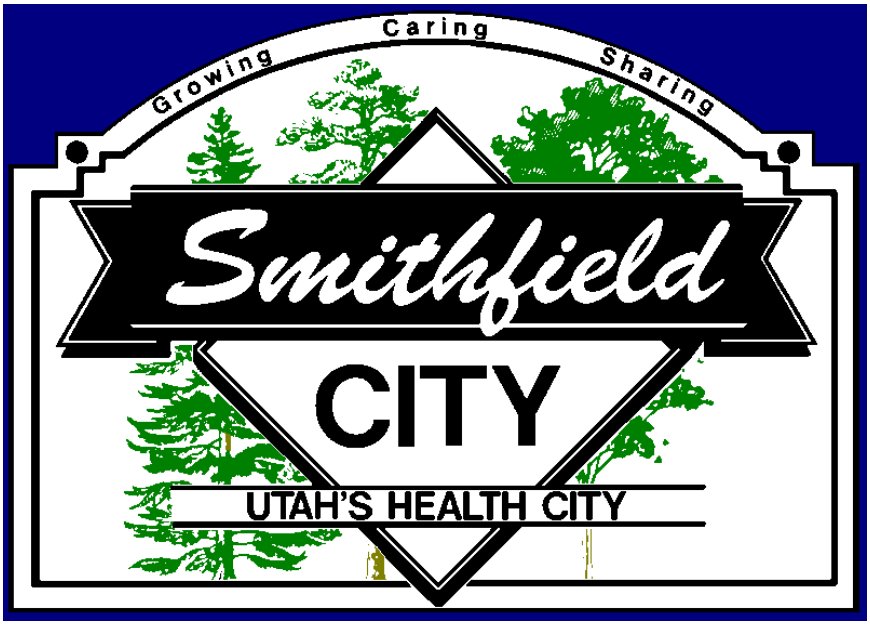

SMITHFIELD CITY

STORM WATER

MANAGEMENT PROGRAM

November 2021

Storm Water Management Program Plan

Permittee: SMITHFIELD CITY
Permit Number: UTR090030
Location of MS4: Smithfield Utah
Submitted with this permit is the following:

- ☐ A map of the MS4 location
- ☐ Information Regarding the overall quality concerns, priorities, and measureable goals specific to the Permittee that were considered in the development and/or revisions to the SWMP document
- ☐ A description of the program elements that will be implemented in each of the six minimum control measures
- ☐ A description of any modifications to ordinances or long-term/ongoing processes implemented in accordance with the previous MS4 general permit for each of the six minimum control measures
- ☐ A description of how the Permittee intends to meet the requirements Permit as described in Part 4.0 by either referencing existing program areas that already meet the Permit requirements or a description and relevant measurable goals that include, as appropriate, the year by which the Permittee will achieve required actions, including interim milestones.
- ☐ If applicable indication of joint submittal of Co-Permittees and the associated responsibility in meeting requirements of the SWMP

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"

Authorized Signature

Date

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EXECUTIVE SUMMARY

This Storm Water Permit application was completed in the fall of 2010. It has been designed to be Smithfield City's Storm Water Management Program. There are no significant changes in the existing permit UTR090030 that expired in 2008. Smithfield City has been operating in compliance with Utah's Storm Water Phase II requirements through a Notice-of-Intent (NOI) application. This NOI was in effect until the Utah Division of Water Quality could reassess their criteria for an MS4 Management Program. The Division has made its determination of what shall be in the program. The Following information is Smithfield City's Storm Water Management Program application it is to be completed and sent by November 8,2021.

INTRODUCTION

Polluted storm water runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Storm Water Phase II Rule establishes an MS4 storm water management program that is intended to improve the Nation's waterways by reducing the quantity of pollutants that are introduced into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides and fertilizers from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

Priorities and Concerns

A Storm Water Management Program should:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP);
- Protect water quality;
- Satisfy the appropriate water quality requirements of the Clean Water Act; and
- Be a continuation and improvement of the 2003 SWMP.
- Smithfield City does not currently discharge into any impaired waters 303d, However it is under the management program to limit TMDL's into Cutler Reservoir

GLOSSARY OF TERMS

Authorized Enforcement Agency: Employees or designees of the director of the municipal agency designated to enforce this ordinance.

Berm: An earthen mound used to direct the flow of runoff around or through a structure.

Best Management Practices (BMPs): Includes schedules of activities, prohibitions of practices, maintenance procedures, design standards, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly into the waters of the United States. BMPs also include treatment requirements, operating procedures, educational activities, and practices to control plant site runoff spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

BOD5: A measure of the amount of oxygen that is consumed by bacteria as it breaks down organic matter in a sample during a five-day period under standardized conditions.
It is generally considered to be a measure of organic material in the water.

CIP (Capital Improvement Plan): A plan developed by municipalities to identify and prioritize improvements that need to be made in upcoming years.

Clean Water Act (CWA): The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Conveyance System: Any channel or pipe for collecting and directing the stormwater.

Culvert: A covered channel or large diameter pipe that directs water flow below the ground surface.

Degradation: (Biological or chemical) The breakdown of chemical compounds into simpler substances, usually less harmful than the original compound, as with the degradation of a persistent pesticide. (Geological) Wearing down by erosion. (Water) The lowering of the water quality of a watercourse by an increase in the amount of pollutant(s).

Dike: An embankment to confine or control water, often built along the banks of a river to prevent overflow of lowlands; a levee.

Directly Connected Impervious Areas (DCIA): Impervious surfaces that are directly connected to the storm drainage conveyance system. Directly connected means that there is no chance for infiltration or evapotranspiration before entering the conveyance system.

Discharge: The release of stormwater or other substance from a conveyance system or storage container.

Drainage: Refers to the collection, conveyance, containment, and/or discharge of surface and stormwater runoff.

Erosion: The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road building, or timber-cutting.

Fill: A deposit of earth material placed by artificial means.

First Flush: The delivery of a disproportionately large load of pollutants during the early part of storms due to the rapid runoff of accumulated pollutants.

***General Permit*:** A permit issued under the NPDES program to cover a class or category of stormwater discharges.

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

Hazardous Waste: By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (flammable, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Heavy Metals: Metals of high specific gravity, present in municipal and industrial wastes, that pose long-term environmental hazards. Such metals include cadmium, chromium, cobalt, copper, lead, mercury, nickel, and zinc.

Illicit Connection: Any physical connection to a publicly maintained storm drain system allowing discharge of non-storm water which has not been permitted by the public entity responsible for the operation and maintenance of the system.

Illicit Discharge: Any direct or indirect non-storm water discharge to the storm drain system, except discharges from fire fighting activities and other discharges exempted in this ordinance.

Illicit Discharge Detection and Elimination (IDDE): A program that each municipality develops to identify and eliminate any illicit discharges they might have within their collection system.

Impervious Surface: A surface which prevents or retards the penetration of water into the ground including, but not limited to roofs, sidewalks, patios, driveways, parking lots, concrete and asphalt paving, gravel, compacted native surfaces and earthen materials, and oiled, macadam, or other surfaces which similarly impede the natural infiltration of storm water.

Individual Permit: A permit issued under the NPDES program for a specific facility, whereby the unique characteristics of that facility may be addressed through the imposition of special conditions or requirements.

Infiltration: The downward movement of water from the surface to the subsoil. The infiltration capacity is expressed in terms of inches/hour.

Ingress/Egress: The points of access to and from a property.

Inlet: An entrance into a ditch, storm sewer, or other waterway.

Low Impact Development (LID): This term is used to describe means and methods that can be utilized to reduce the impact of development on the environment.

Municipal Separate Storm Sewer System (MS4): A municipally owned and operated storm water collection system that may consist of any or all of the following: curb & gutter, drainage swales, piping, ditches, canals, detention basins, inlet boxes, or any other system used to convey storm water that discharges into canals, ditches, streams, rivers, or lakes not owned and operated by that municipality.

Mulch: A natural or artificial layer of plant residue or other materials covering the land surface which conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

Nonpoint Source: Pollution caused by diffuse sources (not a single location such as a pipe) such as agricultural or urban runoff.

NPDES (National Pollutant Discharge Elimination System): EPA's program to control the discharge of pollutants to waters of the United States.

NPDES Permit: An authorization, or license, or equivalent control document issued by EPA or an approved state agency to implement the requirements of the NPDES program.

Off-site: Any area lying upstream of the site that drains onto the site and any area lying downstream of the site to which the site drains.

On-site: The entire property that includes the proposed development.

Outfall: The point, location, or structure where wastewater or drainage discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

***Point Source*:** Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

Plat: A map or representation of a subdivision showing the division of a tract or parcel of land into lots, blocks, streets, or other divisions and dedications.

Pollutant: Generally, any substance introduced into the environment that adversely affects the usefulness of a resource. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Receiving Waters: Bodies of water or surface water systems receiving water from upstream constructed (or natural) systems.

Retention: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

Riparian: A relatively narrow strip of land that borders a stream or river.

Riprap: A combination of large stone, cobbles and boulders used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.

Runon: Stormwater surface flow or other surface flow which enters property other than that where it originated.

Runoff: That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

Sedimentation: The process of depositing soil particles, clays, sands, or other sediments that were picked up by runoff.

Sheet Flow: Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

Source Control: A practice or structural measure to prevent pollutants from entering stormwater runoff or other environmental media.

Stabilization: The proper placing, grading and/or covering of soil, rock, or earth to ensure its resistance to erosion, sliding, or other movement.

Standard Operating Procedure (SOP): A written description of the standard method of performing a given task. Can include a step by step description. SOP's are developed in an effort to bring consistency to a program and to clearly define the expectations of that program. They should be the basis of training programs for municipal employees.

Storm Drain: A slotted opening leading to an underground pipe or open ditch for carrying surface runoff.

Stormwater: Rainfall runoff, snow melt runoff, and drainage. It excludes infiltration.

Storm Water Management Program (SWMP): A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems, and/or receiving waters.

Storm Water Pollution Prevention Plan (SWPPP): A document which describes the general plan for addressing storm water pollutants at a given site. The plan characterizes the nature of the potential pollutants, describes methods and concepts for controlling those pollutants and identifies those responsible for the plan.

Swale: An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water. Swales direct stormwater flows into primarily drainage channels and allow some of the stormwater to infiltrate into the ground surface.

TMDL (Total Maximum Daily Load): An acronym for and in this Permit 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.

Total Suspended Solids (TSS): An analytical measure of the amount of sediment suspended in water. TSS is typically comprised of larger sediment particles and does not include fine clays and silts that might be dissolved.

Treatment Control BMP: A BMP that is intended to remove pollutants from stormwater.

Underground Injection Wells (UIW): A hole receiving storm water whose top dimension is narrower than the depth.

UPDES (Utah Pollutant Discharge Elimination System)*:* The State of Utah's program to control the discharge of pollutants to waters of the United States.

Waters of the State: Surface waters and ground waters within the boundaries of the State of Utah and subject to its jurisdiction.

Waters of the United States: Surface watercourses and water bodies as defined in 40 CFR § 122.2. including all natural waterways and definite channels and depressions in the earth that may carry water, even though such waterways may only carry water during rains and storms and may not carry storm water at and during all times and seasons. ***Wetlands:*** An area that is regularly saturated by surface or ground water and subsequently characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include: swamps, bogs, marshes, and estuaries

Permit UTR090030

This Storm Water Permit application was completed in the fall of 2010. It has been designed to be Smithfield City's Storm Water Management Program. There are no significant changes in the existing permit UTR090030

Effectiveness Evaluation Criteria

The chosen measurable goals, submitted in this plan, become the required storm water management program; however, the NPDES permitting authority (UDWQ) can require changes in the mix of chosen BMPs and measurable goals if all or some of them are found to be inconsistent with the provisions of the Phase II Final Rule. Likewise, the permittee can change its mix of BMPs if it determines that the program is not effective as it could be. The criteria used in choosing a BMP or goal is found in appendix A.

Reports

Each year Smithfield will submit an annual report. This report will be completed and sent to the NPDES permitting authority three months after the end of the fiscal year. The reports must include:

- The status of compliance with permit conditions, including an assessment of the appropriateness of the selected BMPs and progress toward achieving the selected measurable goals for each minimum measure;
- Results of any information collected and analyzed, including monitoring data if any;
- A summary of the storm water activities planned for the next reporting cycle;
- A change in any identified BMP or measurable goals for any minimum measure; and
- Notice of relying on another governmental entity to satisfy some of the permit obligations (if applicable).

Record Keeping

Records required by the NPDES permitting authority must be kept for at least five years and made accessible to the public at reasonable times during regular business hours. Records need not be submitted to the NPDES permitting authority unless the permitee is requested to do so. In the event that a construction or subdivision has not been completed in five years the inspection copies will be kept until three years after the NOT has been issued for said construction. Records are to be current and available for permitting authority to examine in the event of an audit. The Records are in the format of spreadsheets, GIS files, and handwritten journals.

Deadlines

The NPDES permitting authority has mandated that Phase 2 operators
are to have complete a revised SWMP and submit a copy within 180 days from August 1, 2010 it is due December 1, 2010

Public Notice

Smithfield City will have a copy of the SWMP available on its website Smithfieldcity.org or a hard copy will be available upon request from the Engineering department. The location of Smithfield City's Engineering Department is: 96 South Main Street Smithfield Utah 84335. Comments pertaining to the Storm Water Management Plan its operation under the State NPDES authority can be submitted to Smithfield City or (DEQ) 195N 1950 W SLC Utah 84114. A violation by the operator of the SWMP is federally enforceable and also includes the right for interested parties to sue under citizen suit provision (section 405) of CWA.

Controlling Regulated Pollutants

The storm water in Smithfield City drains to a series of canals and ditches where it is transported to Summit Creek or the Bear River. At present, the city has encountered isolated problems related to the canals capacities. These problems were all associated with excessive flows during storm events. The agreement between cities and canal companies is attempting to address this situation.

The water quality within the city of Smithfield is relatively good. None of the streams or waterways have been identified as protected under Section 303(d) of the Clean Water Act. However the ultimate destination of waters from Smithfield and its surrounding communities ends in the Cutler Reservoir. Cutler is presently restricted by (DEQ) as to the Total Maximum Daily Load (TMDL) that is allowed to contribute to pollution in this water body. The hope and intent of this Storm Water Management program (SWMP) is to maintain that status and possibly even improve the current water quality. Being a part of the tributaries to the Cutler Reservoir Smithfield City is very concerned with phosphorous load. The SWMP tries to address excess phosphorous setting standards for dry ponds and controlling construction run-off. The standard we have set to control phosphorous is to control run-off turbidity. There is some evidence that the amount of phosphorous correlates to the amount of suspended solids I the storm water. So by controlling the visible suspended solids our hope is to reduce phosphorous.

Like most communities in the valley, the biggest concerns involve:

- Sediment loads coming from disturbed sites and streets,
- Fertilizers and pesticides coming from lawns and farmlands,
- Oils and grease coming from the roadways,
- Animal waste coming from dairies with runoff and when flushed out.

Smithfield's SWMP has been geared toward small city applications, targeting the pollutants mentioned. The focus of this plan is to do what we can within the community, trying to stay in harmony with the rural nature of the community and within the existing budget structure.

STATEMENT OF BASIS
GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM WATER SYSTEMS

GENERAL PERMIT **UTR090030**

1.0. Introduction

The Federal Clean Water Act requires that storm water discharges from certain types of facilities be authorized under storm water discharge Permits. (See 40 CFR 122.26.) The goal of the storm water Permits program is to reduce the amount of pollutants entering streams, lakes and rivers as a result of runoff from residential, commercial and industrial areas. The original 1990 regulation (**Phase I**) covered municipal (i.e., publicly owned) storm sewer systems for municipalities over 100,000 population. The regulation was expanded in 1999 to include smaller municipalities as well. This expansion of the program to include small MS4s is referred to as **Phase II**. This Permit (UTR090000) serves as a re-issuance or replacement of the previous General Permit for Discharges from Small Municipal Separate Storm Sewers (MS4s) issued December 9, 2002. This Permit is intended to cover new or existing discharges composed entirely of storm water from MS4s required by the State to obtain a Permit.

2.0. Background

The State of Utah was granted primacy in the National Pollutant Discharge Elimination System (NPDES) program by USEPA in 1987. In Utah, storm water discharge Permits are issued by the Utah Department of Environmental Quality, Division of Water Quality (the "Division"). Utah's program is known as the Utah Pollutant Discharge Elimination System (UPDES) Program. The Phase II small municipal separate storm sewer systems (MS4s) are covered under a general Permit for storm water discharges from MS4s. The narrative requirements of this Permit are intended to reduce the discharge of pollutants to the maximum extent practicable (MEP) and meet water quality standards through the development and implementation of a Storm Water Management Program (SWMP). Implementation of a SWMP involves implementation of a variety of Best Management Practices (BMPs) to reduce the discharge of pollutants from the MS4. MEP is the standard that establishes the level of pollutant reductions that operators of regulated MS4s must achieve through implementation of BMPs included in their SWMPs. There are no numeric effluent limitations included in this Permit. Storm Water Management Program requirements are the controls used in place of numeric limits to achieve a reduction of pollutants in the storm water discharge from small MS4s. A SWMP is comprised of six minimum control measures that must be developed and implemented. These measures include:

1) Public Education and Outreach
2) Public Involvement/Participation
3) Illicit Discharge Detection and Elimination
4) Construction Site Storm Water Runoff Control
5) Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management)
6) Pollution Prevention and Good Housekeeping for Municipal Operations

.

The Permittee must develop a SWMP that meets the requirements of the six minimum measures and protects state waters from pollution, contamination, and/or degradation. The Permit allows the MS4 flexibility to determine appropriate BMPs to satisfy each of the six minimum control measures. The BMPs employed to reduce pollutants to the MEP may be different for each small MS4 given the unique local concerns that may exist and the different possible pollutant control strategies. The Division may evaluate the Permittees' proposed storm water BMPs to determine if they meet the requirements of this Permit and if a reduction to the MEP can be achieved. Evaluation of the effectiveness of a SWMP and application of the MEP standard should be an iterative process. The standard of MEP and the necessary modifications to the SWMP should continually adapt to current conditions and BMP effectiveness. The Permitee must continually assess the effectiveness of the current BMPs and expand or better tailor the BMPs to comply with this Permit and protect water quality, and to satisfy the appropriate water quality requirements of the *Utah Water Quality Act*.

3.0. Changes in this General Permit

The format of this Permit has been modified for ease of referencing specific citations. Basic requirements within each minimum control measure have changed very little although they have been expanded with more specific descriptions in

order to clarify the intent of each minimum control measure. Thorough documentation of all BMPs has been emphasized throughout the Permit. Any changes from the first public noticed permit have been indicated in the Comments and Reponses. Significant changes are listed below:

Application and Storm Water Management Program

This Permit serves as both a renewal Permit for those covered under the previous Permit as well as provides coverage for New Applicants. Renewal Permittees should have fully implemented SWMPs which include all six minimum control measures. New applicants are given the full Permit term to implement a SWMP except where specific deadlines are indicated. The Division has emphasized the Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control and Post-Construction Storm Water Management in New Development and Redevelopment minimum control measures and has indicated that all Permittees shall fully develop, implement and enforce a program in these areas within **18 months** of receiving coverage under this Permit.

New Applicants will have **180 days** from Division notification to submit a Notice of Intent (NOI) in accordance with Part 2.2. of this Permit and a Storm Water Management Program (SWMP) whereas Renewal Permittees will have **120 days** from the effective date of this Permit to submit an updated SWMP in accordance with Part 2.3. of this Permit.

Storm Water Management Program Evaluation

As mentioned in Part 2.0 of this Statement of Basis, it is imperative that Permittees have an iterative process for evaluating the effectiveness of their SWMPs. Therefore, within 90 days after the effective date of this Permit, all Permittees shall have an ongoing process for gathering, maintaining, and using information to conduct planning, set priorities, track the development and implementation of the SWMP, evaluate Permit compliance/non-compliance, and evaluate the effectiveness of the SWMP implementation as stated in Part 4.1.2. of the Permit.

Phase II MS4 Permits require the development and implementation of a SWMP which contains the details of the implementation of Permit requirements. Therefore, provisions in the SWMP are enforceable as Permit requirements and should therefore be available for public review and comment as described in Parts 4.2.2.2. and 4.2.2.3. Each Permittee must secure the resources necessary to meet all requirements of this permit as indicated in Part 4.1.2.2.

Illicit Discharge Detection and Elimination

Field assessment activities such as dry weather screening was a requirement of the previous Permit and continue to be a requirement in this Permit. Permittees were required to prioritize areas likely to have illicit discharges. This Permit includes a specific minimal inspection schedule for these areas as indicated in 4.2.3.3.2. This schedule consists of inspecting at least **20 percent** of these priority areas within one year of receiving coverage under this Permit and continuing to assess an additional 20 percent each year thereafter for the Permit term as described in Part 4.2.3.3.2.

A specific requirement to publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges is indicated in Part 4.2.3.9.

Construction Site Storm Water Runoff Control

The previous Permit required Permittees to develop and implement requirements for construction site operators to implement appropriate erosion and settlement control best management practices. This Permit further clarifies this requirement by stating that the Permittee shall require construction operators to prepare a Storm Water Pollution Prevention Plan (SWPPP) as further described in Part 4.2.4.1.1. Part 4.2.4.3.1 requires the Permittee to review these SWPPPs.

Part 4.2.4.5. requires training for MS4 staff in the fundamentals of erosion prevention and sediment control and in how to review SWPPPs.

The evaluation of opportunities for use of low impact design (LID) and green infrastructure, as well as the encouraged use where possible, is required to be incorporated into the SWPPP review process (Part 4.2.4.3.3). Although the terms "LID" and "Green Infrastructure" were not used in the previous permit, BMPs which could be considered as such were discussed in the Post-Construction minimum control measure of the previous permit and are also discussed in this Permit.

Monthly inspections of all new construction sites that disturb one acre or more, or are part of a common plan of development or sale, and biweekly inspections of priority construction sites defined in Part 4.2.4.3.4. are required.

The Construction Storm Water Inspection Form (Checklist) found on the Division's website at http://www.waterquality.utah.gov/UPDES/stormwatercon.htm is required to be used for construction site inspections (Part 4.2.4.4.1).

Post-Construction Storm Water Management in New Development and Redevelopment

As of May 11, 2010, rainwater harvesting is now legal in the state of Utah. Therefore the harvest and use of storm water has been included in this minimum control measure, specifically Parts 4.2.5.3.2 and 4.2.5.3.3.

The ordinance or other regulatory mechanism must include a provision for both construction-phase inspection and post-construction access for Permittees to inspect storm water BMPs on private properties that discharge to the MS4 as described in Part 4.2.5.5.1.

Retrofitting existing post-construction structural controls is addressed in Part 4.2.5.3.2.

Adequate training of all staff involved in Permitting, planning, and review is required in 4.2.5.6.

SWPPPs are required to be reviewed for long-term storm water management measures (post-construction) prior to construction (Part 4.2.5.4.1).

Although long-term operation and maintenance was addressed in the previous permit, Part IV.B.5.a.(12), further detail has been provided in this Permit. Structural BMPs shall be inspected at least once during installation (Part 4.2.5.5.2), inspected annually by the Permittee and maintained as necessary (4.2.5.5.3). The property owner/operator or third party may conduct an inspection in lieu of the Permittee through a maintenance agreement and with annual certification provided by the owner/operator or third party (Part 4.2.5.5.1). If an owner/operator or third party conducts operation and maintenance, through a maintenance agreement, the Permittee is required to verify and ensure proper maintenance of those structures at least once during the 5-year Permit term.

Pollution Prevention and Good Housekeeping for Municipal Operations

In April, 2010, EPA issued the "Municipal Separate Storm Sewer System Permit Improvement Guide" which contains much more descriptive requirements for the Pollution Prevention/Good Housekeeping Minimum Control Measure (MCM). Therefore, vehicle and equipment maintenance facilities covered under the MSGP will be covered under this reissued General Permit for Storm Water Discharges from Small MS4s. The SWPPPs generated for compliance for the MSGP must be updated to reflect the requirements of this permit. The Pollution Prevention/Good Housekeeping MCM has been restructured somewhat to accommodate the new EPA guidance and therefore many of the citations have changed.

Low impact development (LID) techniques should be considered for all new and redeveloped municipal facilities.

Permittee-owned facilities have weekly, quarterly comprehensive, and quarterly visual inspection requirements (Part 4.2.6.6.).

All Permittee-owned or operated storm water structural BMPs must be inspected annually to ensure that they are properly maintained to reduce the discharge of pollutants into receiving waters (Part 4.2.6.4.6).

Reporting

All Permittees must submit an annual report to the Division by October 1 following each year of the Permit term. The report must be submitted using the report form provided on the Division's website, http://www.waterquality.utah.gov/UPDES/stormwatermun.htm.

Record Keeping

The Permittee shall retain all required plans, records of all programs, records of all monitoring information, copies of all reports required by this Permit, and records of all other data required by or used to demonstrate compliance with this Permit, for at least five years as stated in Part 5.4.4. Some records, as in the case of common plans of development, may have to be retained longer than 5 years.

Permit Duration

This Permit will be effective for five (5) years.

Public Notice and Public Comment Period

The initial public notice period began on December 4, 2009 and ended on January 7, 2010. The public notice ran in the *Salt Lake Tribune* and the *Deseret News* and was also posted on the Utah Division of Water Quality's Public Notice website at http://www.waterquality.utah.gov/PublicNotices/index.htm.

A second public notice period will begin on May 24, 2010 and end on June 24, 2010. The public notice will run in the *Salt Lake Tribune* and the *Deseret News* and will also be posted on the Utah Division of Water Quality's Public Notice website at http://www.waterquality.utah.gov/PublicNotices/index.htm.

Comments Received and DWQ Responses

Please refer to the Utah Division of Water Quality's Public Notice website at http://www.waterquality.utah.gov/PublicNotices/index.htm for the response to comments received from the initial public notice period (December 4, 2009 through January 7, 2010).

SMITHFIELD CITY CHARACTERISTICS

General Information

Population:	14142
Size:	5.85 sq. miles
Geographic Description:	7 miles North of Logan. Located on the East side of Cache Valley with elevations varying between 4520 ft. to 4870 ft.
Receiving Waters:	Smithfield is part of the recharge basin for the Bear River.
Annual Precipitation:	17.36 inches per year

Type of Community: A small rural city with high rates of residential growth that are expected to continue for many years.

Latitude: 41°50’ 05”° N

Longitude: 111°49’ 55” W

Storm Drain System

The Smithfield storm water system consists of curb and gutters, culverts, a few typical piped sections, swales and canals. Most storm water facilities continue to drain into irrigation canals where they empty into Summit Creek, a natural waterway that empties into the Bear River or continue northward and eventually empty into the Bear River. The canals have served as the recipient for storm water flows since the city’s establishment. Continuing improvements and retention/detention controls exist within the system. Many of the streets use curb and gutter to collect storm water runoff with the remaining using swales or ditches.

Storm Water Management Agreement

Smithfield City is a partner in the Cache Stormwater Coalition a group of cities and canal companies that are eager to create a viable solution to the irrigation and Storm water concerns of the valley. This coalition is developing standards for the determining dry pond sizing as well as storm water release flows into canals and waters. Because of the TMDL that have been set for the Cutler Reservoir this coalition is also preparing to monitor, along with Logan City, the quality of the Canals. They are currently in the process of establishing a legal document to serve as a template whereby the irrigation companies may allow the municipalities to use their canals for storm water runoff. This document will define a relationship that allows the Irrigation Companies to maintain and regulate the canal while receiving revenue from the municipalities to offset costs of maintaining and operating the canals. The relationship allows for flexibility in the management of and responsibilities that pertain to the canals. The agreement will address responsibility for cases of flooding and accidents. It will also address additional storm water to be added to the system and the party that will give approval. This document will be helpful to many communities in establishing a Storm Water Management Agreement with the Irrigation Companies.

Sewer System

The city is served by a sanitary sewer system that is treated in Logan City. The city has an ordinance requiring any new development within 300 feet of the existing sanitary sewer to connect. There are some existing septic tank systems in the city and some new developments with septic tanks, but the trend is toward connecting to the sanitary sewer system as the network is enlarged.

History

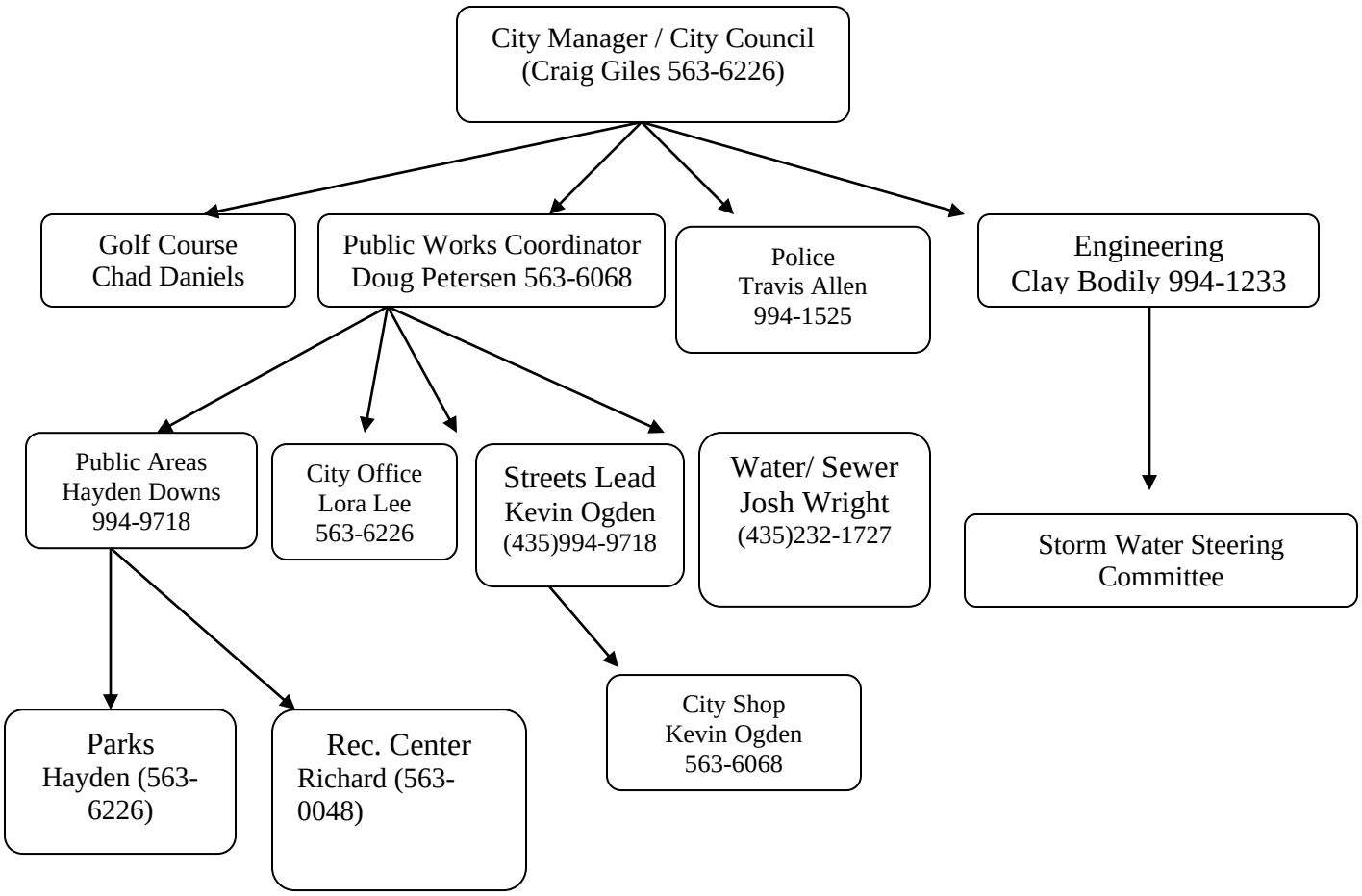
Smithfield, located in Cache County, is eight miles north of Logan. Smithfield was settled in October of 1859 by Seth Langton and by Robert and John Thornley. The first settlement was located approximately one-half mile west of the present site and was originally called Summit, because of its location on Summit Creek. The site was later renamed Smithfield after John Glover Smith in 1860.

The dairy industry is important to Smithfield, and in 1892 the Smithfield Dairy Company built its plant--which was later taken over by Sego Milk Products. In 1920 the Morgan Pea Factory began business and was later bought by Del Monte Foods; it has since been turned into a can-making factory. Some current businesses in Smithfield are Cantwell Brothers Lumber, Smithfield Livestock Auction, and Smithfield Implement.

Since the 1970's, Smithfield has grown rapidly in population. Today, the city is a thriving mix of residential, commercial, industrial and agricultural

Responsible Parties

The Entire Smithfield Community, and its Citizens are responsible for stopping pollutants from entering the storm water system. However the Municipal employees have the duty to inform, educate, and rectify pollution problems. The following is a flow chart of the Storm Water responsible parties, followed by a brief description of each persons duties pertaining to the storm water management plan.



City Manager Reports to City Council on storm water issues and storm water budget needs. This position in the storm water management plan is essential to make sure all storm water projects are approved, funded and coordinated between the different entities. The City Manager is able to consult with staff and the master plan documents to try and foresee and control structures that may be needed or resources that may help in storm water policy implementation. This position is the main step in ordinance origination, approval and ordinance enforcement. All Staff report to the person in this position and coordination is directed from here.

Public Works Coordinator This is the position that directs both labor and equipment resources to projects such as; storm water system improvements or existing BMP maintenance. This person arranges for training of public works employees on safety procedures and SOP's. It is also the contact person for privately owned BMP's to receive maintenance training and SOP's. Complaints from the general population are rectified with plans implemented from the coordinator.

Engineering Provide maps and other pertinent data to assist in the maintenance of storm water structures, and other BMPs. This office is to attend training on new or recently updated storm water mandates and inform the Manager and Public works coordinator on any changes. Is responsible to see that all permits, management plans and staff certifications are current and pertinent.

Storm Water Inspector This position is to be an inspector of all construction in the city. Sites that are larger than one acre are required to have a NOI with the state, the inspector for the city checks to see that they have a workable SWPPP and have the NOI. For lots smaller than an acre the inspector reviews their construction activity permit SWPPP and suggests changes. This person is not only an inspector for the city but is also expected to be a RSI with State training and certification.

Police Provide enforcement of city ordinances and prevent storm water violations.

Steering Committee A steering committee was formed in the spring of 2002 for the purpose of addressing the any water quality issues and consider options to develop a storm water management structures and policies. The steering committee includes members from the community and staff including:

Name	Representing
Clay Bodily	City Engineer
Ryan Gleason	Stormwater Inspector
Sherman Lewis	Resident/Retired SCS

Minimum Control Measures

- Best Management Practices (BMPs) for each of the *six* minimum control measures;

    1. Public Education and Outreach

2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Pollution Prevention/Good Housekeeping

- The columns of the MCM table are defined in the following bullets.

- MCM , This column indicates which of the six minimum control measures the BMP applies to.
- Target, The target pollutants and the target audience. Each of our BMPs is meant to reduce or control a specific pollutant and a specific group or individual currently attached to the pollutant.
- Desired result, The outcome from addressing a specific pollutant and the associated group. Whether it is to reduce the pollutant or make the target group aware of said pollutant.
- Measurable Goal, What criteria is used to measure if the BMP is working or needs to be changed.
- Milestone, When should a particular BMP be in effect or evaluated to see if it meeting its intended purpose.
- Associated BMP's What other control measures would this BMP satisfy.
- Effectiveness, Or measure of success. Should the BMP be changed, suspended or removed?

PUBLIC EDUCATION AND OUTREACH

(MCM 1)

Educational Materials

All cities in Cache County contract with Service Area #1 to provide garbage collection, waste services, and a recycling program. The Cache County Council serves as board for Service Area #1, which in turn contracts with Logan City Environmental Division to provide the services. There are educational materials covering subjects of recycling, waste reduction, and proper disposal that are available at the local landfill. (See Appendix D)

Recycling Facilitator

In contracting with Service Area #1 to provide waste services, a recycling program is included. There is a Recycling Facilitator who currently works with the local schools to teach about recycling and natural resources.

City used Media

Smithfield City was a website that is located at:
http://www.smithfieldcity.org

Information on how to reduce pollutants in storm water is to be included in the city newsletter twice a year. The newsletter is sent with utility bills monthly it informs the public of current issues and upcoming events.

BMP's	**Abbreviation**
1- Public Education and Outreach	
Building and Grounds Maintenance	BGM
Classroom Education on Storm Water	CESW
Educational Materials	EM
Housekeeping Practice	HP
Materials Use	MU
Public Education / Participation	PEP
Storm Drain System Signs	SDSS
Used Oil Recycling	UOR
Using Media	UM
Watershed Organization	WO

	Target		Desired Result	Measurable Goal	Milestone Date	Associated BMPs	Measure of Success (Effectiveness)
MCM	Pollutant(s)	Audience(s)					
1	Suspended solids,Phosphorous,nitrogen	Residents and Businesses	4.2.1.1 To educate audiences about impacts from storm water discharge	Newsletter		PEP and UM	
1	All pollutants	Residents (4th graders)	4.2.1.1 To educate audiences on ways to avoid, minimize, and reduce impacts of storm water discharge	Continue storm water fair annually	Annually	PEP and CESW	Fair occurs annually
1	All pollutants	Residents and Businesses	4.2.1.1 To educate audiences on actions individuals can take to improve water quality			PEP and UM	

1	See list in "desired result" column	General Public	4.2.1.2 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including: maintenance of septic systems; effects of outdoor activities, such as lawn care; benefits of on-site infiltration of storm water; effects of automotive work and car washing on water quality; proper disposal of swimming pool water; and propert management of pet wastes.	Include information on the website and include information in the city newsletter semi-annually.	Ongoing for the website and in Spring and fall Newsletter	PEP and UM	Information is current on website and included in city newsletter semi-annually.
1	See list in "desired result" column	Business and Institutions	4.2.1.3 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:Proper lawn maintenanceBenefits of appropriate on-site infiltration of storm waterBuilding and equipment maintenanceUse of salt or other deicing materialsProper storage of materials Proper management of waste materials and dumpsters Proper management of parking lot surfaces.	Include information on the website.	Ongoing	PEP and UM	Information links are current on website.
1	Illicit discharge and waste	Contractors, Developers, and plan review staff	4.2.1.4 Reduce adverse impacts from development sites	Have developers and contractors fill out a "construction activity permit" to inform them about pollutants.	Current	EM	Information packets are signed for every new development.
1	Illicit discharge and waste	Employees	4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including: Equipment inspection to ensure timely maintenance Benefits of appropriate on-site infiltration of storm water Minimization of use of salt or other deicing materials Proper storage of industrial materials Proper management of waste materials and dumpsters Proper management of parking lot surfaces.	Training as available.	Ongoing	ET	Training is completed as available and recorded in the training log.
1	All pollutants	Permittee engineers, development and plan review staff, land use planners	4.2.1.6 Training on LID, Green Infrastructure, and post construction BMPs	Attend and participate in Logan city's Contractor education meeting. And have contractors fill out the Construction activity permit.	Activity permit is currently active and Contractors training occurs annually.	ET	Annual meeting occurs
1	All pollutants	All Audiences	4.2.1.7 Evaluate the effectiveness of the public education program by a defined method.	Research evaluation methods and select the best one (2010). Implement the selected evaluation method (2011)	Research effectiveness by Oct 2011, Implementation evaluation method when decided on or by Jan	PEP	Evaluation method chosen (2011) and implemented (2012)

					2012.		
1	All pollutants	All Audiences	4.2.1.8 Explain why certain BMPs were chosen for public education program.	Have steering Committee and evaluate public comments and adjust BMP's accordingly.	December 1, 2010		Documented rationale included in the SWMP.

PUBLIC PARTICIPATION / INVOLVEMENT

(MCM 2)

Steering Committee

A "Storm Water Steering Committee" consisting of citizens and staff members has taken an active role in selecting the BMPs and developing the initial SWMP for the city.

Recycling Program

All cities in Cache County contract with Service Area #1 for waste management services, which include a recycling program. Logan City Environmental Division is contracted by Service Area #1 to provide services to the cities.

The program reduces solid waste by recycling and offers proper disposal options for hazardous wastes that can be difficult to dispose of, thereby preventing storm water contamination due to improper disposal of hazardous wastes and solids. The landfill accepts: cardboard, newspaper, aluminum cans, tin/steel cans, plastic pop bottles, plastic milk jugs, green waste, aluminum scrap, ferrous metals, tires, used oil, oil filters, antifreeze, carpet pad, batteries, wood pallets, mixed paper on site for recycling.

Drop-sites have been set up through out the county to facilitate recycling. The drop sites accept cardboard, newspaper, mixed paper, aluminum cans, tin/steel cans, plastic pop bottles, plastic milk jugs, glass, and green waste.
The current drop-site for the city is located East of the Armory.

Green Waste Collection

A curbside green waste collection program exists from Smithfield to Providence. It is administered by the Logan environmental Division acting under contract for Service Area #1 who contracts with the individual cities of Cache County to provide waste services. The program currently has about 600 members who participate in a curbside pick up program for green waste recycling for a monthly fee. The Logan Landfill has a green waste facility where green waste can be dropped off and it is either composted or made into wood chips or firewood. The green waste facility encourages donations by offering $10 of compost or wood chip material for ten loads of compost materials dropped off. This

program encourages reuse of an otherwise useless material that could become a solid contaminant in storm water. The two large community Green Bins are located on 800west and 56 North.

Other Community Groups

There are two other community groups that are actively engaged in protecting the local environment. They are “Friends of Smithfield Canyon” and “Birch Creek Golf Course Volunteer Cleanup Committee”.

Birch Creek Golf Course Cleanup

Every spring, a community volunteer group of golfers pick up trash around the golf course.

BMP's	**Abbreviation**
2- Public Participation/Involvement	
Community Cleanup	CC
Community Hotline	CH
Watershed Organization	WO
Service Group Participation	SGM
Storm Channel / Creek Maintenance	SCCM
Stream Cleanup and Monitoring	SCM

MCM	Target		Desired Result	Measurable Goal	Milestone Date	Associated BMPs	Measure of Success (Effectiveness)
	Pollutant(s)	Audience(s)					
2	All pollutants	General public	4.2.2.1 Have a program or policy in place that allows for the public to provide input	Nofify the public through the Newsletter that SWMP in on the website and inform them on how to give input.	By December 2010	PEP	The program or policy is in place
2	All pollutants	General public	4.2.2.2 Have SWMP document available for public review before it's submitted to the state	Have a hard copy of the draft of the permit available at the city office.	By Dec. 1, 2010	PEP	SWMP document is available for public review.
2	All pollutants	General public	4.2.2.3 Have SWMP document available to the public at all times	Post the SWMP on the website	By December 1, 2010	PEP	SWMP is updated and posted on the website
2	All pollutants	General public	4.2.2.3 Make updated SWMP document available to the public annually	Post updated SWMP annually	Ongoing	PEP	SWMP is updated and posted on the website annually
2	All pollutants	General public	4.2.2.4 Comply with State and Local public notice requirements	Research and document what the State and Local public notice requirements are. Set goals to comply with them.	By December 1, 2010	PEP	Understand what the state and local public notice requirements are.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

(MCM 3)

Summary of Existing Efforts

Illicit Discharge
Smithfield City currently has an ordinance designed to specifically prohibit illicit discharges to the storm sewer system. The ordinance number is 13.24.

Hazardous Spills
Currently, reports of spills are handled by the Fire Department, Logan Service Center or County Health Department.

The City has not generally experienced problems with individuals or businesses illicitly connecting their sanitary waste water piping to storm drains. More-common types of illicit discharges include spills from highway accidents, concrete truck wash out water, and general household waste.

Storm Water System Map
A map of the current collection System and a separate map of city outfalls into canals and Sumitt Creek have been printed out and are also available fro the Engineering depatment.
See Appendix E.

BMP's	**Abbreviation**
3- Illicit Discharge Detection and Elimination	
Identify Illicit Connections	IIC
Aboveground Tank Leak & Spill Control	ATL
Illegal Dumping Controls	IDC
Illegal Solid Dumping Control	ISDC
Leaking Sanitary Sewer Control	LSSC
Map Storm Water Drains	MSWD
Non-Storm Water Discharge to Drains	NSWD
Ordinance Development	OD
Used Oil Recycling	UOR

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MCM	Target		Desired Result	Measurable Goal		Associated BMPs	Measure of Success (Effectiveness)
Pollutant(s)	Audience(s)				Milestone Date		
3	All Pollutants	Contractors, Developers, City Council	4.2.3 Enforcement ability for storm water rules	Review and update the ordinance to conform with new permit	Draft by Aug 2011 & Final Feb 2012	OD	If ordinance is in place and meets the permit requirements
3	N/A	Public Works	4.2.3.1 Maintain Storm Water Map	Establish policy to maintain a Current SD System Map on all new developments within 6 months	Completed by July 1, 2011	MSWD	If policy is in place and meets the permit requirements
3	"	"	"	Implementing policy and have all map updates done within 12 months of final approval.	Completed by July 1, 2012	MSWD	Successful if 90% are input within 12 months

3	"	"	"	Maintain policy and have all map updates done annually.	Annually after July 1, 2013	MSWD	Successful if 90% are input.
3	All Pollutants	All Audiences	4.2.3.2 Develop, implement, and prepare in writing a plan to detect and address non-SW discharges	Do Dry weather screening 20% of all outfalls each year	1 July of each year	NSWD	Successful if all screens are done
3	"	"	"	Have SOP in place and training to Staff	Complete by July 1, 2011	NSWD	Successful if completed by that date and staff is following SOP
3	All Pollutants	All Audiences	4.2.3.5 Develop and implement standard operating procedures for characterizing the nature of any illicit discharges found or reported to the Permittee by the hotline developed in 4.2.3.9	Create the Incidence Response Flow Chart and train personnel	Completed by July 1, 2011	IIC, CH	Successful if completed by that date and staff is following Flow Chart
3	"	"	"	Review flow chart and SOP with staff and provide training annually.	Ongoing	IIC, CH	Successful if training is completed annually for all staff involved in incident reporting.
3	All Pollutants	All Audiences	4.2.3.6 Develop and implement standard operating procedures for ceasing the illicit discharge	Create the Incidence Response Flow Chart and train personnel	Completed by July 1, 2011	IDC, ISDC	
1	All Pollutants	Public Employees, Businesses and Residents	4.2.3.7 Inform public employees, businesses, and general public of hazards associated with illicit discharges and improper disposal of waste	See MCM 1		PEP, ET	See MCM 1
3	Household Hazardous Waste	Residents	4.2.3.8 Promote or provide services for the collection of household hazardous waste	Put the HHW Address and Phone number on City Web Site	Completed by July 1, 2011	UOR, HWM	Successful if complete by that date
3	Household Hazardous Waste	Residents	4.2.3.9 Publicly list and publicize a hotline or other telephone number for public reporting of spills and other illicit discharges	Put the HHW Address and Phone number on City Web Site	Completed by July 1, 2011	CH	Successful if complete by that date
3	All Pollutants	All Audiences	4.2.3.10 Adopt and implement procedures for program evaluation and assessment. Include a database for mapping, tracking of the spills or illicit discharges identified and inspections conducted	Create a spreadsheet for tracking Illicit Discharges	Completed by July 1, 2011	IIC, MSWD	Successful if complete by that date
3	"	"	"	Incorporate the spreadsheet into a GIS Database	Completed by July 1, 2013	MSWD	Successful if complete by that date
3	"	"	"	Train Storm Water Personnel on GIS Mapping uses	Completed by July 1, 2015	ET	Successful if complete by that date

CONSTRUCTION SITE RUNOFF CONTROL

(MCM4)

Summary of Existing Efforts

Ordinances

The current ordinance 13.24 defines and restricts storm water activities in Smithfield City.

Site Plan Review

There is currently a construction Activity permit required for all construction requiring a permit or approval. The inspector reviews the SWPPP included in this application before the permit is issued or construction begins.

Site Inspector

There is currently one public works inspector who oversees local construction. He is concerned with sewer connections, storm drain and streets. The inspector makes decisions and recommendations using good judgment of what proper construction techniques are. The inspector may also require contractors to clean up streets and supplemental BMPs to reduce any contamination sources.

Standard Drawings and Specifications

The city is reviewing and refining their set of standard drawings and specifications.

MCM	Target		Desired Result	Measurable Goal	Milestone	Assoc.	Measure of Success (Effectiveness)
	Pollutant(s)	Audience(s)			Date	BMP	
4	Sediment, Construction Site Debris, Hydrocarbons	Contractors and Developers	4.2.4.1 Raise awareness of contractors and developers on what is expected on construction sites	Require a SWPPP for every construction site over one acre, or if part of a common plan of development.	Feb. 2012	OD	Successful if 95% of all active construction sites have a working SWPPP
4	Sediment, Construction Site Debris, Hydrocarbons	Contractors and Developers	4.2.4.2 Develop a written enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism	Draft ordinance to include escalating enforcement provisions	July, 2011	OD	Successful if completed by milestone
4	Sediment, Construction Site Debris, Hydrocarbons	Contractors and Developers, City Council, Plan Reviewers	Have an ordinance that is meaningful and enforceable	Revise ordinance to require a SWPPP or Construction Activity Permiton every site.	Current	OD	If ordinance is in place and meets the permit requirements
4	"	"	"	Revise ordinance to better define escalating enforcement provisions	Feb. 2012	OD	Successful if completed by milestone
4	"	"	4.2.4.2 Documentation and tracking of all enforcement actions	Develop and begin using a construction site enforcement action log/database	Feb. 2012	OD	Successful if we have a log and are using it

4	Sediment, Construction Site Debris, Hydrocarbons	Contractors and Developers	4.2.4.3 Develop and implement SOP's for pre-construction SWPPP review for construction sites	Develop checklist and begin to do preconstruction reviews of SWPPP	Current	ECP	Successful if we are conducting SWPPP reviews
4	"	"	4.2.4.3.1 Conduct a pre-construction meeting	Hold Pre-con meetings on all sites greater than 1 acre or as part of common plan of development	Immediately		Successful if we are conducting Pre-con meetings
4	"	"	4.2.4.3.2 Incorporate into the SWPPP review procedures the consideration of potential water quality impacts and procedures for pre-construction review which shall include the use of a checklist.	Develop a policy to consider potential water quality impacts on all projects - private or municipal	Feb. 2012	ZO	Create SWPPP Checklist including water quality impacts.
4	"	"	4.2.4.3.3 Incorporate into the SWPPP review procedures for an evaluation of opportunities for use of Low Impact Development (LID) and green infrastructure and when the opportunity exists, encourage such BMPs to be incorporated into the site design.	Develop a policy to consider Low Impact Development practices on all projects - private or municipal	Feb. 2012	ZO	Successful if we have post construction BMPs on 50% of projects
4	"	"	4.2.4.3.4 Identify priority construction sites, including at a minimum those construction sites discharging directly into or immediately upstream of waters that the State	Develop a "sensitive area" map showing areas within the city where "additional" protection may be desired	July, 2011	LIP	Successful when map is completed and ready for use
4	Sediment, Construction Site Debris, Hydrocarbons	Contractors and Developers	4.2.4.4.1 Inspections of all new construction sites ... at least monthly by qualified personnel	Conduct monthly inspections of all construction sites - Emphasize self inspections - sensitive areas to be inspected twice monthly	Feb. 2012	CCIT	Successful if 90% of all active construction sites are inspected monthly
4	"	Contractors, developers and MS4 staff	4.2.4.5 Provide training to city staff and 3rd party designers	Develop a city policy to require all SWPPP inspectors to be RSI inspectors within 12 months	Current	CCIT	Successful if completed by milestone
	"	"	4.2.4.4.3 Conduct Bi-weekly inspections on high priority construction sites	Inspect high priority sites bi-weekly	Feb. 2012	ECP	Successful if all high priority sites are inspected bi-weekly
	"	"	4.2.4.6 Maintain a log of active construction sites	Establish a log	Feb. 2012	ECP	Successful if active construction sites are recorded in the log

POST CONSTRUCTION RUNOFF CONTROL

(MCM 5)

Landscaping Plan Review

Developers are required to present a plan outlining landscaping plans to the city.

MCM	Target		Permit Reference/Desired Result	Measurable Goal	Milestone	Assoc.	Measure of Success (Effectiveness)
	Pollutant(s)	Audience(s)			Date	BMP	
5	All Pollutants	All Audiences	4.2.5.1. Develop and adopt an ordinance or other regulatory mechanism that requires long-term post-construction storm water controls at new development and redevelopment sites. (4.2.5.3.1 for flood control structure issues and 4.2.5.3.2 for LID)	Review existing ordinance to determine if it meets requirements of new permit - Use checklist from coaching sessions	March, 2011	OD	If review is complete
5	"	"	"	Draft ordinance revisions	July, 2011	OD	If draft is complete and ready for others to review
5	"	"	"	Adopt updated ordinance	Feb. 2012	OD	If ordinance has been passed
5	"	MS4 Staff, City Council	4.2.5.3.3 The Permittee must develop a plan to retrofit existing developed sites that are adversely impacting water quality.	Update Storm Drain Master Plan and Capital Improvement Plan to include Water Quality components	Dec. 2014	IPL	If CIP includes water quality projects
5	"	MS4 Staff, Contractors and Developers	4.2.5.3.4 Each Permittee shall develop and define specific hydrologic method or methods for calculating runoff volumes and flow rates…	Review existing design standards to see if they meet new permit requirements - see section 4.2.5.3.4	June, 2011	IPL	If standards have been reviewed and comments made
5	"	"	"	Update design standards	Dec. 2011	IPL	If updated standards have been adopted
5	"	"	4.2.5.4.1 Review Storm Water Pollution Prevention Plans (SWPPPs)	See goals for MCM 4			
5	"	"	4.2.5.4.2 Permittees shall provide developers and contractors with preferred design specifications to more effectively treat storm water for different development types...projects located in, adjacent to, or discharging to environmentally sensitive areas.	Review map of sensitive areas and identify preferred method(s) of treating storm water to discharge to those areas	July, 2011	IPL	List of preferred method(s)
5	"	"	"	Update design standards to contain information on treating storm water for various project types that discharge to senstive lands.	Dec. 2012	IPL	Design standard updated and information implmented in design of development near sensitive areas
5	"	"	4.2.5.4.3 Permittees shall keep a representative copy of information that is provided to design professionals;...the dates of the mailings and lists of recipients.	Keep a revision log for information in Appendix A - Supplemental Guide to Contractors and Developers	July, 2011	EM	If revision log is filled out for all revisions
5	"	"	"	Log name and date of distribution of Supplemental Guide to Contractors and Developers	July, 2011	EM	If log is up to date and current

5	"	"	4.2.5.5. All Permittees shall adopt and implement SOPs or similar type of documents for site inspection and enforcement of post-construction storm water control measures.	Review and customize SOPs for inspection and enforcement of post-construction control measures	July, 2011	LIP	If inspection and enforcment SOPs are current and being utilized
5	"	"	4.2.5.5.1 ... require private property owner/operators or qualified third parties to conduct maintenance and provide annual certification that adequate maintenance has been performed and the structural controls are operating as designed to protect water quality. In this case, the Permittee must require a maintenance agreement addressing maintenance requirements for any control measures installed on site.	Draft a maintenance agreement template	July, 2011	BMPIM	If draft is completed by the milestone date
5	"	"	"	Adopt a maintenance agreement template	Dec, 2011	BMPIM	If template is adopted and being used by milestone date
5	"	"	4.2.5.5.3 Inspections and any necessary maintenance must be conducted annually by either the Permittee or through a maintenance agreement, the property owner/operator. On sites where the property owner/operator is conducting maintenance, the Permittee shall inspect those storm water control measures at least once every five years, ...	Inventory post-construction BMPs - see 4.2.5.7.1 for inventory inclusion items	March, 2011	BMPIM	If inventory is complete
5	"	"	"	Identify who is responsible to inspect and/or maintain each post-construction BMP	July, 2011	BMPIM	If list identifies person responsible for inspections/ maintenance
5	"	"	"	Develop inspection report form for post-construction BMPs	July, 2011	BMPIM	If form is completed
5	"	"	"	Conduct inspections annually for city owned BMP's	Ongoing	BMPIM	If completed inspection reports are properly filed
5	"	"	"	Conduct inspections on privately owned BMP's at least 20% per year	Ongoing	BMPIM	If completed inspection reports are properly filed
5	"	MS4 staff	4.2.5.6. Permittees shall provide adequate training for all staff involved in post-construction storm water management, planning and review, and inspections and enforcement.	Schedule and conduct training for appropriate personnel	Annually	BMPIM	If all appropriate personnel are trained
5	"	"	4.2.5.7 Maintian an inventory of post construction BMP's	Inventory log updated annually	Ongoing	BMPIM	If log is updated

POLLUTION PREVENTION / GOOD HOUSEKEEPING

(MCM 6)

Recycling Program

The City participates in a recycling program.

Educational Materials

The City has educational materials.

Green Waste Collection
The City has a Green Waste Collection program

Operations

Salt is stored under cover to prevent contamination of storm water and other areas.

MCM	Target		Desired Result	Measurable Goal	Milestone	Assoc.	Measure of Success (Effectiveness)
	Pollutant(s)	Audience(s)			Date	BMP	
6	All pollutants	MS4 staff	4.2.6 ...All components of an O & M 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…	Complete Org chart	Jan. 2011	HP	If org chart is complete and up to date by milestone date
6	"	"	4.2.6.1. Permitees shall develop and keep current a written inventory of Permittee-owned or operated facilities	Complete listing of MS4 owned/operated facilities	Dec. 2010	HP	If list is completed by milestone date
6	"	"	4.2.6.2. All Permittees must initially assess the written inventory of Permittee-owned or operated facilities, operations and storm water controls identified in Part 4.2.6.1. for their potential to discharge to storm water the following typical urban pollutants:	Complete assessments and identify "high priority" facilities	Feb. 2011	HP	If assessments are completed and documenation recorded in SWMP
6	"	"	4.2.6.4. Each “high priority” facility identified in Part 4.2.6.3. must develop facility-specific standard operating procedures (SOPs) or similar type of documents.	Review, customize and update appropriate SOPs	July, 2011	HP	If SOPs are updated and current by milestone date
6	"	"	4.2.6.6.1 Weekly visual inspections: The Permittee must perform weekly visual inspections of “high priority” facilities in accordance with the developed SOPs to minimize the potential for pollutant discharge.	Develop bi-weekly inspection form and log	July, 2011	HP	Completed inspection form and log
6	"	"	"	Conduct bi-weekly inspections	Ongoing	HP	If at annual review all bi-weekly inspections are logged and reports completed
6	"	"	4.2.6.6.2 Quarterly comprehensive inspections: At least once per quarter, a comprehensive inspection of “high priority” facilities, including all storm water controls, must be performed	Develop quarterly inspection form(s) and log	July, 2011	HP	Completed inspection form and log
6	"	"	"	Conduct quarterly comprehensive inspections	Ongoing	HP	If at annual review all quarterly inspections are logged and reports completed

6	"	"	4.2.6.6.3 Quarterly visual observation of storm water discharges: At least once per quarter, the Permittee must visually observe the quality of the storm water discharges from the “high priority” facilities	Conduct quarterly visual observations of storm water discharges at high priority facilities	Ongoing	HP	If at annual review all quarterly visual monitoring is completed and logged and reports completed
6	"	MS4 Staff, Contractors and Developers	4.2.6.7. The Permittee must develop and implement a process to assess the water quality impacts in the design of all new flood management structural controls that are associated with the Permittee or that discharge to the MS4.	Draft a policy/process to assess water quality impacts on all new flood control projects	July, 2011	IPL	If draft is prepared and ready for internal review process by milestone date
6	"	"	"	Get policy approved	Dec. 2011	IPL	If policy is approved and adopted by milestone date
6	"	MS4 staff	4.2.6.7.1 Existing flood management structural controls must be assessed to determine whether changes or additions should be made to improve water quality.	See MCM 5 for goals (part of the retrofit program)			
6	"	"	4.2.6.9. Permittees shall provide training for all employees who have primary construction, operation, or maintenance job functions that are likely to impact storm water quality.	See individual training goals within other MCMs			
6	"	"	"	Develop a training schedule	July, 2011	EM, HP	If schedule is complete by milestone date
6	"	"	"	Conduct ongoing training according to schedule	Ongoing	EM, HP	If training is completed and documented according to schedule at annual evaluation

APPENDIX A

Developers And Contractors

- Design Methods and Considerations
- SWPPP Review Criteria / applicability checklist
- Non-City owned BMP's
  - Maintenance Agreement Draft
  - Inspection Authority Easement
- Copy of inspection Forms
  - Inspection Frequency
  - State inspection Forms (Required for areas greater than1acre)
  - Smithfield City (Construction Activity Permit)

Design Standards and Specifications

Table of Contents

These standards cover the criteria and methodology to be utilized by the designers in the design, planning, evaluation, and reports associated with the design of storm water and related irrigation facilities. Any deviations from these criteria must be approved by the City Engineer in writing prior to initiating and again before finalizing the design. Where any deviations may also affect a canal company, a written approval of the canal company will also be required.

All designs completed must utilize and comply with the most current edition of the City Standards and Specifications.

Definitions

Certified Percolation Test: A saturated soil percolation test completed in accordance with Utah Administrative Rule, R317-4-5 with the exception that the test shall extend 2.0 feet below the bottom of the proposed invert of the pond. These tests shall be done in accordance with the certification requirements by a "qualified individual" as defined in R317-11.

Detention: The detaining or holding of water on site and releasing the water from the site into a pipeline, channel, or other water bodies at a slower rate than would otherwise occur.

DEQ: Utah Department of Environmental Quality

Detention Basin: A pond or basin, either above ground or below, that catches the storm water runoff from a contributing area and uses the detention process.

DWQ: Utah Division of Water Quality, a division of the DEQ.
EM 1110-2-1601: Engineering and Design – Hydraulic Design of Flood Control Channels, CECW-EH-D, US Army Corp of Engineers, June 1994
EPA: United States Environmental Protection Agency
HEC-11: Design of Rip-Rap Revetment, Hydraulic Engineering Circular No. 11, US Dept. of Transportation, Federal Highway Administration. (FHWA-IP-89-016, March 1989)
HEC-22: Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22, US Dept. of Transportation, Federal Highway Administration. (FHWA-SA-96-078, August 2001).
HISTORICAL RUNOFF FLOW: The runoff that has historically flowed off of a given piece of land in the specified storm frequency and duration prior to development. Table VIII-1 lists the SCS curve numbers used to calculate the historic runoff for areas above the Logan Hyde Park Smithfield Canal and for areas below the Logan Hyde Park Smithfield Canal. The historic (pre-development) condition used for the area above the Logan Hyde Park Smithfield Canal is non-cultivated pasture or range land in good condition. The historic (pre-development) condition for the areas below the Logan Hyde Park Smithfield Canal is cultivated agricultural land with straight row small grain crops in good condition.
NOI: A notice of intent to construct permit obtained from the DWQ which is required for all construction on areas greater than or equal to 1.0 acres.
NOT: A notice of termination to construction submitted to the DWQ upon the stabilization of 70 percent of the project site that required a NOI.
PWD: Public Works Department
Retention: The retaining or keeping of water on site and preventing its release from the site by any method other than infiltration or evaporation.
Retention Basin: A pond that is built to capture and retain the design storm on site and dispose of it through infiltration.
Return Frequency: The frequency or likelihood of a storm of occurring. A 100-year storm has a one (1) percent chance of occurring in any given year while a 10-year storm has a ten (10) percent chance of occurring in any given year. This should never be interpreted as happening only once every 100 or 10 years for the two given examples.
Spread Width: The width of water flow as measured from the flow line of the gutter into the asphalt.
Stream Alteration Permit: A permit that is obtained through the Utah Division of Water Rights and is necessary anytime construction impacts a stream, wetland, riparian zone, or other water body defined as the waters of the U.S.
Storm Event: The event and hyetograph that define the design volume of precipitation, duration of the storm, intensity of the storm, and the pattern in which the precipitation falls.
SWPPP: A storm water pollution prevention plan which is required on any construction site.
Underground Injection/Retention System: A system designed to be fully underground and to dispose of water, entirely or in part, through infiltration. These require a special permit from the DWQ known as a Class 5 injection well permit.
Underground Injection Well: A facility, such as a pressured injection well, free draining injection well, sump, or other buried underground facility that infiltrates or injects surface water into the subsurface or groundwater system to eliminate surface runoff.
Wetlands Mitigation, or 404, Permit: A permit obtained through the US Army Corp of Engineers which allows the wetlands to be impacted and provides for required mitigation before the project can be approved.

Design Requirements

All projects, irrespective of the size or type, shall meet these requirements. Where projects are governed by a state or federal agency, their standards shall take precedence. All designs shall be in compliance with the City's constructions standards and specifications.
Subsequent sections within this chapter identify the required methodology based upon the size and type of the project.

Storm Event

Design all storm water facilities associated with permanent new and re-development for the 100-year event. Design construction BMP's for the 2 year storm. The storm duration is subject to the size of the contributing area and the project as discussed in Section C, Hydrologic Calculation.
Existing development shall be required to construct storm water facilities to detain and treat runoff anytime at the time of remodeling or reconstruction of any facilities under the same policy as the International Building Code. However, the return frequency and design duration may be modified under extreme conditions at the direction of the City Engineer with approval of the agency managing the receiving waters.
The storm water runoff leaving the site during the design storm is limited to the **lesser** of:

1. 0.1 cfs per acre, or
2. Discharge prior to development, current or pre-existing (Historical Runoff Flow).

Historical runoff flow values per acre of land within and around Logan, North Logan, Hyde Park and Smithfield are given on the attached map (Figure A). The map has been divided into runoff zones based on ground slope and soil-cover complexes. The curve numbers that are to be used are given Developments that cross runoff zone boundaries shall compute the total allowed run-off for the development by multiplying the acreage of the development that falls in each runoff zone, by the allowed runoff rate for that zone and adding those results together.

An electronic copy of the runoff zone map are available from PWD to assist in calculating the allowed runoff flow for developments.

Developers may choose to calculate the historic runoff flow from their development without the map but must use the following method and assumptions
Method of Calculation - SCS
Design Storm - 100-year 24-Hour Storm with SCS Type II Distribution
Curve Numbers - See Table VIII-1 below.

Table VIII-1, SCS Runoff Curve Numbers for Historic Flow Calculations Soil-Cover Complexes

	SCS Curve Numbers by Hydrologic Soil Group			
Land Area	A	B	C	D
Above (North and East of) the Logan Hyde park Smithfield Canal	39	61	74	80
Below (South and West of) the Logan Hyde Park Smithfield Canal	63	75	83	87

Must pay for check

Curb and Gutter Flow Design

3. The flow depth in the gutter shall not be allowed to exceed the lesser of the top back of curb elevation (TBC) or the peak drive way approach elevation during the required storm event. This includes a combination of piping, curb and gutter, and ditches.

4. Where the flow depth is exceeded, storm drain inlets and a piped system shall be required and appropriate actions taken to eliminate overtopping of the curbs and flooding private property.

Channel Design

5. Channel side slopes shall not be steeper than 3:1 (H:V) unless they are concrete. Where they are incorporated into landscaping, flatter slopes shall be required. This will be evaluated on a case by case basis.
6. Channel velocities shall be slow enough to prevent scour, and where possible, facilitate further settlement of sediments unless the channel is used to deliver irrigation water as well. If the channel will also carry irrigation water, maintain velocities above 2 ft/sec if possible, but at no time exceed 4 ft/sec.
7. Where rip-rap is used, design shall be in accordance with EM-1110 from the US Army Corp of Engineers or HEC-11 from the Federal Highway Administration.
8. Free board on the channels shall be in compliance with the Bureau of Reclamation, Design of Small Canal Structures.
9. Channel maintenance easements shall be maintained as required in the City and Canal Company agreements.

Pipe Design

10. For storm water pipes, roughness coefficients listed in the table included in Section D of these standards that coincide with the accepted pipe materials in the City's Standard Specifications, most current edition shall be used.
11. Maintain velocities in the pipes at design flows sufficient to prevent sediment deposition and low enough to prevent scour damage to the pipe.
12. Pipe outlets shall have a flared end discharge unless more stringent methods of energy dissipation are required.
13. Minimum diameter of storm drains shall be:
    a. 12 inches for laterals
    b. 15 inches for trunk lines
    c. 18 inches under the UDOT right of way.
14. Pipe sizes shall not decrease in the downstream direction.
15. Maximum flow depth in the pipe during the design storm shall not exceed 0.85 times the diameter of the pipe.

Detention Basins

16. Detention basins, or other equivalent methods to limit the storm water release rate and improve the water quality when approved by the City Engineer, are required prior to discharge into any canal.
17. All detention basins shall be sized to meet the requirements of Section C of this chapter.
18. Side slopes shall not be steeper than 3:1 (H:V).
19. The maximum depth at the emergency overflow location of the pond shall be three feet plus one (1) foot of freeboard above the emergency overflow and a maximum water depth of three (feet) below

the emergency overflow. All other ponds require special design, approval, and permitting including safety precautions on a case by case situation.

20. All ponds shall be stabilized with rocks or planted vegetation to prevent internal erosion. Vegetation or other stabilization must be maintained.
21. All ponds must have a water treatment method to prevent heavy sediment, floatable debris, or petroleum products from leaving the pond.
22. Where orifice and snouts are used, the orifice size is limited to not less than three (3) inches in diameter to prevent clogging.
23. Emergency overflows and the flow path of the overflows shall be mapped to natural streams, canals, or city approved drainage system for purpose of flood mapping using existing topographic mapping.
24. The emergency overflow shall be designed to pass the full 100 year event.
25. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through the detention pond or within 5 feet of the pond berms.
26. The invert or lowest point in the pond shall be not less than 12-inches above the existing or historical groundwater levels (whichever is higher).
27. The bottom of the pond shall be finished to maintain historical infiltration.

At Grade Retention Basins

28. All retention basins shall be sized to meet the requirements of Section C of this chapter and to contain 100 percent of project site runoff from the design storm.
29. Side slopes shall not be steeper than 3:1 (H:V).
30. The maximum depth of the pond shall be three feet plus one (1) foot of freeboard above the emergency overflow and a maximum water depth of three (feet) below the emergency overflow. All other ponds require special design, approval, and permitting including safety precautions on a case by case situation.
31. All ponds shall be stabilized with rocks or planted vegetation to prevent internal erosion. Vegetation or other stabilization must be maintained.
32. All ponds shall drain within 3 days (72 hours) from the end of the storm event. This is to be documented with a certified percolation test and documented in the soils report.
33. Emergency overflows and the flow path of the overflows shall be mapped for purpose of flooding.
34. The emergency overflow shall be designed to pass the full 100 year event.
35. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through the retention pond or within 5 feet of the pond berms.
36. The invert or lowest point in the pond shall be not less than 12-inches above the existing or historical groundwater levels (whichever is higher).
37. The bottom of the pond shall be finished to maintain historical infiltration.

Underground Detention, Retention, and Injection Systems

38. Underground retention and injections systems, including sumps, are not allowed in drinking water source protection zones.

39. All detention and retention basins are to be sized to meet all the requirements of Section B, Design Requirements of this chapter.
40. Underground systems shall provide adequate access points for cleaning and maintenance.
41. All systems shall drain by discharge (detention basins) or infiltration (retention basins) within 3 days (72 hours) from the end of the storm event. This is to be documented with a certified percolation test and documented in the soils report.
42. Sumps shall provide adequate water quality treatment to prevent contamination of the ground water aquifer.
43. Emergency overflows and the flow path of the overflows shall be mapped for purpose of flooding and flood insurance requirements.
44. The emergency overflow shall be designed to pass the full 100 year event.
45. Other utilities (for example water lines, sewer lines, gas lines, power lines, phone lines, etc.) shall not be allowed through or under the underground retention system.
46. Registration with the DWQ and a Class 5 Injection Well Permit are required for all underground systems.

Water Quality/Treatment Requirements

46. Water discharging from the project site shall not exceed 70 mg/L of total suspended sediments or increase the turbidity of the receiving waters by 10 NTU.
47. The treatment system shall remove oils, greases, and any other floatable petroleum products.
48. The treatment system and best management practices shall reduce the total phosphorus in the discharge to below 0.10 mg/L.
49. Total dissolved solids of the receiving waters must not be increased above 350 mg/L and the discharge water must not exceed 1000 mg/L.
50. All contaminants shall be stored to prevent impact by storm water and to contain any spilled materials on site. The location and methods of this storage shall be shown on the design plans.
51. The implementation of standard construction and post construction BMP's have historically met or exceeded the water quality criteria listed above. In rare cases where these are insufficient, PWD reserves the right to monitor and require owners to implement a mitigation plan or pay appropriate fines.

Irrigation Canals and Systems

All irrigation canals, pipes, ditches, channels, structures, diversions, and other portions of the system shall be designed for the full range of base flows including historical maximum flows, historical minimum flows, and the full water right flow. Then the channel shall have the upstream storm drain inflows and irrigation return flows added to the model to ensure that all future systems have sufficient capacity. These design flows must to be approved by the associated canal company in writing and the City Engineer.

Storm Water Pollution Prevention Plan

Storm water pollution prevention plans (SWPPP) are required on all projects in City boundaries and every project must comply with City standards and specifications, whether approved by the PWD or not. Table VIII-2 summarizes the requirements of the SWPPP.

Table VIII-2, SWPPP Requirements

Contributing Area Size	Minimum Requirements
Less than 1.0 Acre	Erosion and sediment control plan, dust control plan, debris and garbage control plan, post construction BMPs, Inspection and maintenance plan, record keeping and training, and final stabilization. These can be on a standard design sheet as detailed notes with supporting details. And a state "Common Plan NOI"
1.0 Acre and larger.	A full SWPPP using the EPA template downloadable from the DWQ at the following web site: https://documents.deq.utah.gov/water-quality/permits/updates/DWQ-2018-001322.pdf (click on SWPPP Template (Word Doc) The SWPPP shall include but not be limited to the following criteria: Maps and figures in the document must address construction sequence, total area of site and area to be disturbed, pre and post runoff analysis, identification of receiving waters, map of drainage patterns with outfall locations and downstream flow paths, locations of structural controls, and locations of equipment and material and chemical storage, and methods of containment. Additionally, the document must include a map identifying where each BMP is to be used and provide details for the implementation of the BMPs.

hydrologic calculation

Design Methodology

Numerous methodologies and hydrologic methods are available. While, in some cases, these other methods might provide a more favorable estimate, they are not acceptable to PWD unless approved by the City Engineer. Table VIII-3 summarizes the required methods based on the area contributing flows to the system, including offsite flows.

Table VIII-3, Hydrologic Methods Required

Contributing Area (Acres)	Methodology Required
Less than 1.0 Acre	Rational Method, Time of concentration = 10 minutes
1.0 Acre to 10.0 Acres	Rational Method, Time of concentration calculated.

Greater than 10.0 Acres	Subject to additional requirements of individual Cities. Each City has different hydrologic and hydraulic conditions. Verify with the City Engineer the methods and requirements prior to initiating projects.

Design Hyetographs

The design hyetographs to be used for each storm vary based on the size of the area being modeled and designed. Table VIII-4 summarizes the hyetograph which shall be used during the design.

Table VIII-4, Required Design Hyetograph

Contributing Area (Acres)	Methodology Required
Less than 1.0 Acre	Rational Method or Farmer Fletcher
1.0 Acre to 10.0 Acres	Rational Method or Farmer Fletcher
Greater than 10.0 Acres	SCS Type II Storm or other acceptable Hyetograph with special approval.

Design Frequency

All storm water calculations shall be based on the 100-year event within the City for subdivisions and contributing areas less than 640 acres (1 square mile). For areas larger than 640 acres, design shall address the 100-year, 50-year, 25-year, **and** 10-year events. Storm water BMP's for use during construction shall be designed based on the 2-year 24 hour storm.

Design Duration

Design duration shall be based on the criteria summarized in Table VIII-5.

Table VIII-5, Required Design Durations for Storm Water Systems

Larger of Contributing Area or Project Area (Acres	Pipes, Channels, Inlet Spacing	Detention Ponds and Facilities	Retention Ponds and Facilities
Less than 1.0 Acre	10 Minutes	24-hours	48-hours
1.0 Acre to 10.0 Acres	Calculated Time of Concentration	24-hours	48-hours
Greater than 10.0 Acres	Calculated Time of Concentration	24-hours	48-hours

The amount of rainfall and the intensity-duration tables for different rainfall events are included in Table VIII-6 and Table VIII-7 for use within the City. Data compatibility with PWD models is mandatory. This data is taken from the National Weather Service, Logan Radio KVNU site.

Table VIII-6, Depth-Duration Summary Table, (KVNU) Logan Station (inches)

ARI (Years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr
2	0.14	0.21	0.26	0.34	0.43	0.55	0.64	0.87	1.15	1.46	1.68
10	0.23	0.35	0.44	0.59	0.73	0.88	0.98	1.28	1.64	2.04	2.33
25	0.31	0.47	0.58	0.78	0.96	1.13	1.23	1.56	1.98	2.41	2.75
50	0.37	0.57	0.70	0.94	1.17	1.36	1.45	1.79	2.24	2.71	3.08
100	0.45	0.68	0.85	1.14	1.41	1.61	1.71	2.05	2.52	3.02	3.42

Table VIII-7, Intensity-Duration-Frequency, (KVNU), Logan Station (inches/hour)

ARI (Years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr
2	1.62	1.24	1.02	0.69	0.43	0.27	0.21	0.14	0.10	0.06	0.04
10	2.80	2.13	1.76	1.18	0.73	0.44	0.33	0.21	0.14	0.09	0.05
25	3.68	2.80	2.31	1.56	0.96	0.56	0.41	0.26	0.16	0.10	0.06
50	4.46	3.40	2.81	1.89	1.17	0.68	0.48	0.30	0.19	0.11	0.06
100	5.40	4.10	3.39	2.29	1.41	0.81	0.57	0.34	0.21	0.13	0.07

Runoff Coefficients

PWD has established standard runoff coefficients that shall be used to ensure compatibility of results from the base model and each individual project. Calculations differing from these values shall be returned to the design professional for corrections.

Rational Method

Table VIII-8 identifies the rational equation runoff coefficients that shall be used.

Table VIII-8, Required Runoff Coefficient

Condition	Rational Method
Asphalt	0.95
Concrete Pavement	0.95
Grassed Open Space (slopes less than 2 percent)	0.15
Grassed Open Space (slopes greater than 2 percent)	0.20
Graveled Areas	0.85
[1)]Residential Lots <8000 sq-ft	0.70
[1)]Residential Lots, 8000 sq-ft to ¼ acre	0.50
[1)]Residential Lots, ¼ acre to ½ acre	0.45
[1)]Commercial Business Areas	0.75
[1)]Industrial Areas	0.85

[1)] Where the weighted values are less than these coefficients, or insufficient data is available outside of the project area, use these values. In no case will values less than the provided coefficients be used.

SCS Method

The SCS method, as developed in TR-55 by the Soil Conservation Service in the 1950s, requires more engineering interpretation than the rational method since it is also necessary to address the soil conditions, vegetative cover, and the antecedent soil condition (AMC) being evaluated. There are four primary soil conditions available in the SCS method, grouped as A, B, C, and D.

Group A soils typically are gravels and sands with fast infiltration rates and low runoff potential. While there are Group A soils on some of the benches and along the Logan river in some places, as soon as any landscaping with topsoil occurs, the stormwater benefit of these soils is lost. As a result, the Group A classification shall not be used.

Group B soils have moderate infiltration rates when wetted and consist of moderately well drained soils with moderately fine to course textures, typically without clay.

Group C soils have slow infiltration rates if thoroughly wetted and consist of soils that have a layer that impedes vertical infiltration.

Group D soils have a slow infiltration rate if thoroughly wetted and consist of clays, usually with high swelling potential, soils with a permanent high water table, soils with a clay pan or hard pan later near the surface, and shallow soils over an impervious material.

Soil maps and references available from the Natural Resource Conservation Service will identify the group associated with each soil class. HOWEVER, the designer needs to consider the effects of the final landscaping, such as the use of top soil, as part of his design.
In addition to the soil group, the antecedent moisture condition (AMC) must also be considered. For the average case, the SCS has defined AMC II to apply as the definition of the conditions preceding most annual floods. For this purpose, AMC II will be used for all PWD approved projects.
Upon selecting the soil group, the appropriate curve number can be selected from various standard references and text books. A common free reference is the HEC-HMS technical reference manual which can be downloaded from the Army Corp of Engineers HEC website.

Time of Concentrations Calculations

There are numerous equations for calculating the time of concentrations. While many may be applicable to various locations, Table VIII-9 identifies the methods that shall be used in determining the time of concentrations within the PWD areas.

Table VIII-9, Time of Concentration Calculations

Larger of Contributing Area or Project Area (Acres	Sheet Flow	Open Channel Flow	Piped Flow
Less than 1.0 Acre	Less than 10 min(1)	Less than 10 min(1)	Less than 10 min(1)
1.0 Acre to 10.0 Acres	Calculated per HEC-22	Calculated per HEC-22	Calculated per HEC-22
Greater than 10.0 Acres	Subject to City Requirements	Subject to City Requirements	Subject to City Requirements

1). For areas less than 1.0 acres, the total time of concentration adds to 10 minutes.

Total Allowable Discharge Design Flows

The total discharge design flows to be used for design shall be the combination of the allowable design storm flows and base flows which may include the maximum irrigation diversion based upon water rights, whether the existing facilities have sufficient capacity or not, and maximum return flows from sources upstream of the canal or irrigation ditch.

Hydraulic calculations

Hydraulic calculations shall be used for sizing pipes and open channels associated with the total design flows.

Channel Design

Channels shall be designed with a trapezoidal cross section using roughness coefficients associated with the final restored condition. The Manning's equation methodology shall be used for sizing and considering the associated backwater impacts from downstream conditions. Computer software can be used to calculate the channel size, but sufficient data and results shall be provided to validate the procedure, assumptions, and conclusions.

Pipe Design

For design of pipes and culverts, the designer shall demonstrate that the pipes meet the standard design requirements using Manning's equation for open channel flow and standard culvert calculation procedures to determine inlet and outlet control conditions. Full pipe flow designs are not allowed for gravity systems. For storm water pressure mains from pump stations, either the Hazen-Williams or Darcy-Weisbach equations will be allowed. Roughness coefficients and assumptions shall be in accordance with Table VIII-10 selected from various references.

Table VIII-10, Mannings Coefficients for Pipe

Material	Roughness "n"
Smooth Interior HDPE or ADS Pipe	.010
Corrugated Metal Pipe (CMP)	.024
Concrete	.013
PVC	.010

The design and sizing may be done manually or with the use of computer software. However the results must be provided as part of the submittal review process.

Spread Width Calculations

Spread width calculations and depth of flow in the gutters shall be completed in accordance with HEC-22 methodology developed by the Federal Highway Administration (FHWA). These calculations can be completed using numerous available software or manually. However, the calculations must be documented and provided to the City for review for the design storms.

Detention and Retention Basin Designs

Detention or retention basins shall be used to reduce the peak flow rates to meet the discharge requirements and to provide water quality improvements by detaining the water and settling sediments and other contaminants or by preventing the storm water from leaving the site. These basins shall be constructed as part of the individual development projects, both residential and commercial, and regional projects as outlined in the most current PWD storm water master plan.

Detention Basins

The detention requirements shall be calculated differently depending upon the size of the projects and the storm water contributing area as summarized by the Table VIII-10.

Table VIII-10, Detention Basin Sizing Methodologies

Contributing Area Size	Method
Less than 1.0 Acre	Volume of runoff generated = volume of detention. This can be done with a simple spreadsheet.
1.0 Acre to 10 Acres	Volume of runoff generated = volume of detention - discharge through the outlet. Spreadsheet routing of the hyetograph or the use of more sophisticated models are required.
Greater than 10 Acres	Subject to additional requirements by each City. For construction sites that are 10 acres or larger, sediment basins of 3960 cubic feet per acre are required by MS4 permits during construction.

The ponds shall be designed to meet all of the requirements in VIII.B.6. The outlets shall be modeled as a function of the depth of the ponds. In most cases, this results in a depth-discharge curve and a depth-storage curve being created for the ponds and used in routing the hyetographs. These curves shall be provided to the PWD for review as part of the calculations.

While the magnitude of flows from a storm larger than the design storm is unknown, the emergency overflows shall be sized sufficient to pass the full design storm to prevent jeopardy to the detention basin and provides for the normal outlet to fully fail, or a second design storm to occur prior to the basin fully draining.

As part of the design, a percolation test shall be completed at the site of the pond with the hole excavated to at least two feet below the design invert. As the hole is dug, the soils shall be logged and photographed, with particular care given to 1) when saturated soils were encountered, 2) the elevation of the water table, and 3) the presence of "mottling" in the soil showing the historical presence of groundwater. This information shall be used in establishing the final invert elevation as required in Section B.

Retention Basins

The retention requirements shall be calculated differently depending upon the size of the projects and the storm water contributing area as summarized by the Table VIII-11. All calculations for sizing shall be completed base on a time step not exceeding 15 minutes.

Table VIII-11, Retention Basin Sizing Methodologies

Contributing Area Size	Method
Less than 1.0 Acre	Volume of runoff = volume of retention. This can be done with a simple spreadsheet.
1.0 Acre to 10.0 Acres	Volume of runoff generated = volume of retention. Spreadsheet routing of the hyetograph or the use of more sophisticated models are allowed.
Greater than 10.0 Acres	Subject to additional requirements by each City.

As part of the design, a percolation test shall be completed at the site of the pond with the hole excavated to at least two feet below the design invert. As the hole is dug, the soils shall be logged, with particular care given to 1) when saturated soils were encountered, 2) the elevation of the water table, and 3) the presence of "mottling" in the soil showing the historical presence of groundwater. This information shall be used in establishing the final invert elevation as required in Section B.

Since these ponds are dependent upon infiltration to dispose of the storm water, the designer shall designate methods of completion of the pond to maintain the infiltration rates determined by the certified percolation test. Note that where question of the effectiveness of the restoration and completion of the pond is present, the City may require the contractor to complete a new certified percolation test with a test hole not exceeding 6 inches to demonstrate the soil are not sealed by compaction.

Underground Retention and Injection Systems (Sumps)

Sumps, underground retention systems, and other underground injection systems are not allowed in drinking water source protection zones. Maps of these zones are available for review from the City Engineer. Additionally, all other locations are governed by the permitting requirements of the DWQ. Prior to submitting any designs for approval, the designer is expected to verify that location of the injection system is acceptable and obtain the Class 5 Injection Well Permit before any approvals will be granted.

Water Quality Treatment

All designs shall provide performance that will meet or exceed the more stringent requirements between the City, DWQ, and EPA. Best management practices (BMPs) for erosion and sediment control are acceptable as the primary treatment method with the appropriate documentation. These BMP's may include but are not limited to: vegetated filter buffers, detention basins with outlet treatment such as floatable and sediment separation, retention basins, landscaping swells, engineered wetlands, or other acceptable methods. The city has adopted a policy of reviewing ALL Low Impact storm water designs.

Irrigation Base Flows

Every existing irrigation ditch or canal has played a part of the City storm water facilities from the settling of the community. When the canals were built, they delivered water from the river and intercepted storm water runoff from uphill naturally. However, when the canals flooded, there weren't houses at risk back then. Now, with ongoing development, these conditions have changed. Design of storm drainage systems using the canals have special requirements as a result and must be approved by not only the City, but also the canal company serving the area of question.

Water Right Flows

The design flow will be the maximum flow allowed by the canal water rights. Flows down laterals and distribution ditches shall be obtained in accordance with the agreements between the Cities and the canal companies Obtain the water righted flows and the lateral flows directly from the canal companies. These must be documented in a letter signed by an authorized canal company representative to be accepted by the City. Primary canal company contacts are available from the City.

Return Flows

Many of the canals receive return flows from the upstream canals. This can seriously complicate the storm water design since many people turn off their irrigation water and simply pass it down the ditch during storms. This can result in major flooding issues on some canals, even without any storm water entering the canals. When designing a section of the canal, it shall be necessary to take the return flows into consideration and to discuss them with the canal companies. Again, the agreed upon flows must be obtained in accordance with the canal agreements with the Cities.

Storm Water Pollution Prevent Plan

All elements of the EPA template available from the DWQ website must be met without respect for project size. However the details and format changes tremendously as discussed in item B.11 above. Many designers have an erosion control plan that can be easily modified to meet all of the requirements for sites less than 1.0 acre. However, for larger sites, the PWD requires the EPA template available from our website be used.

Storm Water Submittals

Submittals Required for Hydrologic Calculations

Every review package shall provide basic hydrologic calculations in accordance with the specific Cities. Check with the City prior to initiating the calculations.

Submittals Required for Water Quality/Treatment Requirements

The water quality control and treatment methods shall be defined in the SWPPP and on the plan sheets. The associated additional specifications shall provide sufficient information for the contractor to build the system and ensure that it will meet the required performance specifications.

Submittals Required for SWPPP

A completed SWPPP prepared in accordance with Section B.11 shall be submitted with the review package. For all construction sites 1.0 acre or larger, copies of the Notice of Intent (NOI) from the Utah Division of Water Quality shall be submitted. Additionally, copies of all additional permits which may be required for the project including stream alteration permits, wetlands permits, Class 5 injection well permits, groundwater discharge permits, etc., shall be included with the SWPPP.

(End of Design Standards)

SWPPP PRECONSTRUCTION REVIEW SOP

Name of Development_____

Developer_____Phone:_____
Responsible Contact_____Phone:_____
Submittal Date _____ Reviewed Date _____ Reviewed by _____

References are given from both the Small MS4 General UPDES Permit (section 4.2) and the Construction General Permit (section 3.5).

- SWPPP Document (4.2.4.3.1)

Site Description

- Nature of activity or project – 3.5.1.a _____
- Intended sequence of major soil disturbing activities – 3.5.1.b _____
- Total area of site, area to be disturbed – 3.5.1.c _____
- Runoff coefficient – 3.5.1.d
  - Pre-construction _____
  - Post-construction_____
- General location map – 3.5.1.e
  - Existing drainage patterns and slopes
  - Final drainage patterns and slopes
  - Construction boundaries
  - Existing vegetation description
  - Areas of soil disturbance
  - Areas of no soil disturbance
  - BMP locations
  - Off-site areas used for construction support (may be non-applicable)
  - Final stabilization treatment
  - Discharge locations
- Description and location of discharges associated with off-site facilities (portable asphalt or concrete plants, stockpile areas, etc…) – 3.5.1.f _____
- Name and location of receiving waters – 3.5.1.g _____
- Area and boundary of any associated wetlands (may be non-applicable) – 3.5.1.g
- Copy of the current General Permit for Construction Activities

Erosion and Sediment Controls - 3.5.2.a.1

- Control measures for each major soil disturbing activity
  - Activity_____
  - Control Measure to be used_____
  - Timing_____
  - Installation details
  - Anticipated maintenance requirements

Stabilization Practices – 3.5.2.a.2

- Site specific stabilization
  - Interim stabilization practices – including timing
  - Permanent stabilization practices – including timing

Structural Controls - 3.5.2.a.3

- Flow control
  - Description of flow diversion BMPs

    _____
  - Description of flow storage BMPs

    _____
  - If site is 10 acres are more – Sediment Basin required
    - Basin sized for 3,600 cf/acre or 10-yr 24 hour storm

Post-Construction BMPs – 3.5.2.b

- Description of how pollutants are controlled after construction. (ie. permanent detention or retention basins, flow attenuation swales, infiltration, combination of BMPs, etc.)

  _____
- Technical basis for selecting post-construction BMPs

  _____
- Velocity dissipation devices at discharge points (as necessary)

Other Controls – 3.5.2.c

- Waste Disposal – location and practices to control
- Off-Site Tracking – off-site tracking and dust control
- Septic, Waste and Sanitary Sewer Disposal – location and practices to control
- Vehicle/Equip. maintenance areas and controls.
- Exposure to construction materials – inventory, storage practices, locations, spill response, and practices to control
- Off-site support area controls (if applicable)

Maintenance – 3.5.3

- Maintenance requirements and schedules
- Maintenance Agreements

Non-Storm Water Discharges – 3.5.5

- Identify non-storm water discharges that may be associated with project (water used to clean or flush improvements, etc…)

  _____
- Describe measures to be taken to implement pollution prevention for non-storm water discharges

  _____

Inspections – 3.5.4

- Inspection requirements (at least once every 7 days, or once every 14 days and within 24 hours after a storm of 0.5 inches or greater)
- Qualifications of the inspector
- Linear project inspection requirements (0.25 miles above and below each access point)
- Inspection report forms
  - Inspection date
  - Name, title and qualifications of inspector
  - Weather information since last inspection
  - Current weather information

- Locations of pollutant discharges
- Locations of BMPs needing maintenance
- Locations of BMPs that aren't working
- Locations where additional BMPs are needed
- Any corrective actions that may be required, including changes that need to be made to the SWPPP – with implementation dates

☐ Requirements to keep records as part of SWPPP for at least 5 years

II- Water Quality Review (4.2.4.3.2)

☐ Urban Pollutants of Concern
- Sediments
- Nutrients (Phosphorus, Nitrogen…)
- Metals
- Hydrocarbons/oils
- Pesticides
- Chlorides
- Trash and Debris
- Bacteria
- Organics matter
- Others_____

☐ Consider options to include water quality aspects to this project.

☐ Identify any highly impacted areas.

☐ Identify and limit directly connected impervious areas (DCIA) on this project.

☐ Identify measures to minimize runoff.

III- Low Impact Development Design (4.2.4.3.3)

☐ Identify any low-impact development concepts and ideas that might work for this project. Consider the following LID Techniques:
- Bio-Retention Areas
- Green Roof
- Permeable Pavements
- Rain Water Collection
- Riparian Buffers
- Green Street System
- Non Structural

IV- Sensitive Areas (4.2.4.3.4)(3.5.2.d)

List any of the following within the proximity:

☐ Impaired water bodies

☐ High Quality Waters

☐ TMDL

☐ Wetlands

☐ Wildlife issues (Threatened & Endangered Species)

☐ Historic

☐ Priority Construction sites (7.36)

☐ Other_____

Any variance of Permit_____(End of SWPPP Review)

Maintenance Agreement.(Guidelines to be adopted in Ordinance)

(1) The owners with a record interest in the private drainage facilities specified (***AT LOCATION***) shall sign and record a covenant which runs with the land and requires the owners of the property, and their heirs, successors and assigns to maintain the drainage facilities. The covenant shall be in a form specified by the director. The restrictions set forth in such covenant shall include, but not be limited to a description of the owner's maintenance responsibilities and obligations, the right of entry for inspection by the county, and provisions for notice to the persons holding title to the property of a county determination that maintenance and/or repairs are necessary to the facility and a reasonable time limit in which such work is to be completed.

(2) If required maintenance has not been performed, the county may cause said maintenance to be done at the sole expense of the owner. The city shall endeavor to provide the property owner reasonable advance notification of the need to do the maintenance and a reasonable opportunity for the property owner to perform it. The property owner shall reimburse the city for the cost of performing maintenance which the owner has failed to perform in violation of this code. Payments shall be made within sixty days of the day the county submits a bill for costs. In the event of nonpayment, the city may bring suit to recover such costs, including its attorney's fees, and upon obtaining a judgment, such amount shall become a lien against the property of the owner.

The following form is used or if possible, it is put on the Final Recorded Plat

Smithfield City Smithfield Utah 84335

Department of Engineering GRANT OF STORMWATER
Protection MANAGEMENT EASEMENT Parcel ID#_____
(***Street Name or Location***)
Smithfield City, Utah
Made this _____ day of _____, 19 _____, by and between _____,
Grantor(s) and **Smithfield City, Utah**, hereinafter referred to as the City.
WITNESSETH: That in consideration of the sum of One Dollar (1.00) paid by the City, the receipt of which is hereby acknowledged, the Grantor(s) do hereby grant and convey to the City, its successors and assigns, a stormwater management easement and right-of-way described as follows:

EASEMENT

(Name of Property Owner), with land ownership in the City of Smithfield, further described as being in Cache County herein after referred to as GRANTOR, hereby grants and conveys the right to lay, construct, reconstruct, operate, maintain, replace and/or remove earth, conduits, concrete and other associated appurtenances in Smithfield City of which it is the Owner, bounded and described as follows, to wit: a parcel of land situated on the ***(Location, Street Name)***.
Title to the aforesaid lands and premises was obtained by deed dated ***XX/XX/XX*** and recorded in Book ***XXX*** at Page ***XXX*** of the ***(City, County, or State)*** Land Records.
The above granted rights being more particularly described as the exclusive right to construct, reconstruct, operate, maintain, replace and/or remove earth, conduits, concrete and other associated appurtenances for a ***pond/ wetland/ treatment device/ channel rehabilitation measure/ other*** that is intended to reduce the level of pollutants and erosion entering ***(local water body)***. This ***pond/ wetland/ treatment device/ channel rehabilitation measure/ other*** may be monitored with the results being used to determine specific or overall effectiveness of the structural stormwater control present.
The area of easement shall be bound by ***XXX***. An initial area of construction ***X*** feet on either side of this easement may be necessary for proper installation. This easement shall exist in perpetuity unless both parties agree upon a discontinuation of the easement.
The Grantor and any successors agree that they will not erect or permit any building upon said land area and upon said premises that will restrict access thereto for all the above purposes.

Smithfield City hereby for itself and its successors agrees

Storm Water
Inspections and Frequency's

1. Any Land disturbance of over or equal to an acre needs SWPPP, needs an NOI, must be inspected every Month, or after a significant storm, and when project is completed it needs to be inspected to make sure it is ready for an NOT from the state.

2. If a project is less than one acre but part of a larger common plan of development or sale (lot in a larger subdivision.) it must be inspected once a month, and after a significant storm until completion of the project.

3. Inspect 20% of all outfalls in a calendar year so that in a five year span I will inspect all outfalls.

4. Inspect all high priority city owned facilities. Bi-Monthly do a quick inspection.

5. Inspect all high priority city owned facilities. Quarterly and do a full comprehensive inspection.

Updated January 2018

UTAH DEPARTMENT of ENVIRONMENTAL QUALITY

UPDES STORM WATER INSPECTION EVALUATION FORM FOR SWPPP COMPLIANCE

Inspection #: _____

Site Name: _____ UPDES Permit #: _____

Site Address: _____

Local Jurisdiction or County: _____ Inspection Cycle: High Priority ☐ 7 Days ☐ 14 Days ☐

Permit Effective Date: _____ Permit Expiration Date: _____ Total Project Area: _____ Total Disturbed Area: _____

Project Type: Subdivision ☐ Commercial ☐ Industrial ☐ Linear (Road/Pipe/Power) ☐ Land Disturbance ☐

OPERATOR CONTACT INFORMATION

Operator: _____ Phone: _____ E-mail: _____

On-site Facility Contact: _____ Phone: _____ E-mail: _____

Important Contacts: _____ Phone: _____ E-mail: _____

Important Contacts: _____ Phone: _____ E-mail: _____

SWPPP PRE-SITE REVIEW INFORMATION

1. Has a pre-construction review of the SWPPP been conducted by the appropriate municipal agency? Yes ☐ No ☐

2. Are contact names, positions, responsibilities, and telephone numbers of the Stormwater Team and all other site Operators listed in the SWPPP? Yes ☐ No ☐

3. Does the SWPPP include a site map showing storm drains, slopes/surface drainage patterns, SW discharge points, construction boundaries, limits of disturbance, surface waters (name of receiving water), TMDL requirements, buffer zones, structural controls, and does it define/explain non-structural controls? Yes ☐ No ☐

4. Does the SWPPP have an estimate of the area to be disturbed, a sequence of construction activities, the SW runoff coefficient before and after construction, a description of the soil types, controls for discharges from (asphalt/concrete) batch plants if any, list UIC Class 5 Injection Well activities and use, show wetland areas, and have a description of the nature of the construction activity? Yes ☐ No ☐

5. Does the SWPPP and site map show erosion and sediment controls placement & details, buffer zone documentation (e.g.erosion blankets, mulch, slope drains, check dams, sediment basins, grass-lined channels, fiber rolls, sediment traps, silt fence, inlet protection, curb cut-back, dust control, chemical treatments etc?) Yes ☐ No ☐

6. Does the SWPPP and site map show and describe good housekeeping controls and storage areas of polymers, flocculants or other treatment chemicals, spill prevention and mitigation measures, staff training procedures and logs. (e.g. track out pad, street sweeping, material storage, construction waste containment and removal, sanitary waste, concrete washout pits, etc) Yes ☐ No ☐

7. Are post-construction elements included in the SWPPP? (i.e. grass swales, detention basins, vegetated filter strips, infiltration, depression storage, landscaping/xeriscaping, discontinuous concrete or hard surface SW conveyance, etc.) Yes ☐ No ☐

8.Are the SWPPP Certifications signed by the proper and responsible officers and parties (see permit Appendix G Part G. 16,1,2 & 1.3) Yes ☐ No ☐

9. Are the NOI , a copy of the State permit, Appendix logs and forms in the SWPPP? Yes ☐ No ☐

NOTICE OF TERMINATION (NOT) INSPECTION

Site Name: _____ Evaluation Date: _____

Site Address: _____

Inspected By: _____ Title/Organization: _____

1. Has the site been properly stabilized according to permit requirements? Yes ☐ No ☐

2. Have all temporary BMPs been removed? Yes ☐ No ☐

3. Have post-construction (permanent storm water system) elements been constructed and inspected in accordance with approved project drawings? Yes ☐ No ☐

4. Is the site acceptably clean? Yes ☐ No ☐

COMMENTS:

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.

Inspector (*Print Name*) _____ Title: _____ Signature: X _____ Date: _____

Operator: (*Print Name*) _____ Title: _____ Signature: X _____ Date: _____

Operator: (*Print Name*) _____ Title: _____ Signature: X _____ Date: _____

ADDITIONAL COMMENTS AND CORRECTIVE ACTIONS FOR SWPPP COMPLIANCE

By: Date:

Project Name: Project Address:

Appendix B

Public Works

* Standard Operating Procedures
* BMP Fact Sheets
* City Owned Facilities
  - Aerial of City owned Facilities
  - Assessment of City Owned Facilities
  - City Detention/Retention Ponds (Aerials with Outlet Elevations)

STANDARD OPERATING PROCEDURES
TABLE OF CONTENTS

PARKS – Chemical Application Pesticides, Herbicides, Fertilizers

Description: This section contains information on the application of Pesticides, Herbicides and Fertilizers to Parks. Including how to prepare, take care, and disposal of chemical products.

Applicability: Using chemicals in city parks.

1. Preparation

   Calibrate fertilizer and pesticide application equipment to avoid excessive application.

   Use pesticides only if there is an actual pest problem

   Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").

   Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides or herbicides only when wind speeds are low(less than 5 mph).

2. Process

   Always follow the manufacturer's recommendations for mixing, application and disposal. ("Read the Label").

   Do not mix or prepare pesticides for application near storm drains,

   Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.

3. Clean-up

   Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.

   Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.

   Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. ("Read the Label")

4. Documentation

   Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.

   Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.

PARKS – Mowing and Trimming

Description: This section contains information on mowing and trimming around drainage structures and the proper cleaning of mowing and trimming equipment.

Applicability: Mowing and trimming in city parks.

1. Preparation

   Locate all storm drain collection structures and inlets in the right-of-way.

2. Process

   Install temporary catch basin protection on affected basins

   Mow in a manner to minimize clippings blown toward collection structures inlets and water courses.

3. Clean-up

   Scraped and brush mowers at the shop – Sweep dry spoils and dispose at approved facilities.

   Wash equipment in approved wash station

4. Documentation

   None.

PARKS – Planting Vegetation

Description: This section contains information on the planting of within parks and rights-of-way. This also includes cleaning of the area and how to dispose of excess soil.

Applicability: Planting in Parks and rights-of-way.

1. Preparation

   Call the Blue Stakes Center of Utah at least 2 working days before any digging will be performed, to reveal the location of any underground utilities.

   Dial 811 or 1-800-662-4111.

   Determine where any spoils will be taken.

2. Process

   Dig holes; place spoils near the hole where they may easily be placed back around roots. Avoid placing spoils in the gutter or areas that may drain into drainage ways

   Bring each plant near the edge of the hole dug for it.

   Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.

   Carefully remove pot or burlap.

   Place the plant in the hole.

   Backfill the hole with existing spoils, compost, and fertilizer if desired. Do not use excessive amendments.

   Water the plant.

   Stake the plant, if necessary, to stabilize it.

3. Clean-up

   Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.

   Sweep dirt from surrounding pavement(s) into the planter area

   Transport spoils to their designated fill or disposal area.

PARKS –Seeding

Description: This section contains information on the seeding of areas in parks and rights-of-way. This also includes cleaning of the area and how to dispose of excess soil.

Applicability: Planting in Parks and Rights-of-way.

1. Preparation

Call the Blue Stakes Center of Utah at least 2 working days before any digging or grading will be done, to reveal the location of any underground utilities.

Dial 811 or 1-800-662-4111

Decide on the application rate, method, water source, and ensure adequate materials are in possession.

Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.

2. Process

Place the seed and any cover using the pre-determined application method (and rate).

Lightly moisten the seed.

Adjust watering rates to minimize runoff from seeded area.

Monitor site for erosion. Correct as needed.

3. Clean-up

Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.

Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area

Transport spoils to their designated fill or disposal area.

Documentation

None.

STREETS/STORM DRAIN – Catch Basins

Description: This section contains information on the cleaning of catch basins in the storm drain system. This includes the processes of disposal of excess waste and the record keeping of the amounts of waste collected.

Applicability: Cleaning catch basins or storm drains.

1. Preparation:

   Clean off sediment and trash off grate.

   Do visual inspection on outside of grate.

   Make sure nothing needs to be replaced.

   Do inside visual inspection to see what needs to be cleaned.

2. Process

   Clean catch basin using manual or mechanical means.

   For manual means, place removed material in a location protected from potential runoff.

   Place spoils in vehicle for transport to disposal area.

   Dispose of spoils in an approved location for dewatering if necessary.

   For mechanical cleaning use a high powered vac truck to removed sediment. When sediment is removed use a high pressure washer to clean any other sediment out of catch basin.

   After catch basin is clean, send the rodder of the vac truck downstream to clean pipe and pull back sediment that might have moved down stream of the catch basin.

3. Clean-up

   When vehicle is full of spoils take them to a contained area for drying.

   After drying, put it into a dump truck and take it to the landfill.

4. Documentation

   Keep logs of the date and number of catch basins cleaned. Record employees involved with the activity.

   Record the estimated amount of waste collected from each catch basin.

   Keep any notes or comments of any problems.

STREETS/STORM DRAIN – Curb Painting

Description: This section contains information on the painting of curbs and how to protect the drainage system from hazardous wastes. The use of BMP's in case of accidents and spills is recommended. This also includes the processes of disposal, clean up, and record keeping of any paint entering into the storm drain system.

Applicability: Curb Surface painting.

1. Preparation

   Calculate the amount of paint required for the job

   Use water based paints if possible.

   Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes

   Determine locations of storm drain inlets and sewer inlets that may need to be protected. If possible, prepare surfaces to be painted without generating wastewater; eg. Use sandblasting and or scraping.

   If using a pressure washer to remove loose paint, place filter fabric or containment devices at entrances to storm drains or natural waterways to collect materials. (i.e. place geotextile beneath catch basin grates, use curb dyke)

   Use a citrus-based paint remover whenever possible, less toxic than chemical strippers

2. Process

   Paint curb.

   Prevent over-spraying of paints and/or excessive sandblasting

   Use drip pans and drop clothes in areas of mixing paints and painting

   Store latex paint rollers and brushes in air tight bags to be reused later with the same color.

   Have available absorbent material and other BMP's ready for an accidental paint spill.

3. Clean-up

   Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.

   Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.

   Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.

   Cleanup oil based paints with paint thinner. Never clean oil based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and/or store in approved drum for recycling.

4. Documentation

   Write-up/report of any discharges into storm drain system

STREETS/STORM DRAIN – Culvert and Stormwater Pipe Cleaning

Description: This section contains information on the cleaning of storm drain culverts and pipes. This also includes what methods to use to remove sediment and debris from the structure. A record keeping procedure is also outlined for tracking the cleaning process.

Applicability: Cleaning of Culverts and Pipes.

1. Preparation:

   Clean sediment and trash off inlet to culvert/storm water pipe.

   If possible do visual inspection of inside of culvert/storm water pipe.

   Look for cracks, missing or broken pieces in the walls/sides of structure.

   Do inside visual inspection to see what needs to be cleaned.

2. Process

   Clean using a high powered vac truck, cleaning the sides of the structure and sucking out sediment on the bottom.

   Send high powered hose down culvert and pull back any sediment.

   Clean inlets and outlets.

   Move truck down to next storm drain.

3. Clean-up

   When vac truck is full of sediment take it to _____ to dump all the sediment out of the truck into a dry pond.

   When evaporates are dry, clean it up with a backhoe, put it into a dump truck and take it to the landfill.

4. Documentation

   Keep logs of culverts/storm water pipes wells cleaned.

   Record the amount of waste collected.

   Keep any notes or comments of any problems.

STREETS/STORM DRAIN – Sumps and Injection Wells (Includes Underground Stormwater Detention Structures)

Description: This section contains information on the cleaning of storm drain sumps and injection wells. This also includes what methods to use to remove sediment and debris from the structures. A record keeping procedure is also outlined for tracking the cleaning process.

Applicability: Cleaning of Sumps and Injection Wells.

1. Preparation:

   Clean sediment and trash off inlet to sump/injection well.

   Determine how water is supposed to drain from the structure and assess the ability of the structure to allow water to drain as designed.

   If possible do visual inspection of inside of sump/injection well.

   Look for cracks, missing or broken pieces in the walls/sides of structure.

   Do inside visual inspection to see what needs to be cleaned.

2. Process

   Clean using a high powered vac truck, cleaning the sides of the structure and sucking out sediment on the bottom.

   Remove fine sediments that might inhibit the drainage of water if the structure is designed such that the water drains out the bottom.

   Clean those places where to water drains if the structure is designed to drain out the sides of the sump/injection well.

   Clean inlets and overflow outlets.

3. Clean-up

   When vac truck is full of sediment take it to _____ to dump all the sediment out of the truck into a dry pond.

   When evaporates are dry, clean it up with a backhoe, put it into a dump truck and take it to the landfill.

4. Documentation

   Keep logs of culverts/storm water pipes wells cleaned.

   Record the amount of waste collected.

   c. Keep any notes or comments of any problems.

STREETS/STORM DRAIN – Detention Ponds

Description: This section contains information on the maintenance and cleaning of storm drain detention ponds and structures. This also includes what methods to use to remove sediment and debris from the structure. A record keeping process is also outlined for maintenance.

Applicability: Maintenance of detention structures.

1. Preparation:

   Remove any sediment and trash from grates.

   Do a visual inspection to make sure grates are in good shape and everything is in good working order.

   Pull grates, inspect inside of structures/boxes/pipes.

2. Process

   Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.

   If necessary, clean basin by using backhoe to remove silt and sediment off the bottom

   Place all sediment into a dump truck.

   Clean structures as cleaning catch basins SOP.

3. Clean-up

   Haul and dump sediment at the landfill.

4. Documentation

   Keep logs of number of detention basins cleaned including date, estimated quantity of material, individuals involved in cleaning, and a description of the type of debris removed.

   Record the estimated amount of waste collected.

   c. Keep any notes or comments of any problems.

STREETS/STORM DRAIN – Creek Maintenance

Description: This section contains information on the maintenance and preservation of natural water courses including creeks and streams. This also includes identifying what maintenance needs to be done and the method of how it will be accomplished. Record keeping is necessary in stream maintenance.

Applicability: Maintaining any creek or stream.

1. Preparation

   Monitor streams on a regular basis .

   Check culverts and crossings after every storm or runoff event.

   Maintain access to stream channels wherever possible.

   Identify areas requiring maintenance.

   Determine method of maintenance that will be least damaging to the channel.

   Determine what manpower or equipment will be required.

   Obtain necessary permits as required by the Army Corp. of Engineers or State Engineers Office.

   Identify access and easements to area requiring maintenance.

2. Process

   Follow requirements of permits as applicable.

   Use techniques to minimize disruption to the stream bank or channel

   Install clean materials free of pollutants and contaminants.

   Place removed materials in an area upland of the water course to prevent them from re-entering the channel.

3. Clean-up

   Stabilize all disturbed soils.

   Haul all debris or sediment removed from area to approved dumping site.

   Remove all tracking from paved surfaces near maintenance site, if applicable.

4. Documentation

   Keep log of actions performed including date and individuals involved.

   Record the amount of materials removed or imported.

   Keep any notes or comments of any problems.

   Use “before” and “after” photographs to document activities as applicable.

STREETS/STORM DRAIN – Canal / Ditch Maintenance

Description: This section contains information on the maintenance and preservation of canals. This also includes identifying what maintenance needs to be done and the method of how it will be accomplished. Record keeping is necessary in canal maintenance.

Applicability: Maintaining canal or irrigation ditch.

1. Preparation

   Monitor canals on a regular basis (Monthly).

   Establish maintenance responsibilities with irrigation company boards and operators.

   Create a maintenance schedule with the irrigation company.

   Identify areas requiring maintenance with irrigation company annually at a minimum.

   Identify access and easements to canal area.

   Establish procedures for removal of material from canal maintenance. Including stockpiling of material removed or hauling methods.

   Check canal/ditch crossings on schedule, including during and after storm events.

   Determine what man power or equipment will be required.

2. Process

   Perform maintenance as outlined in agreement with irrigation company

   Install clean materials free of pollutants and contaminants.

   Place removed materials in an area upland of the watercourse to prevent them from re-entering the channel.

   Haul material away as outlined in agreements with irrigation company.

3. Clean-up

   Stabilize all disturbed soils.

   Haul all debris or sediment removed from area to approved dumping site.

   Remove all tracking from paved surfaces near maintenance site, if applicable.

4. Documentation

   Keep log of actions performed including date and individuals involved.

   Record the amount of materials removed or imported.

   Keep any notes or comments of any problems.

   Use “before” and “after” photographs to document activities as applicable.

STREETS/STORM DRAIN – Chip Seal

Description: This section contains information on the protection and maintenance of storm drain system while chip sealing roadways. This also includes guidelines for chip sealing and for the cleaning of roadways after a chip seal has been applied.

Applicability: Chip sealing roadways.

1. Preparation

   Remove weeds from the roads.

   Correct any areas with poor drainage. (i.e. rutting)

   Clean and dry areas where materials are to be applied. Ensure manholes and catch basins are covered to prevent oil and materials from getting inside the structures or system.

   Calibrate spreader to minimize excess chips from being placed on the emulsion.

   Review standard operating procedure with contractor if performing work.

2. Process

   Apply emulsion at recommended rate.

   Spread chips closely behind emulsion distributor.

   Roll chips. Rollers follow closely behind the chip spreader. Roll entire surface twice.

3. Clean-up

   Use street sweeper to pick up excess chips.

   Remove excessive asphalt applications and spills.

   a. Remove covers from storm drain structures and remove debris that has entered the collection system.

4. Documentation

   Record location and date on the maintenance log.

STREETS/STORM DRAIN – Slurry Seal

Description: This section contains information on the protection and maintenance of storm drain system while applying slurry seal to roadways.

Applicability: Applying slurry seal to roadways.

1. Preparation

   Remove weeds from the roads.

   Clean and dry areas where materials are to be applied.

   Correct any areas with poor drainage. (i.e. rutting)

   Cover/protect catch basins and manholes.

   Review standard operating procedure with contractor if performing work.

2. Process

   Apply slurry in a smooth and uniform manner.

   Protect adjacent areas and storm drainage systems from slurry during spreading.

3. Clean-up

   Remove covers/protection from catch basins and manholes.

   Clean up any excess material that may have entered the storm drain.

   Dispose of excess materials at an approved location.

4. Documentation

   Record location and date on the maintenance log.

STREETS/STORM DRAIN – Overlays and Patching

Description: This section contains information on the protection and maintenance of storm drain system while the roadway is being overlaid or patched.

Applicability: Overlaying or patching roadways.

1. Preparation

   Correct any areas with poor drainage. (i.e. rutting)

   Fill pothole areas and soft spots.

   Seal cracks in asphalt.

   Manholes and catch basins are covered to prevent oil and materials from getting inside the structures or system.

   Surface should be clean and dry.

   Review standard operating procedure with contractor if performing work.

2. Process

   Apply tack coat uniformly at the required rate. Do not over apply.

   Protect area outside of work zone from overlay material.

   Place removed material in a truck for removal from the job site.

   Protect manholes and catch basins when raising covers as necessary.

3 Clean-up

   a. Remove covers from catch basins and manholes

4 Documentation

   Record location and date on the maintenance log.

STREETS/STORM DRAIN – Crack Seal

Description: This section contains information on the protection and maintenance of roadway and storm drain system while cracks are being sealed on roadway surface.

Applicability: Crack sealing on roadways.

1. Preparation

   Remove weeds from the

   Surface should be clean and dry. cracks.

   Remove sediments from crack to a specified depth.

   Review standard operating procedure with contractor if performing work.

2. Process

   Place material as specified.

   Minimize material from spilling outside of crack and into storm drain systems.

   Keep crack sealing equipment on asphalt surface to control any material spills.

3. Clean-up

   Remove excessive sealant or spills from roadway.

4. Documentation

   Record location and date on the maintenance log.

STREETS/STORM DRAIN – Shouldering

Description: This section contains information on the protection and maintenance of roadway and storm drain system while shouldering. This includes traffic control, cleaning, and record keeping of the project.

Applicability: Shouldering roadways.

1. Preparation

   Use traffic control devices as necessary.

   Install protection for storm drain system from receiving shouldering material.

   Determine quantity required for shouldering and distribute along roadway as needed trying to minimize stockpiles.

2. Process

   Place import material as needed and perform grading to achieve proper drainage.

   Compact as placement of material occurs to minimize erosion.

3. Clean-up

   Clean any loose material off asphalt or gutter by dry methods

   Remove protection from the storm drain system.

   Clean up any excess material, that has entered the storm drain system.

4. Documentation

   Record location and date on the maintenance log.

PARKS – Mowing and Trimming

Description: This section contains information on mowing and trimming in the right-of-way and the proper cleaning of mowing and trimming equipment.

Applicability: Mowing and trimming along city streets.

1. Preparation

   Locate all storm drain collection structures and inlets in the right-of-way.

   Fuel mower in a manner to minimize spills.

2. Process

   Install temporary catch basin protection on affected basins

   Mow in a manner to blow clippings blown away from collection structures inlets and water courses.

3. Clean-up

   Scraped and brush mowers at the shop – Sweep dry spoils and dispose at approved facilities.

   Wash equipment in approved wash station

4. Documentation

   None.

STREETS/STORM DRAIN – Gravel Road Maintenance

Description: This section contains information on gravel roadway maintenance and the protection of the storm drain system.

Applicability: Performing any maintenance on gravel roadways.

1. Preparation

   Locate drainage features along length of road to be maintained

   Protect drainage structures from material entering the system during maintenance activities

   Determine disposal site for excess materials

   Install traffic control as necessary.

   Stockpile material as necessary for the work.

   Install BMP's as necessary for the level of work to be performed.

2. Process

   Grade road to promote drainage away from the roadway.

   Place imported material as needed for roadway.

   Compact material quickly to maintain moisture content and reduce potential for erosion.

   Repair/revise drainage structures to collect runoff.

   Stabilize shoulders after completing maintenance.

   Install / maintain BMP's as necessary along roadway.

3. Clean-up

   Remove stockpiled material from work area.

   Stabilize any loose material or disturbed areas.

   Clean any tracked materials from paved surfaces.

4. Documentation

   Record location and date on the maintenance log.

STREETS/STORM DRAIN – Concrete Work

Description: This section contains information on proper concrete placement and how to clean a site to prevent excess concrete materials from entering the storm drain system.

Applicability: Performing any maintenance on roadways.

1. Preparation

   Train employees and contractors in proper concrete waste management

   Store dry and wet materials under cover, away from drainage areas

   Determine how much new concrete will be needed.

   Locate or construct approved concrete washout facility.

2. Process

   Remove any damaged concrete that may need to be replaced.

   Prepare and compact subbase.

   Set forms and place any reinforcing steel that may be required.

   Moisten subbase just prior to placing new concrete. Place new concrete in forms.

   Consolidate new concrete.

   Screed off surface.

   Let concrete obtain its initial set.

   Apply appropriate surface finish

3. Clean-up

   Perform washout of concrete trucks and equipment in approved washout area.

   Remove and dispose of excess concrete spilled on site. Sweep and remove concrete dust from grinding activities from the site.

4. Documentation

   None

STREETS/STORM DRAIN – Garbage Storage

Description: This section contains information on proper placement, installation, and cleaning of garbage dumpsters. Also, proper use and repair of damaged garbage bins to prevent leakage into drainage system.

Applicability: Garbage dumpster/bin location.

1. Preparation

   Locate dumpsters and trash cans with lids in convenient, easily observable areas.

   Locate dumpsters on a flat, impervious surface that does not slope or drain directly into the storm drain system.

   Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.

   Provide properly labeled recycling bins to reduce the amount of garbage disposed.

   Provide training to employees to prevent improper disposal of general trash.

2. Process

   Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.

   Have garbage bins empted as often as needed to keep from overfilling.

   Keep lids closed when not actively filling dumpster.

   Repair any drainage improvements to prevent runoff from dumpsters from entering the storm drain system.

3. Clean-up

   Keep areas around dumpsters clean of all garbage.

   Wash out bins or dumpsters as needed to keep odors from becoming a problem.

STREETS/STORM DRAIN – Snow Removal and De-icing

Description: This section contains information on proper storage and loading of de-icing material in order to prevent materials from entering into a storm drain system.

Applicability: Snow removal or application of de-icing materials.

1. Preparation

   Store de-icing material under a covered storage area or in an area.

   Collect and deliver water coming off the de-icing materials to the sanitary sewer or reuse as salt brine.

   Slope loading area away from storm drain inlets

   Design drainage from loading area to collect runoff before entering storm water system

   Wash out vehicles (if necessary) in approved washout area before preparing them for snow removal.

   Calibrate spreaders to minimize amount of de-icing material used and still be effective

   Train employees in spill cleanup procedures and proper handling and storage of de-icing materials

2. Process

   Load material into trucks minimizing spillage.

   Sweep loading area periodically to reduce the amount of de-icing materials exposed to runoff

   Distribute the minimum amount of de-icing material to be effective on roads

   Do not allow spreaders to idle while distributing de-icing materials.

   Park trucks with de-icing material inside when possible

3. Cleanup

   Sweep up all spilled de-icing material around loading area.

   Clean out trucks after snow removal duty in approved washout area.

   Provide maintenance for vehicles in covered area.

4. Documentation

   a. None

STREETS/STORM DRAIN – Salt and Sand, Mixing and Storing

Description: This section contains information on proper storage and loading of de-icing material in order to prevent materials from entering into a storm drain system.

Applicability: Snow removal or application of de-icing materials.

1. Preparation

   Mix and store materials on impervious surface only.

   Mix materials in summer months.

   After mixing materials store in covered shed.

2. Process

   Mixed materials are ready for winter use.

3. Cleanup

   Sweep up/Clean up mixing areas.

   Wash out trucks/loaders in approved wash bays.

4. Documentation

   None

STREETS/STORM DRAIN – Street Sweeping

Description: This section contains information and guidelines on proper street sweeping techniques in order to prevent high rates of oils and other pollutants from getting into the storm drain system.

Applicability: Streets with a high quantity of debris and pollutants.

1. Preparation

   Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.

   Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.

   Review standard operating procedure with contractor if performing work.

2. Process

   Drive street sweeper safely and pickup debris.

   Dispose of debris at an approved street sweeper disposal location.

3. Clean-up

   Clean street sweepers at an approved street sweeper cleaning station

   Street sweeping cleaning stations shall separate the solids from the liquids.

   Once solids have had a chance to dry out haul to the local landfill

   Collected decant water and route to an approved wastewater collection system.

4. Documentation

   Keep accurate logs to track street swept and streets still requiring sweeping.

   Log the approximate amount of debris collected and hauled off.

STREETS/STORM DRAIN – Transporting Soil and Gravel

Description: This section contains information for proper site preparation and maintenance while materials are being transported to or from a site. The use of a SWPPP is also recommended.

Applicability: Removing or importing fill materials for a site.

1. Preparation

   Dry out wet materials before transporting to prevent spillage on the roadway.

   Spray down dusty materials to keep from blowing.

   Know and understand the SWPPP requirements for the site you will be working at.

2. Process

   Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.

   Cover truck bed with a secured tarp before transporting.

   Follow the SWPPP requirements for the specific site to/from which the materials are being hauled.

   Do not to overfill materials when loading trucks.

3. Clean up

   Clean up any materials tracked out on the roads from site with street sweeper or by hand methods.

   Wash mud from vehicles before leaving site.

4. Documentation

   Document tracked material cleanup in maintenance logs.

WATER – Planned Waterline Excavation Repair/Replacement

Description: This section contains information for proper waterline excavation. Including protection of storm drain inlets and clearing of gutters.

Applicability: Repairing or replacing waterlines.

1. Preparation

   Determine where discharge flow will go.

   Obtain dewatering permit if necessary for the project.

   Protect Storm drain inlet(s).

   Clean Gutters leading to inlet.

   Isolate waterline to be worked on.

2. Process

   Make efforts to keep water from pipeline from entering the excavation

   Direct any discharge to pre-determined area per permit if necessary.

   Neutralize any chlorine residual before discharging water to a storm drain or water course.

   Backfill excavation.

   Haul off excavated material or stock pile nearby.

   Stabilize any stockpiled material until installed or hauled away.

3. Clean up

   Clear gutter/ waterway where water flowed

   Clean up and stabilize all areas around excavation

   Clean up travel path of hauled material if necessary.

4. Documentation

   Document beginning of work, completion of work and any cleanup items performed on site.

WATER – Unplanned Waterline Excavation Repair/Replacement

Description: This section contains information for proper waterline excavation when an unexpected leak has occurred. Including protection of storm drain inlets and clearing of gutters.

Applicability: Repairing or replacing waterlines when unexpected leak occurs.

1. Preparation

   Equip leak repair equipment with filter material (Inlet Protection Filter bags)

2. Process

   Stop the discharge

   Inspect flow path of discharged water

   Protect water inlet areas.

   Follow planned repair procedures.

   Haul off spoils from excavation

3. Clean-up

   Repair eroded areas as needed.

   Stabilize area from further erosion.

   Clean traveled path of hauled material

4. Documentation

   Document beginning of work, completion of work and any cleanup items performed on site.

WATER – Transporting Dry Excavated Materials & Spoils

Description: This section contains information for proper transport of dry excavated materials that may have environmental contaminants.

Applicability: Transport of dry excavated materials & spoils.

1. Preparation

   Utilize truck with proper containment of materials

   Determine disposal site of excavated materials

   Install BMP's if necessary for operations.

2. Process

   Load truck with materials

   Check truck after loading for possible spillage. Clean up when loading operations complete for the day.

   Cover truck with tarp.

   Transport in manner to eliminate spillage & tracking.

   Utilize one route for transporting.

3. Clean-up

   Clean loading area.

   Wash off truck and other equipment at approved wash location.

4. Documentation

   Document beginning of work, completion of work and any cleanup items performed on site.

WATER – Transporting Wet Excavated Materials & Spoils

Description: This section contains information for proper transport of wet excavated materials that may have environmental contaminants.

Applicability: Transport of wet excavated materials & spoils.

1. Preparation

   Utilize truck with containment for material.

   Determine disposal site of excavated material.

   Dry materials prior to transporting if possible.

   Install BMP's if necessary for operations.

2. Process

   Load and Transport in manner to minimize spillage & tracking of material

   Check truck for spillage.

   Cover load with tarp.

   Utilize one route of transport

3. Clean-up

   Clean route of transport to provide cleaning of any spilled material

   Wash out equipment truck and other equipment

4. Documentation: None.

Water – **Waterline Flushing for Routine Maintenance**

Description: This section contains information for proper waterline flushing, protection of inlet structures, and maintaining a clean flow path for waterway.

Applicability: Waterline flushing for routine maintenance.

1. Preparation

   Determine flow path of discharge to inlet of waterway.

   Obtain discharge permit if necessary from State of Utah.

   Neutralize chlorine residual if necessary.

2. Process

   Clean flow path.

   Protect inlet structures.

   Use diffuser to dissipate pressure to reduce erosion possibilities

3. Clean-up

   Clean flow path

   Remove inlet protection if installed.

4. Documentation

   Document beginning of work, completion of work and any cleanup items performed on site.

   Residual tests of discharge water

WATER – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain

Description: This section contains information for proper waterline flushing, protection of inlet structures, and maintaining a clean flow path for waterway after a construction project or system disinfection with discharge to storm drain.

Applicability: Waterline flushing after construction projects or after system disinfection.

1. Preparation

   Determine chlorine content of discharged water. Utilize de-chlorination equipment if necessary.

   Determine flow path of discharge.

   Obtain discharge permit if necessary.

2. Process

   Protect inlets in flow path.

   Sweep and clean flow path.

   Use diffuser to reduce velocities.

3. Clean-up

   Remove inlet protection.

   Clean flow paths.

   Remove equipment from flush point.

4. Documentation

   Document beginning of work, completion of work and any cleanup items performed on site.

WATER – Waterline Flushing after Construction/System Disinfection with Discharge with Haul Off (Used for Dust Control/Compaction)

Description: This section contains information for proper waterline flushing and the hauling off of the discharged water in a tanker to use for dust control and compaction

Applicability: Waterline flushing after construction projects or after system disinfection.

1. Preparation

   Determine chlorine content of discharged water.

   Neutralize chlorine content.

   Determine appropriate construction activity for treatment.

   Provide backflow prevention device.

2. Process

   Flush to tanker.

   Conform that application of water is in appropriate location.

   Conform to BMP's at the construction site to prevent tracking.

3. Clean-up

   Remove equipment from flush point.

4. Documentation

   None

Document beginning of work, completion of work and any cleanup items performed on s– Chemical Handling/Transporting and Spill Response

Description: This section contains information for transporting or handling of chemicals and actions that need to be taken when a chemical spill occurs.

Applicability: Transporting or handling of chemicals and possible spill of contaminates.

1. Preparation

    Understand MSDS streets for handling of product.

    Determine proper place of handling.

    Have necessary containment and spill kits at handling place.

2. Process

    Begin transfer process.

    Discontinue operations if spill levels occur.

    Disconnect and store handling equipment.

3. Clean-up

    Clean up spills with proper material

    Dispose of contaminated material at appropriate facility

4. Documentation

    Report spills to Bear River Health

WATER - Swimming Pools and Spas Discharge to Stormwatcr System

Description: This section contains information and guidelines for the draining of swimming pools and spas into the storm drain or sanitary sewer systems.

Applicability: Pool and Spa draining into stormwater or sanitary sewer systems.

Note: Pool owners may discharge their pool water and filter backwash water to the sanitary sewer. There are no limitations on chlorine content or pH levels for discharges to the sanitary sewer. It is also acceptable to discharge to the sanitary sewer if the water is cloudy discolored, or contains algae. The pool owner should contact Public Works prior to discharging water from any pool or spa regardless of where they plan to discharge the water - sanitary sewer, onto the ground, or in a manner such that it enters the storm water system. After approval has been given by the public works department, swimming pool water may be discharged into the sanitary sewer system or the storm water system. The city must ensure the sewer system can accommodate the additional swimming pool water discharge. There may be a fee associated with discharging pool or spa water into the sanitary sewer.

1. Preparation

   With the help of Public Works officials determine the best place to discharge the water from the pool/spa.

   A pool or spa may be emptied onto the ground or into the storm water system if the chlorine content is less than one part per million and free of other chemicals.

   The pH level of the water must be tested prior to discharge and must fall within a range of 7 to 8.

   The water must not be cloudy or discolored and must be free of algae or other contaminants.

   Do a visual inspection of the pathway the water will take to ensure contaminants, trash, or soils or other sediments will not be washed into the storm water system. Clean as needed.

2. Process

   Clean, as needed, any storm water structure that will be used to convey the water into and through the storm water system.

   Drain the pool or spa to the location determined by Public Works officials using the pool system's pumps or by gravity.

   Carefully watch the draining process at all times to ensure the water flow is going as planned and does not overload the system.

   Water being discharged may not cause erosion and may not go unto a neighbor's property without their express written permission.

3. Clean-up

   Keep logs of pools and spas drained.

   Record the amount of water drained and where the water was drained to.

   Keep any notes or comments of any problems.

(End of SOP's)

Table of Contents

BMP: Aboveground Tank Leak And Spill Control

ATL

APPLICATIONS

- ☒ Manufacturing
- ☒ Material Handling
- ☐ Vehicle Maintenance
- ☐ Construction
- ☒ Commercial Activities
- ☒ Roadways
- ☒ Waste Containment
- ☐ Housekeeping Practices

DESCRIPTION:

Prevent or reduce the discharge of pollutants to stormwater from aboveground storage tanks by installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

The most common causes of unintentional releases are:

- Installation problems,
- Failure of piping systems (pipes, pumps, couplings, hoses, and valves),
- External corrosion and structural failure,
- Spills and overfills due to operator error, and
- Leaks during pumping of liquids or gases from truck to a storage tank or vice versa.

APPROACH:

- Integrate efforts with existing aboveground petroleum storage tank programs through the local Fire Department and Health Department, and area and business emergency response plans through the City, County, or Fire District.
- Use engineering safeguards to reduce the chance for spills.
- Perform regular maintenance.

LIMITATIONS:

For larger spills, a private spill clean-up company or Hazmat team may be necessary.

MAINTENANCE:

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure,
- Check for spills and overfills due to operator error,
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves),
- Check for leaks or spills during pumping of liquids or gases from truck to storage facility or vice versa.

TARGETED POLLUTANTS

- ☐ Sediment
- ☒ Nutrients
- ☒ Heavy Metals
- ■ Toxic Materials
- ☒ Oxygen Demanding Substances
- ■ Oil & Grease
- ☐ Floatable Materials
- ☐ Bacteria & Viruses

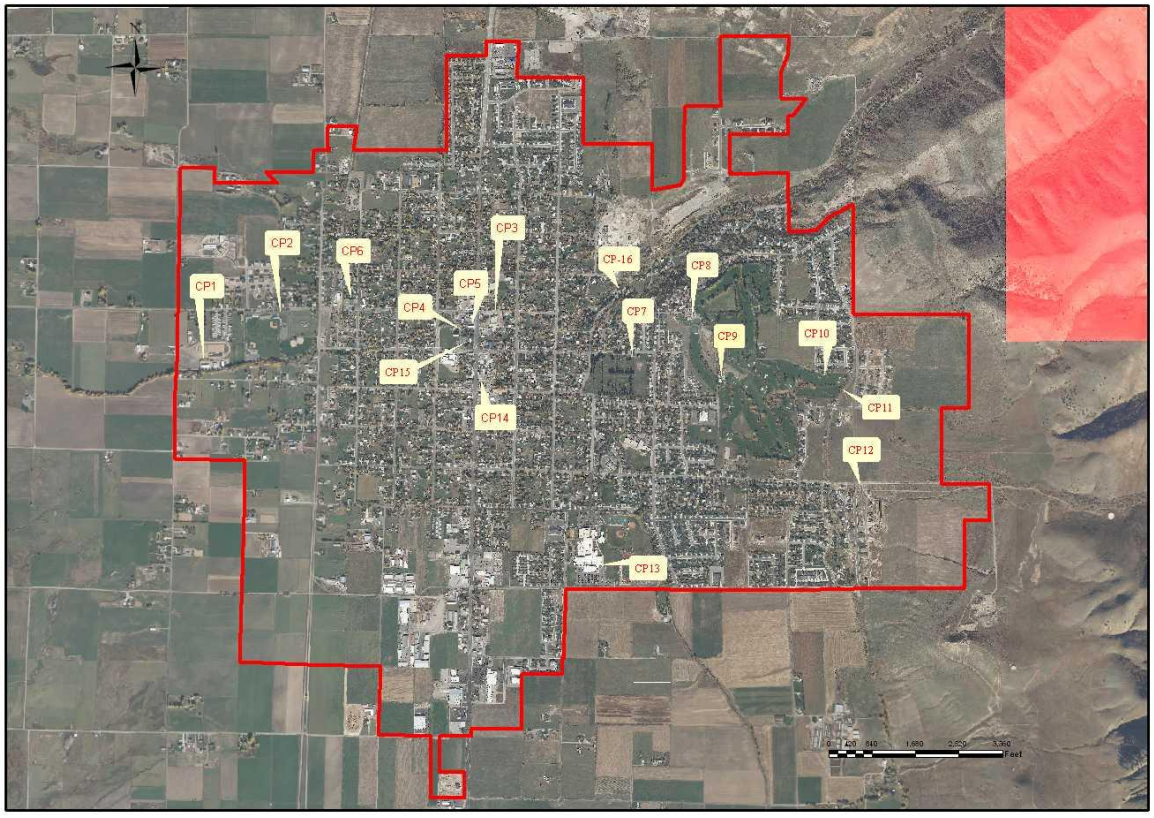
- ■ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☐ Maintenance
- ■ Training

■ High ☒ Medium ☐ Low

PERMITEE OWNED PROPERTY



Legend

Smithfield City Limits

CP = Permitee Property 4.2.6.4.1
FD = Floor Drain
SS = Sanitary Sewer
ST = Septic Tank

CP1-City Shop/ FD Goes TO SS
CP2-Blue Sox/ FD goes to SS
CP3-Armory/ goes to SS
CP4-Youth Center/ FD goes to SS
CP5-Storage FD goes to SS
CP6-Fire Station /FD goes to SS
CP7-Cemetery Shop/ FD goes to SS
CP8-Golf Pro-Shop / FD goes to SS
CP9-Golf Shop / FD goes to SS
CP10-Pump House/ FD goes to ?
CP11-#5 Bathroom / FD goes to ST
CP12-Booster Station /FD goes to SS
CP13-Rec. Center / FD goes to SS
CP14-New Office / FD goes to SS
CP15-Library / FD goes to SS
CP16-Senior Center/ FD goes to ?

Permittee-Owned Facilities Evaluation Form

MS4 Name:_Smithfield City____ Date of Evaluation:___Nov. 18,2010_____

Section 4.2.6.3 requires that the "Permittee must identify as "high-priority" those facilities or operations that have a high potential to generate storm water pollutants." Weekly inspections are required (4.2.6.6.1), and Storm Water discharge must be evaluated quarterly at these high priority locations (4.2.6.6.3)

Facility #:___SP#1___ Location:__53 S 800 W__ Description:____City Shop ____ Elev (FASL)__4514__ Determination: __High Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Grass
Amount (#)	2000#	400	5#	0	10#	200 #	1500 #	0	10 #
Exterior Use (Y/N)	Y	N	N	N/A	N	N	N	N/A	Y
Proximity to Water (ft)	200	180	150	N/A	150	125	100	N/A	100
House keeping effectiveness(%)	100	100	100	N/A	100	100	65	N/A	90
Discharge to impaired waters(Y/N)	N	N	N	N/A	N	N	N	N/A	N

Facility #:___SP#2___ Location:__530W 100 N__ Description:____Lions Concessio Elev (FASL)__4538__ Determination: __Low_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	Trace	100 #	Yes	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	Y	Y	N	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	500	500	500	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	100	100	90	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N	N	N	

Facility #:___SP#3___ Location:__50 E 100 N__ Description:____Armory___ Elev (FASL)__4609__ Determination: __Low_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	600 #	0	0	10 #	20 #	Trace	
Exterior Use (Y/N)	N/A	N/A	N	N/A	N/A	N	N	N	
Proximity to Water (ft)	N/A	N/A	50	N/A	N/A	80	80	50	
House keeping effectiveness(%)	N/A	N/A	100	N/A	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N	N/A	N/A	N	N	N	

Facility #:___SP#4___ Location:__92 N Main__ Description:____Youth Center__ Elev (FASL)__4598__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	N	Nutrients	N	0	N	Trace	Y	Trace	
Exterior Use (Y/N)	N/A	N	N/A	N/A	N/A	N	Y	N	
Proximity to Water (ft)	N/A	250	N/A	N/A	N/A	250	250	250	
House keeping effectiveness(%)	N/A	100	N/A	N/A	N/A	100	99	100	
Discharge to impaired waters(Y/N)	N/A	N	N/A	N/A	N/A	N	N	N	

Permittee-Owned Facilities Evaluation Form

MS4 Name:_Smithfield City____ Date of Evaluation:___Nov. 18,2010_____

Section 4.2.6.3 requires that the "Permittee must identify as "high-priority" those facilities or operations that have a high potential to generate storm water pollutants." Weekly inspections are required (4.2.6.6.1), and Storm Water dischargemust be evaluated quarterly at these high priority locations (4.2.6.6.3)

Facility #:___SP#5___ Location:__96 N Main__ Description:____Old Office/Storag Elev (FASL)__4602__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	Trace	0	0	Trace	0	0	
Exterior Use (Y/N)	N/A	N/A	N	N/A	N/A	N	N/A	N/A	
Proximity to Water (ft)	N/A	N/A	20	N/A	N/A	25	N/A	N/A	
House keeping effectiveness(%)	N/A	N/A	100	N/A	N/A	100	N/A	N/A	
Discharge to impaired waters(Y/N)	N/A	N/A	N	N/A	N/A	?	N/A	N/A	

Facility #:___SP#6___ Location:__325 W 100 N__ Description:____FireStation____ Elev (FASL)__4559__ Determination: _Med. Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	Trace	Trace	Trace	0	N	Trace	25#	Trace	
Exterior Use (Y/N)	N	N	N	N/A	N/A	N	N	N	
Proximity to Water (ft)	1000	1000	1000	N/A	N/A	1000	1000	1000	
House keeping effectiveness(%)	100	100	100	N/A	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N	N	N	N/A	N/A	N	N	N	

Facility #:___SP#7___ Location:400 E Center St__ Description:__Cemetery Shop__ Elev (FASL)__4678__ Determination: __Med. Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	500	150	Trace	0	10	Trace	10	Trace	
Exterior Use (Y/N)	Y	Y	Y	N/A	Y	N	N	Y	
Proximity to Water (ft)	1400	1400	1400	N/A	1400	1400	1400	1400	
House keeping effectiveness(%)	100	100	100	N/A	100	100	100	100	
Discharge to impaired waters(Y/N)	N	N	N	N/A	N	N	N	N	

Facility #:___SP#8___ Location:__550 E 100 N__ Description:____Pro Shop____ Elev (FASL)__4768__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbo	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	Trace	25	Trace	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	3000	3000	3000	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N	N	N	

Permittee-Owned Facilities Evaluation Form

MS4 Name:_Smithfield City____ Date of Evaluation:___Nov. 19,2010_____

Section 4.2.6.3 requires that the "Permittee must identify as "high-priority" those facilities or operations that have a high potential to generate storm water pollutants." Weekly inspections are required (4.2.6.6.1), and Storm Water dischargemust be evaluated quarterly at these high priority locations (4.2.6.6.3)

Facility #:___SP#9___ Location:__640 E 160 S__ Description:____Golf Shop____ Elev (FASL)__4711__ Determination: __High Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	100	50	Trace	0	50	Trace	100	Trace	
Exterior Use (Y/N)	Y	Y	N	N/A	Y	N	N	N	
Proximity to Water (ft)	2500	2500	2500	N/A	2500	2500	2500	2500	
House keeping effectiveness(%)	100	100	100	N/A	100	100	100	100	
Discharge to impaired waters(Y/N)	N	N	N	N/A	N	N	N	N	

Facility #:___SP#10___ Location:__30 S 880 E__ Description:____Pump House____ Elev (FASL)__4798__ Determination: _Med. Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	Trace	Trace	Trace	Trace	N	Trace	25#	Trace	
Exterior Use (Y/N)	N	N	N	N	N/A	N	N	N	
Proximity to Water (ft)	1000	1000	1000	1000	N/A	1000	1000	1000	
House keeping effectiveness(%)	100	100	100	100	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N	N	N	N	N/A	N	N	N	

Facility #:___SP#11__ Location:Birch Creek Hole #5 Description:__Bathroom_ Elev (FASL)__4810__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	0	5	Trace	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	N/A	100	100	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	N/A	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N	

Facility #:___SP#12___ Location:__325 S 1000 E__ Description:____Booster Station____ Elev (FASL)__4850__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	Trace	0	0	0	0	0	
Exterior Use (Y/N)	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	
Proximity to Water (ft)	N/A	N/A	650	N/A	N/A	N/A	N/A	N/A	
House keeping effectiveness(%)	N/A	N/A	100	N/A	N/A	N/A	N/A	N/A	
Discharge to impaired waters(Y/N)	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	

Permittee-Owned Facilities Evaluation Form

MS4 Name:_Smithfield City____ Date of Evaluation:___Nov. 19,2010_____

Section 4.2.6.3 requires that the "Permittee must identify as "high-priority" those facilities or operations that have a high potential to generate storm water pollutants." Weekly inspections are required (4.2.6.6.1), and Storm Water dischargemust be evaluated quarterly at these high priority locations (4.2.6.6.3)

Facility #:___SP#13___ Location:__520 S 250 E__ Description:____Rec Center____ Elev (FASL)__4588__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	Trace	0	0	Trace	100	Trace	
Exterior Use (Y/N)	N/A	N/A	N	N/A	N/A	N	N	N	
Proximity to Water (ft)	N/A	N/A	700	N/A	N/A	700	700	700	
House keeping effectiveness(%)	N/A	N/A	100	N/A	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N	N/A	N/A	N	N	N	

Facility #:___SP#14___ Location:__96 S Main__ Description:____City Office____ Elev (FASL)__4606__ Determination: _Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	0	250 #	Trace	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	N/A	150	150	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	N/A	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N	

Facility #:___SP#15__ Location:___55 N Main__ Description:__Library___ Elev (FASL)__4602__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	0	5	0	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	N/A	100	N/A	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	N/A	100	N/A	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	

Facility #:___SP#16___ Location:__189 Canyon Rd_ Description:____Senior Center____ Elev (FASL)__4672__ Determination: __Low Priority_

	Sediments	Nutrients	Metals	Hydrocarbons	Pesticides	Chlorides	Trash	Bacteria	Other
Amount (#)	0	0	0	0	0	Trace	150	Trace	
Exterior Use (Y/N)	N/A	N/A	N/A	N/A	N/A	N	Y	N	
Proximity to Water (ft)	N/A	N/A	N/A	N/A	N/A	70	70	70	
House keeping effectiveness(%)	N/A	N/A	N/A	N/A	N/A	100	100	100	
Discharge to impaired waters(Y/N)	N/A	N/A	N/A	N/A	N/A	N	N	N	

HYDROCARBONS DEFINITION

Benzene is an organic chemical compound with the molecular formula C_6H_6. It is sometimes abbreviated Ph–H. Benzene is a colorless and highly flammable liquid with a sweet smell and a relatively high melting point. Because it is a known carcinogen, its use as an additive in gasoline is now limited, but it is an important industrial solvent and precursor in the production of drugs, plastics, synthetic rubber, and dyes. Benzene is a natural constituent of crude oil, and may be synthesized from other compounds present in petroleum. Benzene is an aromatic hydrocarbon and the second [*n*]-annulene ([6]-annulene), a cyclic hydrocarbon with a continuous pi bond. It is also related to the functional group arene which is a generalized structure of benzene.

Toluene, formerly known as **toluol**, is a clear, water-insoluble liquid with the typical smell of paint thinners. Chemically it is a mono-substituted benzene derivative, i.e. one in which a single hydrogen atom from the benzene molecule has been replaced by a univalent group, in this case CH_3.

It is an aromatic hydrocarbon that is widely used as an industrial feedstock and as a solvent. Like other solvents, toluene is sometimes also used as an inhalant drug for its intoxicating properties; however, this can potentially cause severe neurological harm.[1][2]

Ethylbenzene is an organic compound with the formula $C_6H_5CH_2CH_3$. This aromatic hydrocarbon is important in the petrochemical industry as an intermediate in the production of styrene, which in turn is used for making polystyrene, a common plastic material. Although often present in small amounts in crude oil, ethylbenzene is produced in bulk quantities by combining benzene and ethylene in an acid-catalyzed chemical reaction:$C_6H_6 + C_2H_4 \rightarrow C_6H_5CH_2CH_3$

Approximately 24,700,000 tons were produced in 1999.[1] Catalytic dehydrogenation of the ethylbenzene then gives hydrogen and styrene:

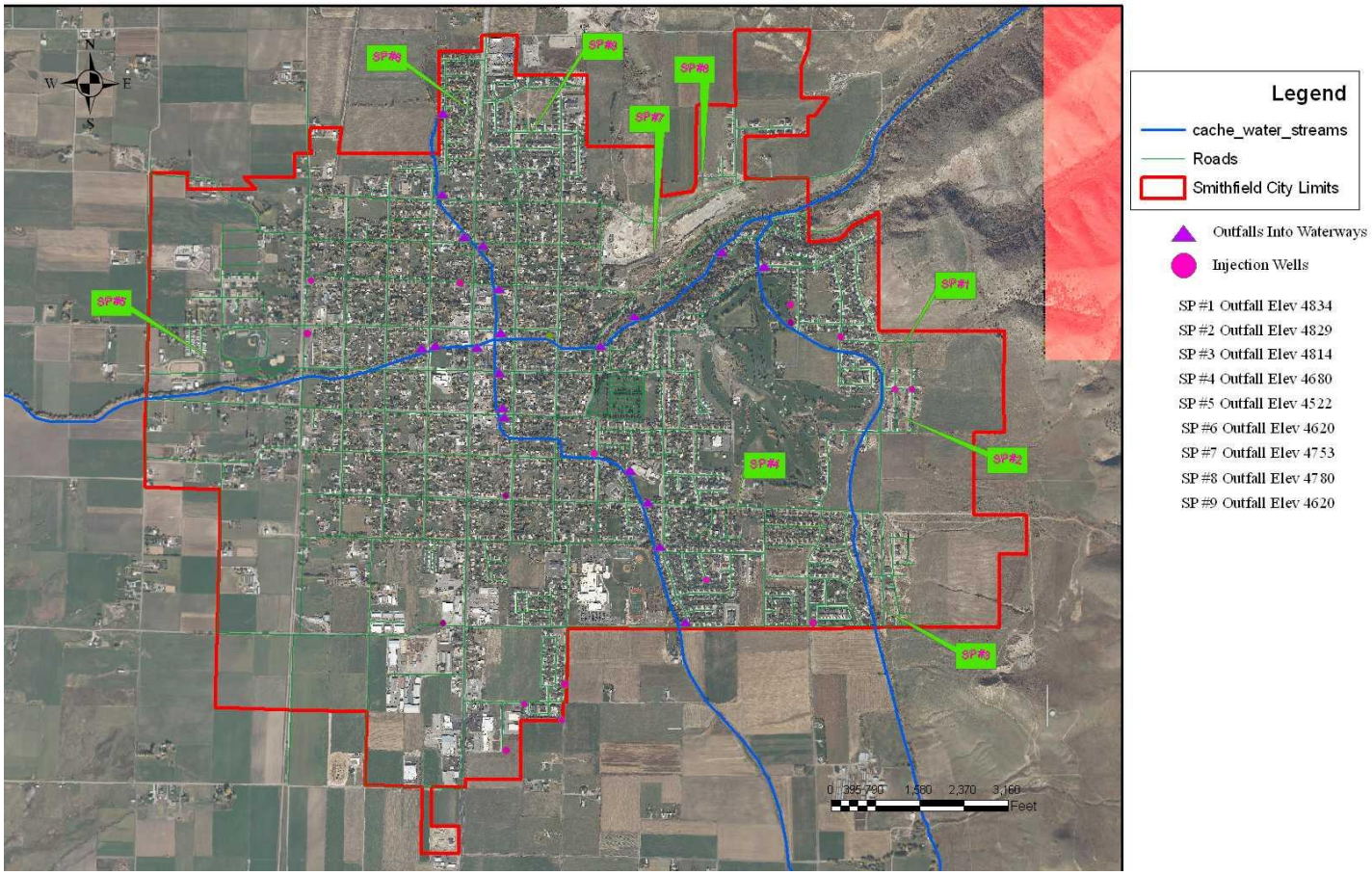
$$C_6H_5CH_2CH_3 \rightarrow C_6H_5CH{=}CH_2 + H_2$$

It has been used as a solvent for aluminum bromide in the anhydrous electrodeposition of aluminum. Ethylbenzene is also an ingredient in some paints, and solvent grade xylene (xylol) is nearly always contaminated with a few percent of ethylbenzene

The term **xylene** or **xylol** refers to a mixture of three structural isomers of the aromatic hydrocarbon dimethylbenzene. Xylene is a clear, colorless, sweet-smelling liquid that is very flammable. It is usually refined from crude oil in a process called alkylation. It is also produced as a by-product from coal carbonisation derived from coke ovens, extracted from crude benzole from gas, or by dehydrocyclodimerization and methylating of toluene and benzene.[1] It is also manufactured from reformate.

Xylene is used as a solvent in the printing, rubber, and leather industries. Xylene is also abused as an inhalant drug for its intoxicating properties.[*citation needed*]

Permittee Maintained Structures



Appendix C

IDDE Program

* IDDE Procedure
* Flow Chart
* Spill Response Report Form
* Hotline Call-in Response Procedure

Spill Response Plan (S.O.P)

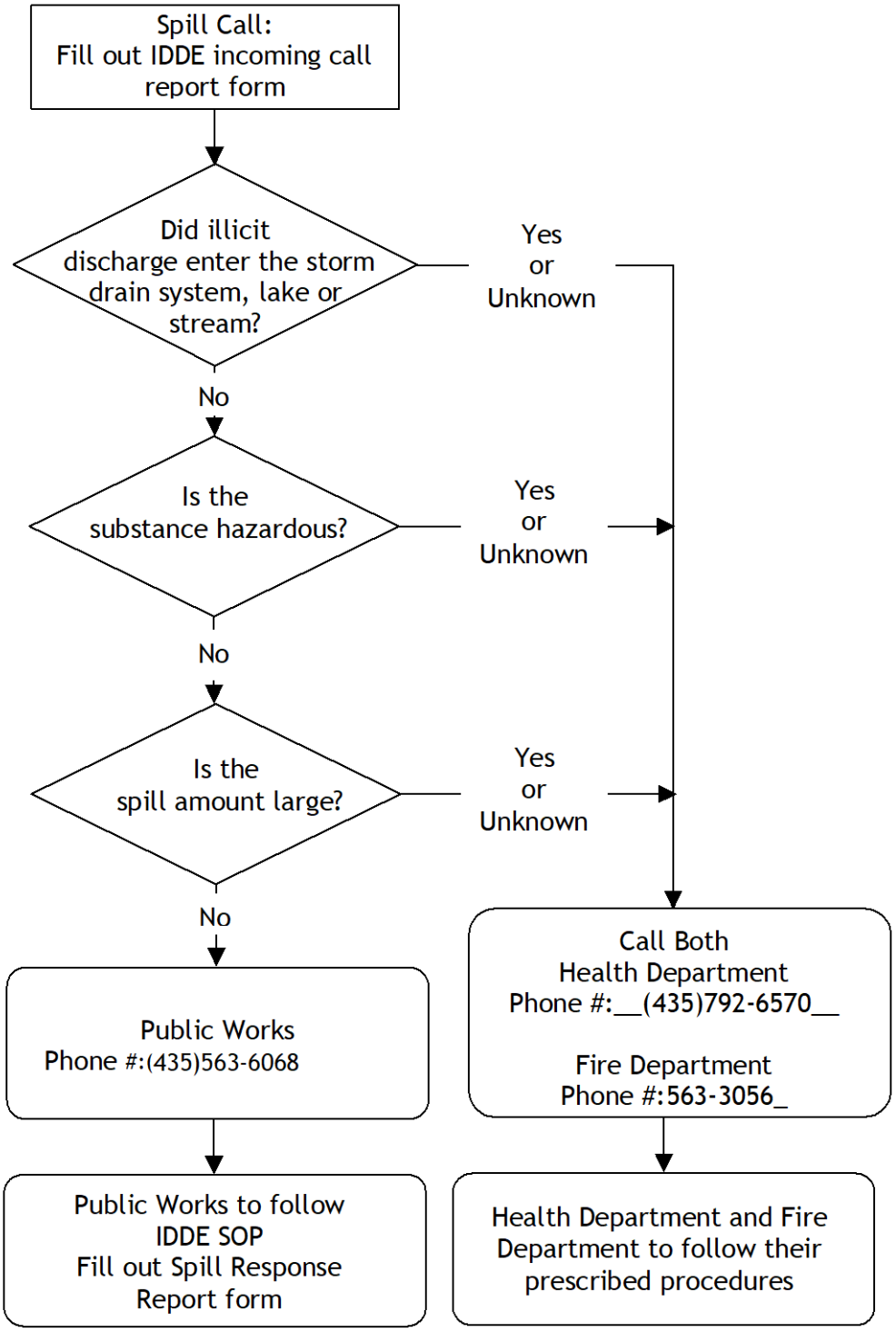
Follow these steps if a spill occurs:

1. **Stop source**
2. **Contain Spill**
3. **Call Supervisor**
4. **Identify substance**
5. **Quantify spill**
6. **Did spill leave the site?**
7. **Call Bear River Health Department (435 - 792 -6570)**
8. **Call State Environmental Emergency Response (801- 536-4123)**
9. **Clean up & dispose**
10. **Document**

    (Use Spill Response Report from SWPPP Appendix C)

INCIDENT RESPONSE FLOW CHART

SMITHFIELD CITY



SPILL RESPONSE REPORT FORM

(For Public Works Crew)

Date of Spill_____ Time _____ Duration_____

Chemical name or identity of any substance involved in the release _____

_____

Is it a hazardous substance? _____

Estimate of Quantity Spilled_____

Who Responded? _____

Cleaning Method Used_____

_____

Any Discharge to Storm Drain? _____

_____

Any known or anticipated acute or chronic health risks for exposed individuals associated with the emergency spill:

_____

_____

_____

Where proper precautions taken, including evacuation, if necessary? _____

_____

Was Spill Reported to the State? Yes No

IDDE INCOMING CALL REPORT FORM

(For Phone Operator)

Date of Illicit Discharge_____ Time _____ Duration_____

Address of Discharge _____

Name of person discharging (If applicable) _____

Name & phone number of person making the call _____

Chemical name or identity of any substance involved in the release _____

_____

Is substance hazardous? _____

Estimate of Quantity Spilled? _____

Did the illicit discharge enter a waterbody? (Lake or Stream)

_____

_____

Did the illicit discharge enter the storm drain system? (Manhole or storm drain pipe) Yes

No Any known or anticipated acute or chronic health risks for exposed individuals associated with the emergency spill:

_____

_____

See Illicit Discharge determination form

Appendix D

Documentation

* Inspection Checklist
* Training Schedule
* Training Log
* Visual Inspection
* The Storm Water Inspector has a bound Enforcement Journal

SWPPP Inspection Checklist

Pre-inspection Items

- ☐ Contact Site Superintendant or Project Manager
- ☐ Review previous inspections – are there reoccurring problems?
- ☐ Proper equipment
  - Hard hat
  - Vest
  - Safety shoes
  - Safety glasses
  - Camera
  - GPS unit?
  - Inspector credentials

On-Site before inspecting

- ☐ Review SWPPP – updates and changes
- ☐ Review any specific concerns
- ☐ Check contractors inspection forms/issues

Inspection

- ☐ Use State Form – keep notes
- ☐ Check outfalls
- ☐ Check perimeter control
- ☐ Check entrances/exits
- ☐ Check erosion control BMPs
- ☐ Check sediment control BMPs
- ☐ Check for mud tracking
- ☐ Check stockpile/storage areas
- ☐ Check staging areas
- ☐ Take photos of good and bad
- ☐ Keep photo log
- ☐ Review findings with superintendant/project manager

Post Inspection

- ☐ Review form, complete and clarify as needed
- ☐ File inspection form and photos
- ☐ Send copy of form to State – can be done monthly

TRAINING SCHEDULE

Training Topic	Who	How Often	Paragraph
-Low impact development -Green infrastructure -Post construction practices -BMP's chose in the swmp	-MS4 Engineers -Development and plan review staff, -Land use planners -Others	Not specified	4.2.1.6
IDDE Program -Identification -Investigation -Termination -Cleanup -Reporting -How to identify a spill -Improper disposal	-All field staff -Office personnel	Annually	4.2.3.11
-Implementing a construction storm water program -Permitting -Plan review -Construction site inspections -Enforcement	Staff with following responsibilities: -Implementing the construction storm water program -Permitting -Plan review -Construction site inspections -Enforcement -Third party inspectors	Not specified	4.2.4.5
Fundamentals of long-term storm water management through the use of structure and non-structural BMPs.	All staff involve -In post-construction storm water management -Planning and review -Inspections and enforcement	Not specified	4.2.5.6
Preventing or reducing pollutant runoff from all Permittee owned or operated facilities	-All staff	Not specified	4.2.6
Use, storage, and disposal of chemicals	-Those responsible for handling chemicals	Not specified	4.2.6.4.1
-Importance of protecting water quality -Requirements of SWMP permit -Operation and maintenance requirements -inspection procedures, -Ways to perform their job activities to prevent or minimize impacts to water quality -SOP's for the various Permittee-owned facilities -Procedures for reporting water quality concerns; including potential illicit discharges -Changes in procedures	All employees who have primary construction, operation, or maintenance job functions that are likely to impact storm water quality	Not specified	4.2.6.9
Illicit Discharge/Waste Disposal - Equipment inspection - Storage of industrial materials - Disposal of waste - Management of dumpsters - Minimizing Salt/De-icing - On-site infiltration - Maintenance of parking lots	Employees of owned or operated facilities	Not specified	4.2.1.5

Training Log

Date of Training	Description of Training	Signature

WEEKLY VISUAL INSPECTION SOP

PREPARATION

- Identify "High Priority" facilities
- Map of location
- Become familiar with potential pollutants at the site

PROCESS

- Look for evidence of spills at the site
- If a spill is found assess the general area to identify its source
- Whenever possible take photographs of the suspected illicit discharge

CLEAN-UP

- Clean up spill immediately to prevent contact with precipitation or runoff
- Initiate spill response

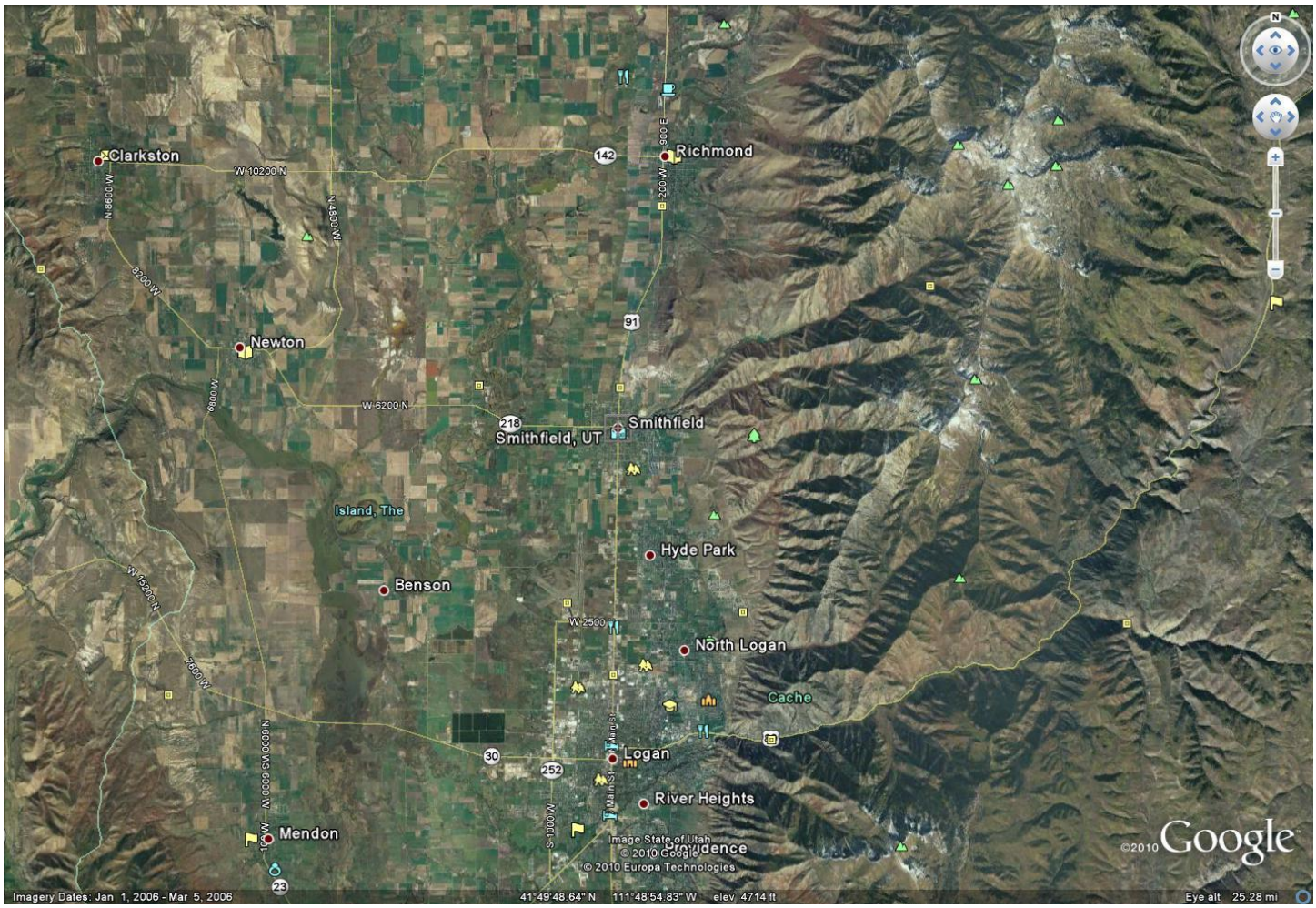
DOCUMENTATION

- Fill out Weekly High Priority Inspection Log for facility and mark that the weekly inspection has been completed
- If a deficiency was found make note on the Weekly High Priority Inspection Log and fill out the Note Log for that particular facility

Appendix E

Maps

* Location of Smithfield City
* Collection System (Storm Drain Divided Areas)



Storm Water
SMITHFIELD CITY
A
B
C
D
E