A “qualified person” is a person knowledgeable in the principles and practice of erosion and sediment controls and pollutant prevention, who possesses the skills to assess conditions at effectiveness of any stormwater controls selected and installed to meet the requirements of this permit, such as but not limited to the following:

- Utah Registered Stormwater Inspector (RSI)
- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Professional in Stormwater Quality(CPSWQ)
- Certified Erosion, Sediment, and Stormwater Inspector (CESSWI)
- Certified Inspector of Sediment and Erosion Control (CISEC)
- National Institute for Certification in Engineering Technologies, Erosion and Sediment Control, Level 3 (NICET)
- Utah Department of Transportation Erosion Control Supervisor (ECS) (applicable to road/street projects only)

## 8.2 BMP SELECTION RATIONALE



### UPDES Sec. 4.2.4.1

Washington City selected the following BMPs to address each component of the construction site runoff control requirements. Regulatory authority for implementation and enforcement of the City's erosion and sediment control program is provided by ordinance. The Grading Manual provides a framework for oversight of construction that requires erosion and sediment control measures during construction or redevelopment of sites disturbing greater than or equal to one acre. Specific requirements for construction site operators are addressed during the Site Plan review processes and are included in the City's Grading Manual, which has been adopted by the City Council as ordinance. Grading Permits require the development of erosion and sediment control plans.



### UPDES Sec. 4.2.4.1.1

Additionally, the ordinance, through the Grading Manual, provides authority to regulate construction sites to prevent or control wastes that can adversely impact water quality. The adopted manuals, ordinances, and programs fulfill requirements set forth by DEQ. The training of City staff to recognize and correct erosion problems on construction sites and to enforce the provisions of the City's adopted ordinances, is a critical component of Washington City's SWMP. The training component is being addressed and specific staff are being prepared for permitting, inspections, and enforcement. The City's Grading Manual requires construction operators to apply sediment and erosion control BMPs and actively follow their SWPPP.

**TABLE 8.0** Construction Stormwater Runoff BMP Summary Table (UPDES 4.2.4)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.4	Municipal Program Oversight			
	CSW-1	Erosion and Sediment Control Ordinance	Public Works	Stormwater Coordinator
	CSW-2	Construction Phase Plan Review		
	CSW-3	Municipal Construction Program Inspection		
--	Construction Site Planning and Management			
	CSW-4	Construction Sequencing	Public Works	Stormwater Coordinator
	CSW-5	Land Grading		
	CSW-6	Preserving Natural Vegetation		
--	Good Housekeeping/Materials Management			
	CSW-7	Best Management Practices Handbook	Public Works	Stormwater Coordinator



## 8.3 CSW-1 EROSION AND SEDIMENT CONTROL ORDINANCE



### UPDES Sec. 4.2.4.1

#### **BMP Description**

This BMP is intended to provide for maintenance, review, and augmentation of City Ordinances and Codes. These ordinances have been adopted to enable administration and enforcement of programs aimed at reducing and/or eliminating erosion and sedimentation associated with both public and private construction land alteration.

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental problems. Per DEQ requirements, Washington City must implement a stormwater management program that includes a component for controlling erosion and sediment on construction sites disturbing at least one acre, or sites less than one acre that are part of a common development. The permit requirements state that the City must establish the appropriate legal authority to accomplish this.

To comply with these regulations, Washington City will use its grading ordinance as the legal mechanism for triggering erosion and sediment control requirements.

#### Washington City Hotline

This BMP establishes enforcement response expectations. Appropriately, failure to respond to enforcement actions or repeated violations will result in escalating enforcement against the offending party.

#### **Existing Program Elements**

In October 2006, the City adopted a comprehensive Grading Manual. This manual was published in conjunction with Washington City's Best Management Practices Handbook. The goal of the Grading Manual is to facilitate the implementation of effective grading, drainage, erosion, and sediment control BMPs as a standard for all land disturbances.

The Manual clearly outlines Washington City's grading permitting program that has been developed to promote environmentally sound construction practices. The Grading Manual contains an element that requires construction operators to prepare a sediment and erosion control plan that specifies the control strategy and BMPs they plan to implement to protect water quality. The Manual does not currently specify this requirement as a "Stormwater Pollution Prevention Plan (SWPPP)". However, the City has required contractors to submit a State SWPPP with their grading permit applications for the last year to ensure that their erosion and sediment control plan addresses all the necessary elements stated in the construction general permit.



#### UPDES Sec. 4.2.4.2

Legal authority has been granted by the City Council to enforce the programs outlined in the Manual. This legal authority will continue to be used as the regulatory component for controlling erosion and sediment on construction sites.

The City currently has a written enforcement strategy to implement the enforcement provisions of the Grading Manual. Standard operating procedures include escalating enforcement procedures and actions. These SOPs include specific processes and sanctions to minimize the occurrence of pollutant discharge and obtain compliance from violators.

#### **Proposed MS4 Activities**

Washington City will continue to use its Grading Manual as its legal authority to enforce erosion and sediment control regulations on construction sites. Any ordinance requirements not currently being met by the City will be added to the Grading Manual and the manual will be the implementation tool for inspection, erosion, and sediment control requirements. The City intends to review its existing grading ordinance to ensure that proper authority has been granted per DEQ requirements.



#### UPDES Sec. 4.2.4.1.1

The Grading Manual will be updated to clarify the requirement for construction operators to prepare a SWPPP consistent with the CGP that applies sediment and erosion control BMPs as necessary to protect water quality. These plans will also outline measures to control waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality. The SWPPP requirements will be equivalent with the SWPPP requirement set forth in the UPDES Stormwater General Permit for Construction Activities.



#### UPDES Sec. 4.2.4.1.3

The Grading Manual will be updated to include a provision for access by qualified personnel to inspect construction stormwater BMPs on private properties that discharge to the MS4.

The Manual will continue to establish enforcement response expectations. As required, failure to respond to enforcement actions or repeated violations will result in escalating enforcement against the offending party. These enforcement actions are clearly outlined in SOPs and the Grading Manual.



#### UPDES Sec. 4.2.4.2.2

Washington City will document and track all enforcement actions.

### Measurable Goals

Washington City will use the following goals to measure its progress in its erosion and sediment control ordinance BMP implementation.

**Table 8.1:** Measurable Goals for CSW-1

Goal	Implementation Schedule
Review and update existing written enforcement strategies	Year 2
Review ordinance	Year 2
Review enforcement strategies	Year 2
Update ordinance if necessary	Year 3
Update Grading Manual to require a SWPPP consistent with the requirements of the CGP	Year 1

## 8.4 CSW-2 CONSTRUCTION PHASE PLAN REVIEW



UPDES Sec. 4.2.4.1

### BMP Description

Washington City will develop and implement a construction site runoff control program to address stormwater runoff from construction activities that result in a land disturbance of one acre or greater.

Construction activities that disturb more than an acre, or sites less than an acre that are part of a larger common development, may pose a significant threat to local waterways based on the large amount of exposed soil. Therefore, implementing proper best management practices can greatly reduce the impacts to the City's receiving water bodies.

The City's procedures for site plan review will include key staff conducting reviews, developing a system to track plans, developing procedures for consistent plan review, and training staff.

The procedures will also include:

- A pre-construction SWPPP review.
- An evaluation of the plan for compliance with low impact design (LID) requirements
- Identifying priority construction sites, as defined in the permit requirements.



#### UPDES Sec. 4.2.4.4.2

Washington City inspects all phases of construction prior to land disturbance, during construction, and following construction. A Notice of Termination (NOT) must be submitted by the construction operator/owner within 30 days following active construction. The City's procedure requires the contractor to file the NOT at a similar timeframe that the building department inspections are being performed to ensure it is submitted within the 30-day timeframe. If landscaping is not completed when the building department inspections are taking place, the contractor is obligated to notify Public Works. Notification is required so that verification of final stabilization and removal of all temporary control measures may be conducted.

### Existing Program Elements



#### UPDES Sec. 4.2.4.3.1

Washington City requires that contractors conduct a "preconstruction" meeting where City inspectors meet with the contractor and their erosion and sediment control plan is evaluated. In the future, the City will ensure that a Stormwater Pollution Prevention Plan (SWPPP) review has been conducted prior to the pre-construction meeting being scheduled so the City can ensure plans are complete and in compliance with State and Local regulations.



#### UPDES Sec. 4.2.4.3.2

The procedures for the pre-construction review have already been developed and include the use of a SWPPP review checklist developed by the City. The SWPPP review checklist can be found on the City's website. In addition to the preconstruction review procedures, SOPs for identifying priority sites have also been developed. The priority site SOPs have yet to be implemented into the City's review process. The City has developed a SWPPP processes procedure for contractors/owners that outlines the process to prepare and submit a SWPPP to the state and City. This SWPPP process procedure is also designed to aid them in preparing plans that are complete and in compliance with regulations. This aid also outlines the process to prepare and submit a SWPPP to the state and City.



#### UPDES Sec. 4.2.4.3

Development and implementation of a checklist for pre-construction SWPPP review that is consistent with the requirements of the current UPDES Stormwater General Permits for Construction Activities and keep records for, at a minimum, all construction 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 which collectively disturbs land greater than or equal to one acre, to ensure plans are complete and in compliance with State regulations. Permittees shall keep records of these projects for five years or until construction is completed, whichever is longer.



**UPDES Sec. 4.2.4.4**

The City's SWPPP Procedures SOPs include procedures for Construction General Permit (CGP) projects and Common Plan Permit (CPP) projects. The SOPs include the process for non-compliant SWPPP reviews and the process for bringing them into compliance. CGP and CPP reviews are documented in Cartegraph.

**Proposed MS4 Activities**

Washington City staff will review stormwater site plans to ensure they address requirements and protect water quality. Review staff will ensure that water quality objectives, erosion and sediment control requirements, and BMP maintenance are adequately considered.



**UPDES Sec. 4.2.4.1.1 and 4.2.4.1.2**

The UPDES Stormwater General Permit for Construction Activities requires that construction sites disturbing greater than or equal to one acre have a site-specific Stormwater Pollution Prevention Plan (SWPPP) for their stormwater discharges. This SWPPP will be submitted to the City for review when the contractor/citizen applies for a grading permit. A construction project tracking system will be utilized and the construction site operator will be required to submit proof of a Notice of Intent (NOI) submission to the state before the City approves a project.



**UPDES Sec. 4.2.4.3.1**

Washington City will conduct a pre-construction SWPPP review that will 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. Procedures for the pre-construction review have been developed and include the use of a checklist. The grading permit will be modified to specifically provide the City with access to private property for the purposes of inspecting stormwater BMPs or discharges to the MS4. Through training, the City will emphasize the importance of utilizing the checklist during SWPPP reviews. The SWPPP reviews along with any deficient items will be documented.



**UPDES Sec. 4.2.4.3.3**

Procedures for identifying priority sites have been developed by the City. The City's review process will include identifying priority construction sites, as defined in the permit requirements. These priority sites will be inspected biweekly.



**UPDES Sec. 4.2.4.4.4**

The City will look to utilize an electronic site inspection tool in place of up to one-half of on-site MS4 inspections at a construction site as permitted by the permit. The City would need to demonstrate to the Director that any proposed tool meets the requirements of Permit Part 4.2.4.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Construction Phase Plan Review BMP implementation.

**Table 8.2:** Measurable Goals for CSW-2

Goal	Implementation Schedule
Incorporate into review procedures the evaluation of potential LID design opportunities	Year 3
Incorporate into review procedures the identification of high priority construction sites	Year 1
Update construction phase stormwater plan review procedures if necessary	Years 1-5
Update review procedures for identifying priority construction sites	Year 3
Modify grading permit to specifically allow the City access to private property for the purposes of inspecting stormwater BMPs	Year 1

## 8.5 CSW-3 MUNICIPAL CONSTRUCTION INSPECTION PROGRAM



UPDES Sec. 4.2.4.4

### BMP Description

Construction sites lacking adequate stormwater controls can contribute significant amounts of sediment to streams and rivers. To reduce the water quality impacts of active construction sites, UPDES regulations require construction projects greater than one acre, or sites less than one acre that are part of a larger common development, to install and maintain appropriate erosion and sediment control, stormwater management, and housekeeping BMPs.

In addition, the UPDES regulations require Washington City to implement programs to control runoff from construction sites. These regulations include reviewing construction plans, conducting site inspections, and enforcing control measures necessary to minimize water quality impacts. This BMP focuses on the City developing a construction inspection program and inspecting construction sites within its jurisdiction.



UPDES Sec. 4.2.4.4.5

Washington City has provided a Hotline for the community to report stormwater related Issues. Records of these violations are kept, along with the violation and follow up records. The following Hotline Numbers will be on each contractor's construction site signs so individuals can report on a certain site.

### Stormwater Discharge Reporting Hotline

Hotline Number: (435) 656-6317

After Hours: (435) 634-5730

### Existing Program Elements

Washington City has developed SOPs for construction site inspection and to enforce construction stormwater pollution control measures. These procedures specify who is responsible for site inspections and who has authority to implement enforcement procedures. The City utilizes the Public Safety Department to impose penalties and ensure compliance with the Stormwater Program requirements.



#### UPDES Sec. 4.2.4.4.1

Currently, Washington City conducts monthly inspections for active construction sites. These inspections are filed with the Public Works Department. The City has developed a procedure for construction operators/owners to notify the City when active construction is completed, so that verification of final stabilization and removal of all temporary control measures can be conducted.



#### UPDES Sec. 4.2.4.4.2

The City inspects all phases of construction. An inspection is conducted prior to land disturbance, during active construction, and following active construction. City projects are inspected to the same level as other projects.

The Stormwater Manager periodically evaluates randomly selected inspection reports and provides feedback as needed. The City emphasizes following up on deficiencies to have them addressed. The City will emphasize in training the importance of documenting all inspections and calling out deficient items. Follow-up inspections for deficient items will be documented including any corrective action that has taken place.



#### UPDES Sec. 4.2.4.5

All City employees whose primary job duties are related to permitting, plan review, construction site inspections, and enforcement, are trained by the City to conduct these responsibilities. The City utilizes education videos to train their employees. Training records are kept by the City that include dates, activity descriptions, and names of staff in attendance.

### Proposed MS4 Activities



#### UPDES Sec. 4.2.4.4.1 and 4.2.4.4.3

The City will continue inspections of all new construction sites with a land disturbance of greater than or equal to one acre, or sites less than one acre that are part of a larger common development. These inspections will be conducted monthly.

The City will conduct biweekly inspections of priority sites using the state Construction Stormwater Inspection Form. Based on site inspection results, the City will take necessary follow-up actions to facilitate compliance in accordance with the City enforcement strategies.



#### UPDES Sec. 4.2.4.6

Washington City will keep records of inspections and enforcement actions that include verbal warnings, stop-work orders, warning letters, notices of violation, and other enforcement records. The City will continue to track and document its enforcement actions with their database system.



#### UPDES Sec. 4.2.4.5

The City will ensure that all new hires are trained within 60 days of hire date and annually thereafter, at a minimum. Follow-up training will be provided as needed to address changes in procedures, methods or staffing. The training records that will be kept include dates, activities or course descriptions, and names and positions of staff in attendance. Training procedures will be updated to include specific stormwater topics.

All City employees whose primary job duties are related to implementing the construction stormwater program, will continue to receive training as outlined in Section 4.2.4.5 of the permit requirements. Washington City will continue to promote the development of the Stormwater Coalition and encourage it to train municipal employees.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Municipal Stormwater Inspection Program BMP implementation.

**Table 8.3:** Measurable Goals for CSW-3

Goal	Implementation Schedule
Implement biweekly inspections of identified priority sites	Year 1
Continue to conduct monthly inspections of active construction sites	Years 1-5
Conduct biweekly inspections of identified priority sites	Years 1-5
Track number and type of inspections	Years 1-5
Track number of enforcement actions	Years 1-5
Train of City staff annually whose primary duties are related to implementing the Stormwater Program	Years 1-5
City training procedures will be updated to include specific stormwater topics	Year 1
Train new hires within 60 days of hire	Years 1-5



## 8.6 CSW-4 CONSTRUCTION SEQUENCING

### BMP Description

Construction sequencing is a specified work schedule that coordinates the timing of grading activities and the installation of erosion and sediment control measures. Washington City currently recommends in its grading manual that contractors/owners develop a construction sequence schedule. This sequence schedule is intended to reduce on-site erosion and offsite sedimentation by performing grading and installing erosion and sediment control practices in accordance with a planned schedule.

### Existing Program Elements

In Section 3.2 of Washington City's Grading Manual, the ten elements of an effective grading plan are provided. Included on this list of effective elements is the recommendation that contractors/owners develop a construction sequence schedule. Construction sequencing is a specified work schedule that coordinates the timing of land-disturbing activities and the installation of erosion and sediment control measures. This sequence schedule is intended to reduce on-site erosion and off-site sedimentation by performing grading and installing erosion and sediment control practices in accordance with a planned schedule. Only disturbing the required parts of a site helps to prevent erosion from inactive parts.

The Manual recommends that grading activities and construction are completed with soils effectively stabilized on one part of the site before grading and construction commence at another part.

### Proposed MS4 Activities

The City will continue to recommend that contractors/ owners incorporate a construction sequencing component into their grading plan. The construction sequencing recommendation will be reviewed and updated, if necessary, through the life of the permit.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Construction Sequencing BMP implementation.

**Table 8.4:** Measurable Goals for CSW-4

Goal	Implementation Schedule
Update sequencing recommendations in the Grading Manual	Year 1
Review Construction sequencing recommendations	Year 2
Evaluate number of grading plans incorporating grading sequencing	Years 1-5

## 8.7 CSW-5 LAND GRADING

### BMP Description

Section 3 of the Grading Manual, recommends techniques for land grading. Land grading involves grading and reshaping a surface to planned grades as determined by an engineering survey, evaluation, and layout. While land grading provides more suitable topography for buildings and facilities, it can also help to control surface runoff, soil erosion, and sedimentation during and after construction.

This BMP is applicable to sites with uneven or steep topography or easily erodible soils. Land grading is designed to stabilize slopes and decrease runoff velocity.

### Existing Program Elements

In Section 3.2 of Washington City's Grading Manual, the ten elements of an effective grading plan are provided. Included on this list of effective elements is the recommendation that contractors/owners utilize land grading as a means to control surface runoff, erosion, and sediment during and after construction.

The Manual particularly focuses on protecting steep slopes. Steep slopes can be comprised of existing slopes that are to be preserved, or cut/fill slopes created during the grading process. For example, the Manual stipulates that no proposed slopes shall exceed a rise to run ratio of 3:1 runoff shall be diverted away from steep slopes and recommends that terracing be incorporated in the grading of steep slopes. Land grading should be a key consideration for Construction Sequencing, so that exposed soils are minimized at any given time during construction.

The Grading Manual recommends that grading activities should maintain existing drainage patterns as much as possible.

### Proposed MS4 Activities

The City will continue to require that contractors/owners incorporate a land grading component into their grading plan. The land grading requirement will be reviewed and updated, if necessary, through the life of the permit.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Land Grading BMP implementation.

**Table 8.5:** Measurable Goals for CSW-5

Goal	Implementation Schedule
Update existing land grading recommendations in the Grading Manual	Year 1
Review land grading recommendations	Year 2
Update land grading recommendations in Grading Manual if necessary	Years 2-5

## 8.8 CSW-6 PRESERVING NATURAL VEGETATION

### BMP Description

The principle advantage of preserving natural vegetation is that it provides erosion control, stormwater detention, biofiltration, and aesthetic values to a site during and after construction activities. Also, natural vegetation reduces stormwater runoff by intercepting rainfall, protecting soil surface from the impact of raindrops, holding soil particles in place, maintaining the soil's capacity to absorb water, and promoting infiltration. Natural vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation.

### Existing Program Elements

A development BMP that Washington City recommends in its Grading Manual for site operators to incorporate into their grading plan is site “fingerprinting.” Fingerprinting involves clearing and grading only areas that are necessary for building activities and equipment traffic. Maintaining undisturbed temporary or permanent buffer zones in the grading operation provides a low-cost sediment control measure that will help reduce runoff and offsite sedimentation. The City recommends that contractors/owners design their grading plans with erosion and sediment control and stormwater management goals in mind. To ensure that the plan is implemented as intended, contractors should carefully supervise grading crews.

### Proposed MS4 Activities

The City will continue to recommend that contractors/owners incorporate fingerprinting into their grading plan. This recommendation will be reviewed and updated, if necessary, through the life of the permit.

### Measurable Goals

Washington City will use the following goals to measure its progress in its Preserving Natural Vegetation BMP implementation.

**Table 8.6:** Measurable Goals for CSW-6

Goal	Implementation Schedule
Update existing preserving natural vegetation recommendations in the Grading Manual	Year 1
Review preserving natural vegetation recommendations	Year 2
Update preserving natural vegetation recommendations in the Grading Manual if necessary	Years 2-5

## 8.9 CSW-7 BEST MANAGEMENT PRACTICES HANDBOOK

### BMP Description

Choosing effective construction BMPs is one of the key challenges facing anyone interested in improving or protecting water quality. In 2006, Washington City published the Washington City Grading Manual in conjunction with the Best Management Practices Handbook. Having access to preferred construction and post-construction BMPs helps contractors make better decisions. In the Handbook each preferred BMP is discussed in terms of:

- Description and purpose
- Objectives
- Suitable applications
- Limitations
- Potential alternatives
- General implementation, design and layout, and materials
- Installation
- Inspection and maintenance

Note: The Handbook provides “Do and don’t” picture references for each BMP, as well as a standard drawing for inclusion with construction plans.

### **Existing Program Elements**

Washington City currently publishes the Best Management Practices and Grading Plan Standard Notes and Details in conjunction with the Grading Manual field section. The handbook is also available on the City website. BMPs are selected from the Handbook as part of an integrated process for obtaining grading permits. The Handbook provides contractors easy access to preferred BMPs to improve the overall quality of projects graded within the City.

### **Proposed MS4 Activities**

The City will continue to use the Grading Manual to obtain grading permits. In year one of the permit cycle, the BMP Handbook will be reviewed and updated. Based on data collected in years one and two, the BMP Handbook will be reviewed again in year three and recommendations made for changes. The BMP Handbook will be updated again in year five, if necessary.

### **Measurable Goals**

Washington City will use the following goals to measure its progress in its Best Management Practices Handbook BMP implementation.

**Table 8.7:** Measurable Goals for CSW-7

Goal	Implementation Schedule
Review and update BMP handbook	Years 3,5

## SECTION 9: POST-CONSTRUCTION STORMWATER MANAGEMENT

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UPDES Sec. 4.2.5

### 9.1 REGULATION

“All Permittees shall revise as necessary, implement and enforce a program to address Post-Construction stormwater runoff to the MS4 from new development and redevelopment construction sites disturbing 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.

The object of this control measure is for the hydrology associated with the new development to mirror the predevelopment hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of stormwater. The water quality considerations of this minimum control measure do not replace or substitute for water quantity or flood management requirements implemented at the local level for new developments. The water quality controls may be incorporated into the design of structures intended for flow control; or water quality control may be achieved with separate control measures. The program must apply to private and public development sites, including roads.

### 9.2 BMP SELECTION RATIONALE

Washington City has developed and adopted an ordinance (Ordinance 2012-07) that focuses on Post-Construction Stormwater Management. This ordinance includes Best Management Practices, Enforcement, Penalties, and requires new development and redevelopment to acquire a Post-Construction Stormwater Management Plan.



UPDES Sec. 4.2.5.1

The City selected the following BMPs to meet the Post-Construction minimum control measures requirements. The Washington City Grading Manual requires that new developments and redevelopment incorporate stormwater management control measure BMPs to reduce the impacts associated with stormwater runoff generated at the site. The Permittee must develop and define a specific hydrologic method or methods for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs in their jurisdiction and to facilitate plan review.



#### UPDES Sec. 4.2.5.2

Washington City included with this ordinance, routine maintenance inspection to maintain the original line, grade and hydraulic capacity; including the original purpose of the facility. Washington City will use enforcement through the Code Enforcement Officer, the Public Works Director, or they're designee who is authorized by the Municipality to administer and enforce this ordinance.



#### UPDES Sec. 4.2.5.2.1

The Grading Manual will continue to establish enforcement response expectations. As required, failure to respond to enforcement actions or repeated violations will result in escalating enforcement against the offending party. These enforcement actions are clearly outlined in developed SOPs and the Grading Manual.



#### UPDES Sec. 4.2.5.1.2 and 4.2.5.1.3

The Dixie Stormwater Coalition, which includes Washington City, has developed a manual titled *Green Infrastructure and Low Impact Development Application Guidance for Washington County, Utah*. The Low Impact Development (LID) manual provides requirements and guidance for the onsite retention of the 80th percentile rainfall event for projects that are one acre or greater per the requirements in 4.2.5.1.2. This requirement includes projects that are part of a larger common plan of development or sale which collectively disturbs less than or equal to one acre. The LID approach promotes the implementation of BMPs that allow stormwater to infiltrate, evapotranspire or harvest and use stormwater on site to reduce runoff from the site and protect water quality. Aside from the specific guidance outlined in the LID Guidance, any approach that meets all requirements of 4.2.5.1.2, and is feasible, may be utilized.

The LID objectives must be accomplished by the use of practices that are designed, constructed, and maintained to infiltrate, evapotranspire and/or harvest and reuse rainwater. The 80th percentile rainfall event is the event whose precipitation total is greater than or equal to 80 percent of all storm events over a given period of record.

In addition to new development, redevelopment projects that disturb greater than or equal to one acre, including projects less than an acre that are part of a larger common plan of development or sale which collectively disturbs land greater than or equal to one acre must provide a site-specific and project-specific plan aimed at net gain to onsite retention or a reduction to impervious surface to provide similar water quality benefits. If a redevelopment project increases the impervious surface by greater than 10%, the project shall manage rainfall on-site, and prevent the off-site discharge of the net increase in the volume associated with the precipitation from all rainfall events less than or equal to the 80th percentile rainfall event. This objective must be accomplished by the use of practices that are designed, constructed, and maintained to infiltrate, evapotranspire and/or harvest and reuse rainwater.

**TABLE 9.0** Post-Construction Stormwater Runoff BMP Summary Table (UPDES 4.2.5)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.5	Municipal Program Elements			
	PSW-1	Post-Construction Runoff Ordinance	Public Works	Stormwater Coordinator
	PSW-2	Innovative BMPs for Site Plans		See Section 9.4

## 9.3 PSW-1 POST-CONSTRUCTION STORMWATER MANAGEMENT ORDINANCE



### UPDES Sec. 4.2.5.2

#### BMP Description

This BMP is intended to ensure that Washington City Post-Construction Stormwater Management Ordinances are maintained to require new developments to incorporate stormwater quality and quantity management facilities (structural and nonstructural) into site plans and land divisions.

The regulations are intended to meet the requirements of the Post-Construction Stormwater Management minimum control measure by ensuring that post-construction stormwater runoff from new development and redevelopment is treated to minimize adverse impacts on the stormwater drainage system and preserve riparian function to the maximum extent practicable. The Development Code provisions ensure that land use/development proposals incorporate structural systems (such as oil/water separators) and non-structural systems into site designs. The Engineering Design Standards and Procedures Manual provides specific guidance and flexible options to ensure the stormwater quality systems are structurally sound and effective at meeting the BMP objective.

#### Existing Program Elements

In October 2006, the City adopted a comprehensive Grading Manual. This manual was published in conjunction with Washington City's Best Management Practices Handbook. The goal of the Grading Manual is to facilitate the implementation of effective grading, drainage, and erosion and sediment control BMPs as a standard for all land disturbances.

The Grading Manual clearly outlines Washington City's grading permitting program that has been developed to promote environmentally sound construction practices. The Grading Manual contains an element that requires construction operators to stabilize a construction site before the site's active construction status can be terminated.

Legal authority has been granted by the City Council to enforce the programs outlined in the Grading Manual.

The Grading Manual has been amended to require post-construction BMP selection, design, installation, operation and maintenance standards necessary to protect water quality and reduce the discharge of pollutants to the MS4.

### **Proposed MS4 Activities**

#### Municipal Post-Construction Inspection Program

Washington City has adopted an ordinance that requires long term post-construction stormwater controls at new development and redevelopment sites that are greater than one acre, or less than one acre that are part of a larger common development. This ordinance will also include a provision for access by qualified personnel to inspect post-construction stormwater BMPs on private properties that discharge to the MS4. The City will review its existing Grading Manual to ensure that technical requirements set forth, at a minimum, meet the requirements of the UPDES Stormwater General Permit for Construction Activities. The Manual will be the regulatory mechanism for inspection, erosion, and sediment control requirements.



#### **UPDES Sec. 4.2.5.3.1 and 4.2.5.3.2**

The City will implement procedures for site plan review which will evaluate water quality impacts. The procedures shall apply through the life of the project from conceptual design to project closeout.

Furthermore, the City will review post-construction plans for, at a minimum, all new development and redevelopment 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, to ensure that the plans include long-term stormwater management measures that meet the requirements of this minimum control measure.



#### **UPDES Sec. 4.2.5.2.4**

Permanent structural BMPs will be inspected at least once during installation by qualified personnel. Upon completion, long-term BMPs will be verified to ensure they were constructed as designed.



#### **UPDES Sec. 4.2.5.2.5**

Inspections and any necessary maintenance will be conducted annually. The Permittee, or owner/operator must conduct the inspections and necessary maintenance. On sites where the proper owner/operator is conducting maintenance, the City will inspect those stormwater control measures at least once every five years, or more frequently as needed. The findings will be documented in an inspection report.





UPDES Sec. 4.2.5.5

The City will ensure that all staff involved in post-construction stormwater management, including those that conduct plan review, annual maintenance inspections, and enforcement, receive appropriate training. Training will be provided or made available for staff in the fundamentals of long-term stormwater management through the use of structural and non-structural control methods. The training records that will be kept include dates, activities or course descriptions, and names and positions of staff in attendance. The City will ensure that all new hires are trained within 60 days of hire and annually thereafter, at a minimum. Follow-up training will be provided as needed to address changes in procedures, methods or staffing.

### Measurable Goals

Washington City will use the following goals to measure its progress in its post-construction stormwater management ordinance BMP implementation.

**Table 9.1:** Measurable Goals for PSW-1

Goal	Implementation Schedule
Review ordinance	Year 3
Update ordinance if necessary	Year 4
Review enforcement strategies	Year 3
Update enforcement strategies if necessary	Year 4
Develop documentation on how the requirements of the ordinance or other regulatory measures will protect water quality	Year 3

## 9.4 PSW-2 INNOVATIVE BMPS FOR SITE PLANS

### BMP Description



UPDES Sec. 4.2.5.3.1

This BMP meets the requirements of the permit that require Washington City's development/redevelopment program to have requirements or standards that ensure that any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality.



UPDES Sec. 4.2.5.1.1

This BMP requires property owners and operators to include a combination of structural and non-structural BMPs and ensure adequate long-term operation and maintenance of BMPs.

Washington City's development/redevelopment program includes non-structural BMPs to minimize development in areas susceptible to erosion and sediment loss. These BMPs are intended to minimize the disturbance of native soils and vegetation, and to preserve areas in the municipality that provide important water quality benefits.

### **Responsible Party**

The Washington City Stormwater Coordinator will be responsible for the implementation of this BMP and its evaluation. The involvement of the other City departments will be utilized when possible.

Washington City requires that contractors ensure that final BMPs are installed at the appropriate times in accordance with the accepted grading plans and Grading Manual. The City requires that the final BMPs be installed and functioning before a Notice of Termination (NOT) is issued by the City. It is the responsibility of the project manager to ensure that final BMPs are installed at the earliest opportunity.

The City has provided a Grading Manual which includes structural and non-structural BMPs that are recommended by the City to stabilize areas that are susceptible to erosion and sediment loss. The BMPs are also intended to implement measures for flood control and protect the integrity of natural resources and sensitive areas. Some BMPs have specific time requirements for installation and are identified in the Grading Manual.

### **Existing Program Elements**

The Washington City Grading Manual includes several BMPs the City recommends contractors implement for construction and post-construction site stormwater control to be in compliance with the requirements set forth by DEQ.

The City's pre-construction review procedure is discussed in Section 8. Prior to construction, the City reviews the SWPPPs for all new development and redevelopment sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common development. Currently, the SWPPP review includes an element for long-term stormwater management measures for post-construction controls.



#### **UPDES Sec. 4.2.5.1.2**

The Low Impact Development (LID) manual by the Dixie Stormwater Coalition provides requirements and guidance for the onsite retention of the 80th percentile rainfall event for projects that are one acre or greater. The LID approach promotes the implementation of BMPs that allow stormwater to infiltrate, evapotranspire or harvest and use stormwater on site to reduce runoff from the site and protect water quality. Aside from the specific guidance outlined in the LID Guidance, any approach that meets all requirements of 4.2.5.1.2, and is feasible, may be utilized.

### **Proposed MS4 Activities**

The selection and design of post-construction controls will meet the stipulations of section 4.2.5.1 in the permit requirements. The considerations to be used in evaluation post-construction controls include; clogging or obstruction issues, freeze-thaw problems, effect on slope stability, groundwater, and the ability to effectively maintain the control.



#### **UPDES Sec. 4.2.6.9**

Washington City is investigating a plan and procedures to retrofit existing developed sites that may be adversely impacting water quality. The retrofit plan will emphasize green infrastructure where feasible for municipally owned high priority buildings. The following sites have been ranked for potential retrofit:

1. Maintenance Building at the Golf Course
2. Public Works Building

The City's plan would include a ranking of control measures to determine any additional facilities suited for retrofitting as well as those that could later be considered for retrofitting. The City will meet the requirements set forth in section 4.2.6.9 when developing the criteria for the retrofit plan.



#### **UPDES Sec. 4.2.5.4**

Washington City will maintain an inventory of all post-construction structural stormwater control measures installed and implemented at new developments and redeveloped 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. The inventory shall include both public and private sector sites located within the Permittee's service area. The City is still in the process of mapping all detention/retention ponds and LID features.



#### **UPDES Sec. 4.2.5.4.1**

The Inventory List must include basic information on each project, such as, owner's name, contact information, location, start/end date, a description of the design specifications, short description of maintenance requirements and inspection information.



#### **UPDES Sec. 4.2.5.4.2**

Based on 4.2.5.4.1 the Permittee must update the inventory when changes occur; such as, ownership and specific control measures implemented at the site change.

### Measurable Goals

Washington City will use the following goals to measure its progress in its innovative BMPs for site plans implementation.

**Table 9.2:** Measurable Goals for PSW-2

Goal	Implementation Schedule
Develop process to evaluate and encourage a LID approach to the implementation of structural BMPs	Year 3
Develop plan to retrofit existing developed sites that are adversely impacting water quality	Year 5
Implement retrofit plan	Year 5
Track number of existing developed sites that have been retrofitted	Year 5
Complete mapping of all detention/retention ponds and LID features	Year 1

## SECTION 10: GOOD HOUSEKEEPING

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UPDES Sec. 4.2.6

### 10.1 REGULATION

“All Permittees shall implement a program for Permittee-owned or operated facilities, operations and structural stormwater controls that includes standard operations procedures (SOPs), pollution prevention BMPs, SWPPs or similar type of documents, and a training component that have the ultimate goal of preventing or reducing the runoff of pollutants to the MS4 and Waters of the State. All components of the program shall be included in the SWMP document and must identify the department (and where appropriate, the specific staff) responsible for performing each activity described in this section. The Permittee must develop an inventory of all such Permittee-owned or operated facilities. The Permittee must review this inventory annually and update as necessary.”



UPDES Sec. 4.2.6.1

Permittees shall develop and keep current a written inventory of Permittee-owned or operated facilities and stormwater controls that may include but is not limited to:

- Airports
- Animal control facilities
- Chemical storage facilities
- Composting facilities
- De-icing storage facilities
- Equipment storage and maintenance facilities
- Fuel farms
- Hazardous waste disposal facilities
- Incinerators
- Hazardous waste handling and transfer facilities
- Landfills
- Landscape maintenance on municipal property
- Material storage yards
- Pesticide storage facilities
- Libraries, police stations, fire stations
- Municipal buildings
- Permittee-owned and/or maintained structural stormwater controls
- Public parking lots
- Public golf courses

- Public marinas and boat launches
- Public restrooms
- Public swimming pools
- Public work yards
- Recycling facilities
- Solid waste handling and transfer facilities
- Street repair and maintenance sites
- Transportation hubs (bus stations)
- Vehicle salvage yards
- Vehicle storage and maintenance yards



#### UPDES Sec. 4.2.6.2

All Permittees shall assess the written inventory of Permitte-owned or operated facilities, operations and stormwater controls identified in Part 4.2.6.1 for their potential to discharge the following typical urban pollutants: sediment, nutrients, metals, hydrocarbons (e.g., benzene, toluene, ethylbenzene and xylene), pesticides, chlorides, and trash. Other pollutants may be associated with, but not generated directly from the municipally-owned or operated facilities, such as bacteria chlorine, organic matter, etc. Therefore, the committee must determine additional pollutants associated with its facilities that could be found in stormwater discharges. A description of the assessment process and findings must be included in the SWMP.



#### UPDES Sec. 4.2.6.3

Based on the assessment required in part 4.2.6.2, the Permittee must identify as “high-priority” those facilities or operations that have a potential to generate stormwater pollutants. Among the factors that must be considered in giving a facility a “high priority” ranking is the amount of urban pollutants stored at the site, the identification improperly stored materials, activities that must be performed outside (e.g., changing automotive fluids), proximity to water bodies, poor housekeeping practices, and discharge of pollutant(s) of concern to impair water(s).



#### UPDES Sec. 4.2.6.4

A SWPPP must be developed for each “high priority” facility which should outline measures to prevent pollutants from entering the storm drain system from each of these facilities and contain an inspection schedule of the facility. The SWPPP shall include a site map showing the following information:

- Facility address
- Staff/contact information for the facility
- Property boundaries
- Buildings and impervious surfaces
- Directions of stormwater flow (use arrows)

- Locations of structural control measures
- Facility BMPs (non-structural)
- Location and name of the nearest defined drainage(s) which could receive runoff from the facility, whether it contains water or not
- Locations of all stormwater conveyances including ditches, pipes, basins, inlets, and swales
- Locations where on-site activities may be exposed to stormwater, including, but not limited to the following:
  - Fixed fueling operations
  - Vehicle and equipment maintenance and/or cleaning areas
  - Brine making areas
  - Loading/unloading areas
  - Waste storage or disposal areas
  - Liquid storage tanks
  - Process and equipment operating areas
  - Materials storage or disposal areas
- Locations where significant spills or leaks have occurred
- Locations of all visual stormwater monitoring points
- Locations of stormwater inlets and outfalls, with a unique identification code for each outfall and an approximate outline of the areas draining to each outfall.
- Locations of all non-stormwater discharges
- Locations of sources of run-on to your site from adjacent properties



#### UPDES Sec. 4.2.6.1.1

The City currently has “Good Housekeeping” SOPs that include SOPs for the following practices, in addition to all other practices listed in 4.2.6.6.1, to ensure they are protective of water quality:

- Planned/unplanned open excavation
- Waterline flushing
- Open irrigation ditch
- De-icing
- Chip seal
- Concrete work
- Asphalt overlays and patching
- Slurry seal
- Mobile power wash industry
- Catch basin maintenance
- Debris basin
- Detention/retention & drainage swales maintenance
- Street sweeping
- Dog parks
- Cleaning chemicals

- Sidewalks, parking lots, and trails
- Restroom maintenance
- Pesticides
- Fertilizer
- Lawn mowing and trimming
- Cleaning chemicals
- Equipment maintenance and cleaning



UPDES Sec. 4.2.6.6.1 to 4.2.6.6.6

Washington City has developed an inspection report for each Permittee—owned or operated facilities. This inspection report is located at the facilities and kept current by weekly and quarterly inspection reports. The inspection report details the property boundaries, the building's impervious surface, location of structural control measures, and location and name of the nearest defined drainage which could receive runoff from the facility, whether it contains water or not. It also details the location of all stormwater conveyances, including ditches, pipes, basins, inlets and seals and the location where the following activities are exposed to stormwater: fixed fueling operations, vehicle and equipment maintenance and or cleaning area; brine making areas, loading and unloading areas, waste storage or disposal areas, liquid storage tanks, process and equipment operating areas, materials storage or disposal areas. Each facility is unique and may not need all of the above information on their inspection report.

Inspection reports have been developed for Building and Facilities; including, Permittee-owned and operated offices, police and fire station, pools, and parking garages. Inspection reports have been developed for material storage areas. Inspection reports have been developed for parks and open spaces and includes the proper storage and disposal of fertilizer, pesticides and herbicides. Inspection reports have been developed for Vehicle maintenance and repair activities that occur on Permittee-owned or operated vehicles .

Inspection reports have been developed for schedule sweeping streets and Permittee-owned and operated parking lots maintenance, pavement marking, sealing and repaving, right of way maintenance, including mowing, herbicide and pesticide and pesticide application; and municipally-sponsored events, parades or street fairs.

Inspection reports have been developed for the regular inspection, cleaning and repair of catch basins, stormwater conveyance pipes, ditches and irrigation canals, culverts, structural stormwater controls, and structural runoff treatment and/or flow control facilities.

## **10.2 BMP SELECTION RATIONALE**

The City selected the following BMPs, to address minimum control measures and Pollution Prevention in Municipal Operations.



BMP GH-1 outlines how Washington City owns and operates numerous facilities, including maintenance yards, parks, office buildings, schools, and other city-owned properties. The objective of this BMP in managing stormwater at municipal facilities is to prevent pollutants released during city activities from entering storm drain systems or receiving waters. To effectively prevent or reduce stormwater pollution, the City will inventory its facilities and associated activities to assess potential impacts on stormwater quality and revise activities or implement new measures as needed. These activities and control measures will be described in the Operations and Maintenance Program. The program describes management actions that will be taken to reduce pollution from City sites or activities.

BMP GH-2 is intended to comply with section 4.2.6.5.1, 4.2.6.5.2 and 4.2.6.5.3 of the permit requirements. This section stipulates that an O&M program has been designed for City-owned or operated facilities and includes the following inspections:

- Weekly visual inspections
- Quarterly comprehensive inspections.
- Annual visual observation of stormwater discharges.

To comply with DEQ requirements, the City has developed SOPs, inspection reports, and has facility logs to track and record facility inspections. BMP GH-3 outlines Washington City's employee training program. This program is designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance.

**TABLE 10.0** Good Housekeeping/Pollution Prevention BMP Summary Table (UPDES 4.2.6)

Permit	BMP ID	Best Management Practice (BMP)	Lead Agency	Responsible Party
4.2.6	Municipal Pollution Prevention/Good Housekeeping			
	GH-1	Municipal Facilities Management	Public Works	Stormwater Coordinator
	GH-2	Municipal Inspection Program		
	GH-3	Municipal Employee Training and Education		

## 10.3 GH-1 MUNICIPAL FACILITIES MANAGEMENT



UPDES Sec. 4.2.6

### BMP Description

Washington City owns and operates numerous facilities, including maintenance yards, parks, office buildings, schools, and other city-owned properties. The objective of managing stormwater at municipal facilities is to prevent pollutants released during city activities from entering storm drain systems or receiving waters.

To effectively prevent or reduce stormwater pollution, the City will inventory its facilities and associated activities to assess potential impacts on stormwater quality and revise activities or implement new measures as needed.

Public construction projects shall comply with the requirements applied to private projects.



**UPDES Sec. 4.2.6.10**

All employees, contracted staff, and other responsible entities that have primary construction, operation, or maintenance job functions that are likely to impact stormwater quality need to receive annual training. Training records must be kept; including dates, names, positions of staff, activities or course description. Followup training shall be provided as needed to address changes in procedures.

**Existing Program Elements**

Washington City has developed an Operations and Maintenance (O&M) program for each City owned or operated facility. An organization chart illustrating the department party responsible for performing each activity described in this section has been developed. This organization chart can be found in Section 1.3 of this report.



**UPDES Sec. 4.2.6.1**

The City has developed an inventory of all City owned or operated facilities. This facility inventory will be reviewed and updated annually as necessary.



**UPDES Sec. 4.2.6.6.6**

The City has developed an inventory of all floor drains located in City owned or operated facilities. This inventory has been developed in conjunction with an exhibit of each City facility illustrating the location of the storm drain system. The inventory is continuously being updated to include newer City buildings.

**Proposed MS4 Activities**

Washington City has developed and implemented an O&M program for all City-owned or operated facilities. Per DEQ requirements, the O&M program has incorporated operations, SOPs and structural stormwater controls. The program is intended to prevent or reduce pollutant runoff from City owned or operated facilities. The program was developed pursuant to section 4.2.6 of the permit requirements.



#### UPDES Sec. 4.2.6.1

The inventory list will be updated annually or as necessary. Washington City does not currently have any facilities covered under the General UPDES Permit for Stormwater Discharges Associated with Industrial Activities.



#### UPDES Sec. 4.2.6.2

After the facility inventory list has been created, the facilities will be initially assessed for their potential to contribute the typical urban pollutants as outlined in section 4.2.6.2 to stormwater runoff. Once this assessment has been completed, the SWMP document will be amended to include a description of the assessment process and findings.



#### UPDES Sec. 4.2.6.3

Based on the facility assessment, the City will identify “high-priority” facilities or operations that have a high potential to generate stormwater pollutants. Included in the criteria for a high priority ranking, as outlined in section 4.2.6.3, is the amount of urban pollutants stored at the site, the identification of improperly stored materials, activities that must be performed outside, proximity to water bodies, poor housekeeping practices, and the discharge of Washington City’s pollutant of concern to the Virgin River.

For each “high priority” facility that the City identifies, it will develop facility-specific standard operating procedures (SOPs). These SOPs will include BMPs that will reduce the discharge of pollutants to the MS4. The City will investigate LID techniques for all new and redeveloped Permittee-owned or operated facilities. For each “high priority” facility that the City identifies, a SWPPP will be developed which will outline measures to prevent pollutants from entering the storm drain system.



#### UPDES Sec. 4.2.6.6

For each City owned facility, or City sponsored activity, a site specific O&M manual/program will be developed. The O&M program will include appropriate pollution prevention and good housekeeping procedures, as defined in section 4.2.6 for all of the following types of facilities and/or activities:

- Buildings and Facilities.
- Material storage areas, heavy equipment storage areas , and maintenance areas.
- Parks and open space
- Vehicle and Equipment
- Roads, highways, and parking lots
- Stormwater collection and conveyance system
- Other facilities and operations that would be reasonably be expected to discharge contaminated runoff



#### UPDES Sec. 4.2.6.7

If Washington City contracts with a third party to conduct municipal maintenance, the City will ensure, through contractually-required documentation or periodic site visits, that the third party is using appropriate stormwater controls and following the standard operating procedures, stormwater control measures, and good housekeeping practices the City would use to conduct municipal maintenance.



#### UPDES Sec. 4.2.6.8

Washington City will develop and implement a procedure to assess the water quality impacts in the design of all new flood management structural controls that are associated with the City or that discharge to the City's storm sewer system. This procedure will also include assessing existing flood management structural controls to determine whether changes or additions should be made to improve water quality. In developing these procedures, the City will consider controls that can be used to minimize the impacts to site water quality and hydrology while still meeting project objectives.

### Measurable Goals

Washington City will use the following goals to measure its progress in its municipal facilities management BMP implementation.

**Table 10.1:** Measurable Goals for GH-1

Goal	Implementation Schedule
Develop a map of storm drains located on City owned or operated properties	Year 1
Update storm drain map for City owned or operated properties, as necessary	Years 2-5
Develop SWPPP for each of the "high priority" facilities	Year 1
Update O&M Program(s), as necessary	Years 4-5
Clean 20% of City catch basins; Track number and results	Years 1-5
Sweep at least 100% of City Streets; Track miles and debris	Years 1-5
Develop and implement a process to assess the water quality impacts in the design of all new flood management structural controls	Years 1-5

## 10.4 GH-2 MUNICIPAL INSPECTION PROGRAM



#### UPDES Sec. 4.2.6.5

### BMP Description

Section 4.2.6.5 of the permit stipulates that an O&M program designed for City-owned or operated facilities be developed and include the following inspections:

- Weekly visual inspections
- Quarterly comprehensive inspections.
- Annual visual observation of stormwater discharges.

To comply with DEQ requirements, the City will develop SOPs, inspection reports, and unique facility logs to track and record facility inspections.

### **Existing Program Elements**

Washington City has developed standard operating procedures and inspection forms for all City-owned or operated facilities. These inspection procedures and forms have been developed pursuant to section 4.2.6.5 of the permit requirements and include:

- Weekly visual inspections
- Quarterly comprehensive inspections.

These developed forms and procedures will be implemented into a Municipal Post Construction Program that will be included in the facility Operation and Maintenance Manuals.

### **Proposed MS4 Activities**

As previously mentioned, Washington City has developed SOPs and inspection forms for all City-owned or operated facilities. These inspection procedures and forms will be implemented in year one (1) of this permit cycle. The Washington City Stormwater Organizational chart in Section 1.3 outlines the parties responsible for inspections at each facility. The City is required to conduct and record the following types of inspections.



#### **UPDES Sec. 4.2.6.5.1**

#### **Weekly Visual Inspections**

The City will perform weekly visual inspections of high priority facilities in accordance with the developed SOPs to minimize the potential for pollutant discharge. The purpose of these weekly visual inspections is to identify evidence of spills or illicit discharge and immediately clean them up to prevent contact with precipitation or runoff. A log has been created for every facility to track and record inspections. The inspection log includes spill reports that identifies any deficiencies and the corrective actions taken to rectify the deficiencies.



#### **UPDES Sec. 4.2.6.5.2**

#### **Quarterly Comprehensive Inspections**

At least once per quarter, the City will conduct a comprehensive inspection of high priority facilities in accordance with developed SOPs. This comprehensive inspection will focus on waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar pollutant generating areas as stipulated in DEQ's permit requirements. A log has been created for every facility to track and record quarterly comprehensive inspections. The inspection log includes spill reports that identifies any deficiencies and the corrective actions taken to rectify the deficiencies.



#### UPDES Sec. 4.2.6.5.3

##### Annual Visual Observation of Stormwater Discharges

At least once per year, the City will visually observe the quality of the stormwater discharges from its high priority facilities pursuant to section 4.2.6.5.3 of the permit requirements. Any observed problems that can be associated with pollutant sources or controls will be rectified to prevent discharge to the storm drain system. SOPs, inspection reports, and a facility log will be developed to track and record visual observations. The inspection report will include any identified deficiencies and the corrective actions taken to rectify the deficiencies. Any observed deficiencies would need to be rectified as soon as possible, but before the next storm event at a minimum.

##### **Measurable Goals**

Washington City will use the following goals to measure its progress in its municipal inspection program BMP implementation.

**Table 10.2:** Measurable Goals for GH-2

Goal	Implementation Schedule
Maintain and update inspection schedule for high-priority facilities listed in Section 10.1	Years 1-5
Perform and document annual visual observations of stormwater discharges and document	Years 1-5
Re-evaluate inspection forms	Year 3

## **10.5 GH-3 MUNICIPAL EMPLOYEE TRAINING AND EDUCATION PROGRAM**



#### UPDES Sec. 4.2.6.10

##### **BMP Description**

Washington City's employee training programs are designed to teach staff about potential sources of stormwater contamination and ways to minimize the water quality impact of municipal activities, such as park and open space maintenance, fleet and building maintenance, construction and land disturbances, and storm drain system maintenance. The City training program will include a general stormwater awareness message, pollution prevention/good housekeeping measures, and spill response and prevention. The training program will also include information on SWPPPs for municipal facilities and BMPs recommended for use in the field to prevent contaminated discharges.

Washington City field staff should be trained to recognize, track, and report illicit discharges. Because municipalities expect residents and business owners to practice pollution prevention and good housekeeping, City employees should set an example for the rest of the community to follow.

#### **Existing Program Elements**

Washington City has established a training program for field maintenance staff to address safety, materials handling, waste disposal, or other issues. The City's training program format is a classroom style. These meetings include watching educational videos with any additional questions addressed. Basic stormwater information and details about pollution prevention and BMPs are also addressed. Quizzes are given at the completion of the training and scores recorded in employee files.

#### **Proposed MS4 Activities**

The City will conduct more comprehensive training when new employees are hired. Whenever possible, the City will provide additional in-field training to demonstrate proper implementation of operation and maintenance of BMPs and housekeeping measures at municipal facilities. Educational videos will continue to be the primary tool used during training. Emphasis will be made to make the training procedures more specific to Washington City.

#### **Measurable Goals**

Washington City will use the following goals to measure its progress in its municipal training BMP implementation.

**Table 10.3:** Measurable Goals for GH-3

Goal	Implementation Schedule
Continue to conduct training; track dates, topics, attendees; and quiz results	Years 1-5
Modify training process to be more specific to Washington City	Year 1

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