

STORM WATER MANAGEMENT PLAN

for

FARR WEST CITY CORPORATION

November 2010

prepared by

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STORM WATER MANAGEMENT PLAN

CHAPTER 1

INTRODUCTION

FARR WEST CITY - UTR090021 STORM WATER MANAGEMENT PLAN

Purpose

The purpose of the Storm Water Management Plan (SWMP) is to develop, implement, and enforce a plan designed to reduce the discharge of pollutants from the Municipal Separate Storm Sewer (MS4), protect water quality, and satisfy the appropriate water quality requirements of the *Utah Water Quality Act*. The development and implementation of the SWMP is to fulfill requirements under the State of Utah Small MS4 General UPDES Permit No. UTR090000 (hereafter referred to as the General Permit) in accordance with Section 402(p)(3)(B) of the *Federal Clean Water Act*, and the State of Utah Storm Water Regulations (UAC R317-8-3.8). Farr West City is a Renewal Permittee and is required to submit a revised SWMP document by December 1, 2010.

This General Permit applies to cities with populations less than 100,000 located within or partially within, an urbanized area and that operate a MS4 which discharges to a water of the State of Utah. Urbanized areas are defined as population centers with greater than 50,000 people and densities of at least 1,000 people per square mile, and are based on the 2000 census. For future permits, the urbanized area will be based on the most recent federal census. Farr West City falls under this requirement by way of being located in Weber County.

Responsible Person(s)

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SWMP Documentation, Review, and Modification

Section 4.1.2 of the General Permit states “Within 90 days after the coverage from this permit is granted, each Permittee shall have an ongoing documentation 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.” In an effort to comply with this requirement the City maintains a storm water map which shows all the existing piping and conveyance structures. This map will be updated yearly with the city engineers to show all new piping, conveyance structures, locations of illicit discharges, outfall locations, and any other relevant information that can be used to ensure permit compliance. The City also uses several documents to track inspections required for permit compliance. These inspection forms and all other documentation used to show permit compliance will be kept in one central location, either in hard-copy files or electronically, where all employees can access them. All documentation will be kept for the entire permit term (five years).

This SWMP includes the Best Management Practices (BMPs), and measurable goals intended to reduce the quantity of storm water and the discharge of pollutants to the storm water system. The SWMP will be reviewed, at a minimum, on an annual basis and any changes or modifications will be described and submitted to the State Division of Water Quality as part of the Annual Report. This review will include the following:

- A review of the status of program implementation and compliance
- A review of any revision or change of BMPs during the year and an assessment of the effectiveness of such revision
- A review of all documentation collected including; number and type of inspections performed, official enforcement actions taken, and types of public education activities implemented
- An overall assessment of the goals and direction of the SWMP and effectiveness of BMPs
- A review of questions asked on the Annual Report and address deficient areas as part of the SWMP
- A review of the capital and operating and maintenance expenses and a determination of funds needed to comply with this requirement of the *Clean Water Act*

Changes adding (but not subtracting or replacing) components, controls, or requirements to the SWMP document may be made at any time upon written notification to the State Division of Water Quality. Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP document with an alternate BMP may be adopted any time, provided the analysis is clearly outlined and subsequently approved by the Division. Further procedures for removing or replacing an ineffective or unfeasible BMP can be found in section 4.4 of the General Permit if the situation arises.

Staffing and Resource Allocations

Management and oversight of the Storm Water Management Plan is funded by the City's Storm Sewer Utility and in some instances by the General Fund. The City is working in conjunction with two other parties for portions of the implementation of the Storm Water Management Plan: the Weber County Storm Water Coalition and the Weber-Morgan Health Department. Farr West City funds a portion of the Storm Water Coalition's expenses in exchange for educational supplies and community informational materials. The Weber-Morgan Health Department responds to complaints regarding spills and illegal discharges and follows up on the complaints with tracking and enforcement.

Within the City many staff will contribute toward meeting permit requirements. Currently, the Storm Water Management Plan is primarily the responsibility of the Public Works Department. In order for the Plan to be successful support is needed and provided by all City staff. Section 4.1.2.2 of the General Permit states that "Each Permittee must secure the resources necessary to meet all requirements of this permit. Each Permittee must conduct an annual analysis of the capital and operation and maintenance expenditures needed, allocated, and spent as well as the necessary staff resources needed and allocated to meet the requirements of this permit, including any development, implementation, and enforcement activities required. Each Permittee must submit a summary of its fiscal analysis with each annual report." City Administrators and the

City Council are primarily responsible for meeting the financial obligations required to make the Storm Water Management Plan successful.

System Overview

Farr West City is located on the north end of Weber County. The population of the community was 3,094 at the 2000 census. The majority of the land use in the community is residential and agricultural with some commercial. The City was first settled in 1858 and was incorporated in 1981. The City has a total area of 5.8 square miles. A USGS map showing the City is shown at the end of this section.

The storm drain system is composed of pipes, detention basins, ditches and canals. The Willard Canal runs through the middle of the City, the Western Canal runs down the east side of the City, and Six Mile Creek runs along the south side of the City. The overall concerns, priorities, and goals of the City and this SWMP document are to protect the water quality of the streams, canals, and other water bodies in and around the City.

Existing Program Summary

Farr West City is currently implementing and participating in several storm water programs that are designed to reduce pollution, including:

- **Public Education and Outreach**
 - Weber County Storm Water Coalition participation
 - Educational material such as: newsletters, pamphlets, curb markers, etc.
 - Water Fair
 - Training for public works employees and contractors
 - TV advertisements
- **Public Involvement and Participation**
 - Storm drain inlet labeling projects
 - Community cleanup projects
 - Public is given opportunity to provide input before ordinances, resolutions or plans impacting storm water are adopted in City Council Meetings.
- **Illicit Discharge Detection and Elimination**
 - Storm drain system map is kept in order to track illicit discharges and improper disposals
 - An ordinance has been adopted prohibiting illicit discharges and defining penalties for violations.
- **Construction Site Storm water Runoff Control**
 - Construction site runoff ordinance and land disturbance guidelines for sites greater than one acre are in place
 - Site plan review and permitting process for sites greater than one acre are performed

- Post Construction Storm water Management
 - Specification that requires a maximum outlet rate of 0.1 cfs/acre in order to match pre-development hydrology
 - Ordinance that gives the MS4 authority to inspect storm water projects and controls, at all reasonable times, for storm water compliance

- Pollution Prevention and Good Housekeeping
 - Street sweeping program in place
 - Salt pile management
 - Storm drain system maintenance program

The SWMP has been developed to meet the terms of the UPDES permit and consists of six minimum control measures established by EPA for Phase II storm water discharges, as well as meeting the special storm water needs within the City. Implementation of these control measures are expected to result in a reduction of pollutants discharged into receiving water bodies. These control measures are addressed in separate chapters.

Each control measure contains tasks, measurable goals, and BMPs necessary for proper storm water management. The measurable goals contain specific tasks for meeting the objective of that control measure. The measurable goals are mandated by the EPA and a community must be showing improvement over time with these goals. This SWMP is intended to be a living document with tasks, goals, and BMPs added and deleted as new management practices arise and other management practices are found to be ineffective.

Minimum Control Measures (MCM'S)

The following six chapters of this document cover the Minimum Control Measures established by the EPA. All municipalities must address these measures. The six minimum Control Measures are as follows:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Storm Water Runoff Control
5. Post Construction Storm Water Management
6. Pollution Prevention and Good House Keeping for Municipal Operation

Each MCM is discussed in the order given with the associated tasks, measurable goals, BMPs, required resources, and the estimated implementation schedule. Much of the introductory information for each Minimum Control Measure has been gathered from the EPAs Stormwater Phase II Final Rule Fact Sheet Series which is an excellent resource for small MS4 operators.

The fact sheets can be found at the following website:

<http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm>.

Insert USGS map of City

STORM WATER MANAGEMENT PLAN

CHAPTER 2

PUBLIC EDUCATION AND OUTREACH

PUBLIC EDUCATION AND OUTREACH

The Public Education and Outreach program addresses increasing public and professional awareness of water quality concerns and BMPs that may be implemented with respect to protection of the storm water within Farr West City. These education and outreach training programs will introduce the UPDES program and focus on known contaminant sources and control of these sources.

An informed and knowledgeable community is crucial to the success of a storm water management program since it helps to ensure the following:

- ***Greater support*** for the program as the public gains a greater understanding of the reasons why it is necessary and important. Public support is particularly beneficial when operators of small MS4s attempt to institute new funding initiatives for the program or seek volunteers to help implement the program.
- ***Greater compliance*** with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.

Three main actions areas are important for successful implementation of a public education and outreach program:

- ***Forming Partnerships*** - Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirements. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.
- ***Using Educational Materials and Strategies*** - Operators of regulated small MS4s may use storm water educational information provided by their State, EPA Region, or environmental, public interest, or trade organizations instead of developing their own materials. Operators should strive to make their materials and activities relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage. Some examples include: brochures or fact sheets, web sites, stickers, refrigerator magnets, posters, educational materials for community and school groups, educational programs for school-age children and storm drain stenciling.
- ***Reaching Diverse Audiences*** - The public education program should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities. Directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm

water impacts is also recommended. For example, information could be provided to auto garages on the effects of dumping used oil into storm drains.

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the operator and the area served by its small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. Finally, they should allow the MS4 to make improvements to its program over each 5-year permit term by providing data on program successes and shortfalls. For example, an MS4 could encourage “do-it-yourselfers” to recycle used motor oil by establishing and advertising a municipal drop-off center. The MS4 could measure progress toward this goal by tracking the amount of motor oil collected and correlating those data to the timing of public service announcements and other advertisements to see if their message is being received.

Public Education and Outreach Strategy

The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, target pollutant and audience, and responsible party as called for in the General Permit. The summary table is provided to meet the General Permit requirement 4.2.1.7.

PUBLIC EDUCATION AND OUTREACH								
TARGET AUDIENCE	(1) Residents (2) Businesses & Commercial Facilities (3) Developers & Contractors (4) City Staff							
TARGET POLLUTANTS	(7) Trash (8) Construction Site Waste (9) Septic Waste (10) Hydrocarbons (11) Automotive Fluids (12) Chlorinated Swimming Pool Water (13) Wash Water (14) Household Hazardous Waste (15) Illicit Discharges & Spills (16) Landscaping Materials (17) Fuels							
<p>Minimum Performance Measure 4.2.1.1 - Target specific pollutants and pollutant sources that impact or have the potential to impact the beneficial uses of receiving waters. Provide information which describes the potential impacts from storm water discharges. Provide methods for avoiding, minimizing, reducing, and/or eliminating the adverse impacts of storm water discharges. Provide actions individuals can take to improve water quality including participation in local environmental stewardship activities, based on land uses and target audiences found within the community.</p> <p>Minimum Performance Measure 4.2.1.2 – Provide and document information given to the general public of the Permittee’s prohibitions against and the water quality impacts associated with illicit discharges and improper disposal of waste. Provide information to the general public on maintenance of septic systems; effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers); 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 proper management of pet waste.</p>								
Activity/Product	Measureable Goals	Documentation	Target Pollutant	Target Audience	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
County Water Fair	Hold one event to educate school children each year	Coalition invoices and event advertisement	1-7,15	1,4	PEP	4 hours \$120	Annually	Storm Water Coalition & City

County to provide and City to direct the installation of curb markers on catch basins or replace old or worn out ones	Have all inlets in the City marked with readable curb markers	Coalition invoices and City documents showing installation dates and locations	1-17	1-4	SDSS IDC	8 hours \$240	June 2012/ Thereafter Annual Maintenance	Storm Water Coalition & City
Pay fees for TV spots in cooperation with Salt Lake County as part of fees paid to County	Pay for annually	Coalition invoice	1-17	1-4	PEP	1 hour \$300	Annually	County Storm Water Coalition and Salt Lake County
City website to address storm water impacts	Place information about storm water impacts on City website	Completed website. Keep a document that shows the number of website hits each year	1-17	1-4	PEP	40 hours \$1200	June 2012	City
Collect and distribute information about storm water pollution in City newsletter or staffer with utility billings	Distribute article of information to 100% of City residents on mailing list once per year	Completed article with date recorded that information was sent out	1-17	1	PEP	5 hours \$300	Annually	City
Minimum Performance Measure 4.2.1.3 – Provide and document information given to businesses and institutions of the Permittee’s prohibitions against and the water quality impacts associated with illicit discharges and improper disposal of waste. Provide information to businesses and institutions on effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers); benefits of on-site infiltration of storm water; building and equipment maintenance (proper management of waste water); use of salt or other deicing materials (cover/prevent runoff to storm system and contamination to ground water) proper storage of materials (emphasize pollution prevention) proper management of waste materials and dumpsters (cover and pollution prevention) and proper management of parking lot surfaces (sweeping).								
Activity/Product	Measurable Goal	Documentation	Target Pollutant	Target Audience	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
County to develop and City to distribute brochures to businesses and institutions within the City	Distribute one brochure, addressing a specific audience and potential pollutants from that audience each year and track number of brochures distributed	Coalition invoice, finished brochure and documentation of number of brochures distributed	2,3,6 9-14,16	2	PEP	4 hours \$240	Annually	Storm Water Coalition & City
Minimum Performance Measure 4.2.1.4 – Provide and document information given to engineers, construction contractors, developers, development review staff, and land use planners concerning the development of storm water pollution prevention plans (SWPPPs) and BMPs for reducing adverse impacts from storm water runoff from development								

sites.

Activity/Product	Measureable Goal	Documentation	Target Pollutant	Target Audience	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Provide example SWPPP and Checklist on City website	Track the number of hits the SWPPP information receives on the website	Completed website. Keep a document that shows the number of website hits each year	3, 7, 8, 10, 11, 13, 15, 17	3, 4	PEP ET	16 hours \$480	June 2012/ Thereafter Annual Tracking	City web administrator

Minimum Performance Measure 4.2.1.5 – Provide and document information and training given to employees of Permittee-owned or operated facilities concerning the Permittee’s prohibition against and the water quality impacts associated with illicit discharges and improper disposal of waste. The Permittee must at a minimum consider the following topics: equipment inspection to ensure timely maintenance; proper storage of industrial materials (emphasize pollution prevention); proper management and disposal of wastes; proper management of dumpsters; minimization of use of salt and other de-icing materials (cover/prevent runoff to MS4 and ground water contamination); benefits of appropriate on-site infiltration (areas with low exposure to industrial materials such as roofs or employee parking); and proper maintenance of parking lot surfaces (sweeping).
Minimum Performance Measure 4.2.1.6 – Provide and document information and training given to MS4 engineers, development and plan review staff, land use planners, and other parties as applicable to learn about Low Impact Development (LID) practices, green infrastructure practices, and to communicate the specific requirements for post-construction control and the associated Best Management Practices (BMPs) chosen within the SWMP.

Activity/Product	Measureable Goal	Documentation	Target Pollutant	Target Audience	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Registered storm water inspector training	Have at least one registered and trained storm water inspector for City inspections	Document showing course attendance or completion	1-17	4	ET	16 hours \$680	Dec 2011	Storm Water Coalition & City
Storm water pollution prevention training for employees	Send one employee to attend at least 4 hours of storm water training each year	Attendance roll or receipt with number of hours attended	1-17	4	ET	4 hours \$120	Annually	City
Monthly Storm Water Coalition Meetings	Attend 75% of monthly meetings	Coalition minutes and attendance roster	1-17	3, 4	ET	3 hours \$90	Monthly	Storm Water Coalition & City
Review, update and perform training using the Standard Operating Procedures (SOPs) developed by the County Storm Water Coalition	Review and update to reflect actual City procedures once per year. Train employees on SOPs at least once per year	SOP document is included in SWMP as Appendix H. Keep attendance roster for annual training.	1-17	4	ET	5 hours \$240	Annually	City

<p>Minimum Performance Measure 4.2.1.8 – The Permittee must include written documentation or rationale as to why particular BMPs (Activities/Products) were chosen for its public education and outreach program. Note: Each activity or product has associated Best Management Practices (BMPs) that can be referenced as needed and are listed in Appendix I</p>	
County Water Fair	<p>The County has been doing a water fair for elementary students for several years. The elementary school curriculum teaches about the water cycle and ways students can keep the environment clean. To support, attend, and volunteer at this activity is an effective because this program will eventually reach all those who are educated in public schools.</p> <p>Many of the inlet boxes in the City are already marked with messages such as “Dumping is illegal, we all live downstream” This measure was chosen because it warns those who may dump pollutants downstream and educates the public about storm water impacts. This can also be done as part of an eagle scout of community service project. See Appendix B for example program using public service.</p>
County to provide and City direct the installation of curb markers on catch basins or replace old or worn out ones	<p>Every city pays a yearly fee to the County Storm Water Coalition for television commercials. This was chosen because a portion of this fee goes towards television advertisements that educate the general public about the negative impact non-storm water discharges. Each year the message changes and is directed at different audiences.</p>
Pay fees for TV spots in cooperation with Salt Lake County as part of fees paid to County	<p>Many people visit the City website on a daily basis. Providing information on the City website will help to educate the public about what they can do to work towards the goal of keeping the storm water clean.</p> <p>This method was chosen because the mailer reaches all City residents that are on the mailing list. This way the City can educate those City residents that may not be reached by other methods such as television advertisements or the City website.</p>
City website to address storm water impacts	<p>These brochures will be developed by the County Storm Water Coalition and will address potential pollution that is likely to be associated with different types of businesses and institutions. This task will educate a large audience by targeting a different type of business or institution each year.</p>
Collect and distribute information about storm water pollution in City newsletter or staffer with utility billings	<p>This will serve as an educational resource for contractors, developers, and City personnel. They can reference a SWPPP template and a SWPPP checklist to ensure the SWPPP submitted meets the required guidelines. A SWPPP template can be found at: http://www.waterquality.utah.gov/UPDES/stormwatercon.htm click SWPPP template. A SWPPP checklist can be found in Appendix C</p> <p>Having a City employee trained as a registered storm water inspector will ensure that the requirements of the General Permit are met and that construction site inspections are being done correctly. Information about the Registered Storm Water Inspector Program can be found at: http://www.utahltap.org/html/stormwater-inspection</p>
County will develop and City will distribute brochures to businesses and institutions within the City	<p>Training City employees at least 4 hours per year will help to keep their registration as a storm water inspector current and will help to ensure that they are staying current on the latest topics and issues.</p>
Provide example SWPPP and Checklist on City website	
Registered storm water inspector training	
Storm water pollution prevention training for employees	

<p>Monthly Storm Water Coalition Meetings</p>	<p>Monthly Storm Water Coalition Meetings are an excellent source of education. By attending employees are educated on the latest storm water issues and provide valuable input into the future direction of the program. The Weber County Storm Water Coalition meets on the second Thursday of every month at 12:00 p.m. at the West Haven City Hall.</p>
<p>Review, update and perform training using the Standard Operating Procedures (SOPs) developed by the County Storm Water Coalition</p>	<p>The County Storm Water Coalition developed excellent Standard Operating Procedures (SOPs) activities which municipalities are likely to perform. These SOPs show City staff how to perform tasks without polluting the environment and storm water. The SOPs can be placed in areas where activities that have a high pollution risk take place (such as maintenance shops) and serve as a reminder of the proper way to perform daily tasks.</p>

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CHAPTER 3

PUBLIC PARTICIPATION AND INVOLVEMENT

PUBLIC PARTICIPATION AND INVOLVEMENT

The public can provide valuable input and assistance to a regulated small City's municipal storm water management program and should be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a storm water management program because it allows for:

- **Broader public support** since citizens who participate in the development and decision making process are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and more likely to take an active role in its implementation
- **Shorter implementation schedules** due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers
- **A broader base of expertise and economic benefits** since the community can be a valuable, and free, intellectual resource

Operators of regulated small MS4s should include the public in developing, implementing, updating, and reviewing their storm water management programs. The public participation program should make every effort to reach out and engage all economic and ethnic groups. There are challenges associated with public involvement. Nevertheless, these challenges can be addressed through an aggressive and inclusive program. Challenges and example practices that can help ensure successful participation are discussed below.

The best way to handle common notification and recruitment challenges is to know the audience and think creatively about how to gain its attention and interest. Traditional methods of soliciting public input are not always successful in generating interest, and subsequent involvement, in all sectors of the community. For example, municipalities often rely solely on advertising in local newspapers to announce public meetings and other opportunities for public involvement. Since there may be large sectors of the population who do not read the local press, the audience reached may be limited. Therefore, alternative advertising methods should be used whenever possible, including announcements in neighborhood newsletters.

In addition, advertising and soliciting help should be targeted at specific population sectors. The goal is to involve a diverse cross-section of people who can offer a multitude of concerns, ideas, and connections during the program development process.

There are a variety of practices that could be incorporated into a public participation and involvement program, such as:

- **Public meetings/citizen panels** allow citizens to discuss various viewpoints and provide input concerning appropriate storm water management policies and BMPs

- *Storm drain stenciling* is an important and simple activity that concerned citizens, especially students, can do
- *Community clean-ups* along local waterways, beaches, and around storm drains

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, greatly depend on the needs and characteristics of the operator and the area served by the small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure.

For example, a City could identify a certain section of town has an incident of used motor oil dumping. The area also has numerous automotive businesses including small repair shops, large auto dealerships, gas stations, and body shops. The City could organize a public meeting to not only educate residents about storm water issues and permit requirements, but also to ask for input regarding possible dumping areas and to determine if the community needs an oil recycling facility or some other way to safely dispose of used motor oil. In this way, the City might better understand who the target audience is for illegal dumping control while implementing a valuable service for the community.

Public Involvement and Participation Strategy

The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, target pollutant and audience, and responsible party as called for in the General Permit.

PUBLIC INVOLVEMENT/PARTICIPATION								
TARGET AUDIENCE	(1) Residents (2) Commercial & Industrial Businesses (3) Trade Associations	(4) Environmental Groups (5) Homeowners Associations (6) Educational Organizations						
TARGET POLLUTANTS	(1) E Coli (2) Pet Waste (3) Sediment (4) Grass (5) Oil (6) Fertilizer	(7) Trash (8) Construction Site Waste (9) Septic Waste (10) Hydrocarbons (11) Automotive Fluids (12) Chlorinated Swimming Pool Water	(13) Wash Water (14) Household Hazardous Waste (15) Illicit Discharges & Spills (16) Landscaping Materials (17) Fuels					
<p>Minimum Performance Measure 4.2.2.1 - Permittees shall adopt a program or policy directive to create opportunities for the public to provide input during the decision making processes involving the development, implementation and update of the SWMP document including development and adoption of all required ordinances or regulatory mechanisms.</p> <p>Minimum Performance Measure 4.2.2.4 - The Permittee must at a minimum comply with State and Local public notice requirements when implementing a public involvement/participation program.</p>								
Activity/Product	Measurable Goal	Documentation	Target Pollutant	Target Audience	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
All matters relating to development, implementation, and updates to the SWMP including storm water related ordinances and resolutions will be discussed and passed in	Provide public notice as necessary and discuss all development, implementation, and updates of the SWMP with the public and address 100% of related questions before updates or changes	City Council meeting minutes	1-17	1-6	PEP	4 hours \$120	At least annually with SWMP update or as often as necessary	City Council City Adminin. Engineering Public Works

STORM WATER MANAGEMENT PLAN

CHAPTER 4

ILLICIT DISCHARGE DETECTION AND ELIMINATION

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Federal regulations define an illicit discharge as “...any discharge to an MS4 that is not composed entirely of storm water...” with some exceptions. According to the General Permit these exceptions include the following:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Fountain drains
- Air conditioning condensate
- Irrigation Water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering runoff
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Residual street wash water
- Dechlorinated water reservoir discharges
- Discharges/flows from firefighting activity

Other discharges that are not composed entirely of storm water are considered illicit discharges because MS4s are not designed to accept, process, or discharge such non-storm water wastes.

Discharges from MS4s can include wastes and wastewater from non-storm water sources. Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

Recognizing the adverse effects illicit discharges can have on receiving waters, permitted MS4s are required to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls
- Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State or local law) on non-storm water discharges into the MS4, and appropriate enforcement procedures and actions

- A plan to detect and address non-storm water discharges, including illegal dumping, into the MS4
- The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste
- The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

The objective of the illicit discharge detection and elimination minimum control measure is to have regulated small MS4 operators gain a thorough awareness of their systems. This awareness allows them to determine the types and sources of illicit discharges entering their system; and establish the legal, technical, and educational means needed to eliminate these discharges. Permittees could meet these objectives in a variety of ways depending on their individual needs and abilities, but some general guidance for each requirement is provided below:

A storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular waterbodies these flows may be affecting. It is also recommended that all existing information on outfall locations be collected and shown on the map.

Some permittees may have limited authority under State or local law to establish and enforce an ordinance or other regulatory mechanism prohibiting illicit discharges. In such a case, the permittee is encouraged to obtain the necessary authority, if possible.

The plan to detect and address illicit discharges is the central component of this minimum control measure. The plan is dependent upon several factors, including the permittee's available resources, size of staff, and degree and character of its illicit discharges. As guidance only, the four steps of a recommended plan are outlined below:

- 1. Locate Problem Areas** - It is recommended that priority areas be identified for detailed screening of the system based on the likelihood of illicit connections (e.g., areas with older sanitary sewer lines). Methods that can locate problem areas include: visual screening; water sampling from manholes and outfalls during dry weather; the use of infrared and thermal photography, cross-training field staff to detect illicit discharges, and public complaints.
- 2. Find the Source** - Once a problem area or discharge is found, additional efforts usually are necessary to determine the source of the problem. Methods that can find the source of the illicit discharge include tracing the discharge upstream in the storm sewer and using video to inspect the storm sewers.
- 3. Remove/Correct Illicit Connections** - Once the source is identified, the offending discharger should be notified and directed to correct the problem. Education efforts and working with the discharger can be effective in resolving the problem before taking legal action.

- 4. Document Actions Taken** - As a final step, all actions taken under the plan should be documented. This illustrates that progress is being made to eliminate illicit connections and discharges. Documented actions should be included in annual reports and include information such as: the number of outfalls screened; any complaints received and corrected; the number of discharges and the quantities of flow eliminated.

Studies have shown that one of the most-cost effective and efficient techniques that can be employed to identify and correct inappropriate discharges is to use the citizens of a community to report suspicious activities. Public education and labeling of outfalls and other storm drain infrastructure is an important element of establishing a successful citizen hotline. Outreach to public employees, businesses, property owners, the general public, and elected officials regarding ways to detect and eliminate illicit discharges is an integral part of this minimum measure.

Suggested educational outreach efforts include:

- Developing informative brochures, and guidances for specific audiences (e.g., carpet cleaning businesses) and school curricula
- Designing a program to publicize and facilitate public reporting of illicit discharges
- Coordinating volunteers for locating, and visually inspecting, outfalls or to stencil storm drains
- Initiating recycling programs for commonly dumped wastes, such as motor oil, antifreeze, and pesticides

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the operator and the area served by its small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure.

For example, an MS4 could establish a measurable goal of responding to all complaints received by the citizen complaint hotline within 24 hours to minimize water quality impacts or recurrent dumping. A complaint tracking system could be used to log response and enforcement activity.

The educational outreach measurable goals for this minimum control measure could be combined with the measurable goals for the Public Education and Outreach minimum control measure.

Illicit Discharge Detection and Elimination Strategy

The General Permit states that “All Permittees shall develop, implement and enforce an IDDE program to systematically find and eliminate sources of non-storm water discharges from the MS4 and to implement defined procedures to prevent illicit connections and discharges according to the minimum performance measures listed below **within 18 months** of receiving coverage under this Permit unless a different timeframe is indicated. The IDDE program must be described in writing, incorporated as part of the Permittee’s SWMP document, and contain the elements detailed in this part of the Permit. The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, and responsible party to meet the requirements of the General Permit.

Minimum Performance Measure 4.2.3.1 – Maintain a current storm sewer system map of the MS4, showing the location of all municipal storm sewer outfalls with the names and location of all State waters that receive discharges from those outfalls, storm drain pipe and other storm water conveyance structures within the MS4.						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Currently the City maintains a storm water system map. The City will continue to update this map with the required information	Update the storm water system map once per year	Current storm water system map kept with this SWMP. The current map is at the end of this chapter	IDC	5 hours \$300	Annually	Public Works City Engineer
Minimum Performance Measure 4.2.3.2 – Effectively prohibit, through ordinance or other regulatory mechanism, non-storm water discharges to the MS4, including spills, illicit connections, illegal dumping and sanitary sewer overflows (“SSOs”) into the storm sewer system, require removal of such discharges consistent with Part 4.2.3.6. of this Permit, and implement appropriate enforcement procedures and actions. The Permittee must have a variety of enforcement options in order to apply escalating enforcement procedures as necessary for the severity of violation and/or the recalcitrance of the violator. Exceptions are discharges pursuant to a separate UPDES Permit (other than the UPDES Permit for discharges from the MS4) and non-storm water discharges listed in Part 1.2.2.2. An SSO is a discharge of untreated sanitary wastewater. SSOs are illegal and must be eliminated. All SSOs must be reported to the Division of Water Quality and to the Permittee’s local wastewater treatment plant.						
Minimum Performance Measure 4.2.3.2.1 - The IDDE program must have adequate legal authority to detect, investigate, eliminate and enforce against non-storm water discharges, including illegal dumping, into the MS4. Adequate legal authority consists of an effective ordinance, by-law, or other regulatory mechanism. The documented IDDE program that is included in the Permittee’s SWMP must include a reference or citation of the authority the Permittee will use to implement all aspects of the IDDE program.						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Currently the City has a storm water ordinance that addresses non-storm water discharges and other storm water quality issues. The ordinance will be updated to address escalating enforcement procedures and other	Update the storm water ordinance to reflect the new General Permit requirements	Copy of updated ordinance	IDC	80 hours \$5,000	Feb 2012	Storm Water Coalition City Attorney City Administration City Council City Engineer

<p>legal matters addressed in the General Permit</p>						
<p>Minimum Performance Measure 4.2.3.3 – Develop, implement and prepare in writing a plan to detect and address non-storm water discharges to the MS4, including spills, illicit connections, sanitary sewer overflows and illegal dumping. The plan shall include: Minimum Performance Measure 4.2.3.3.1 – Develop and implement written systematic procedures for locating and listing the following priority areas likely to have illicit discharges (if applicable to the jurisdiction):</p> <ul style="list-style-type: none"> Areas with older infrastructure that are more likely to have illicit connections; Industrial, commercial, or mixed use areas; Areas with a history of past illicit discharges; Areas with a history of illegal dumping; Areas with onsite sewage disposal systems; Areas with older sewer lines or with a history of sewer overflows or cross-connections; and Areas upstream of sensitive waterbodies. <p>The Permittee must document the basis for its selection of each priority area and create a list of all priority areas identified in the system. This priority area list must be updated annually to reflect changing priorities.</p> <p>Minimum Performance Measure 4.2.3.3.2 – Field assessment activities for the purpose of verifying outfall locations and detecting illicit discharges, including dry weather screening of outfalls or facilities serving priority areas identified in Part 4.2.3.3.1 as well as routine dry weather screening of all outfalls that discharge within the Permittee’s jurisdiction to a receiving water. Compliance with this provision shall be achieved by: prioritizing receiving waters for visual inspection to identify previously unknown outfalls and field assessing at least 20 percent of the priority areas identified in Part 4.2.3.3.1 to detect illicit discharges within one year of receiving coverage from this Permit, and field assessing an additional 20 percent of the identified high priority water bodies or other high priority area each year thereafter. Field assessment activities shall utilize an inspection form to document findings.</p>						
<p>Activity/Product</p>	<p>Measurable Goal</p>	<p>Documentation</p>	<p>Related BMPs</p>	<p>Resources Needed</p>	<p>Due Date/Frequency</p>	<p>Responsible Party</p>
<p>A written plan has been developed to detect and address non-storm water discharges to the MS4. Priority areas need to be identified to complete this plan. Outfall locations and priority areas will continually be identified.</p>	<p>1. Annually identify priority areas. 2. Continually assess all outfall locations and annually update 3. Inspect at least 20 percent of all outfalls and priority areas annually</p>	<p>1. Priority areas will be shown on the storm water map 2. All known outfall locations will be shown on the storm water map 3. Outfall Reconnaissance Inventory/Sample Collection Field Sheet along with written procedures in Appendix C</p>	<p>IDC</p>	<p>20 hours \$600</p>	<p>Annually</p>	<p>Public Works City Engineer</p>

Minimum Performance Measure 4.2.3.4 – Develop and implement standard operating procedures (SOPs) or similar type of documents for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, using field tests of selected chemical parameters as indicators of discharge sources, collecting and analyzing water samples for the purpose of determining sanctions or penalties, and/or other detailed inspection procedures.

Minimum Performance Measure 4.2.3.5 – Develop and implement standard operating procedures (SOPs) or similar type of documents for characterizing the nature of, and the potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee by the hotline or other telephone number described in 4.2.3.9. These procedures shall include detailed instructions for evaluating how the discharge shall be immediately contained and steps to be taken for containment of the discharge. Compliance with this provision will be achieved by initiating an investigation immediately upon being alerted of a potential illicit discharge.

Minimum Performance Measure 4.2.3.5.1 – When the source of a non-storm water discharge is identified and confirmed, the Permittee must record the following information in an inspection report: the date the Permittee became aware of the non-storm water discharge, the date the Permittee initiated an investigation of the discharge, the date the discharge was observed, the location of the discharge, a description of the discharge, the method of discovery, date of removal, repair, or enforcement action; date, and method of removal verification. Analytical monitoring may be necessary to aid in the identification of potential sources of an illicit discharge and to characterize the nature of the illicit discharge. The decision process for utilizing analytical monitoring must be fully documented in the inspection report.

Minimum Performance Measure 4.2.3.6 – Develop and implement standard operating procedures (SOPs) or similar type of documents for ceasing the illicit discharge, including notification of appropriate authorities; notification of the property owner; technical assistance for removing the source of the discharge or otherwise eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated. Illicit discharges to the MS4 are prohibited and any such discharges violate this Permit and remain in violation until they are eliminated. Upon detection, the Permittee shall require immediate cessation of improper disposal practices upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to Part 4.2.3.2.1. of this Permit.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
A written plan or SOP has been developed to detect and address non-storm water discharges to the MS4.	All Illicit Discharge Detection and Elimination (IDDE) investigations will be thoroughly investigated and documented in this SWMP	Illicit Discharge Hotline Tracking Sheet along with written procedures in Appendix C	IDC	On a as needed basis	On a as needed basis	Public Works Environmental Response Companies

Minimum Performance Measure 4.2.3.7 – Permittees shall inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
See Public Education and Outreach Chapter Minimum Performance Measures 4.2.1.1 – 4.2.1.3 for this information						

Minimum Performance Measure 4.2.3.8 – Permittees shall promote or provide services for the collection of household hazardous waste.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party

The City will promote services for the collection of household hazardous waste. See included information in Appendix C	Post information on disposal locations on City website once or place article in City newsletter annually	City website or newsletter article	HWM	5 hours \$150	Website by Feb 2012 or Newsletter Annually	City web administrator or public works
<p>Minimum Performance Measure 4.2.3.9 – Permittees shall publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. A written record shall be kept of all calls received, all follow-up actions taken, and any feedback received from public education efforts.</p> <p>Minimum Performance Measure 4.2.3.9.1 - The Permittee must develop a written spill/dumping response procedure, and a flow chart for internal use, that shows the procedures for responding to public referrals of illicit discharges, the various responsible agencies and their contacts, and who would be involved in illicit discharge incidence response, even if it is a different entity other than the Permittee. The procedure and list must be incorporated as part of the IDDE program and incorporated into the Permittee's SWMP document. The list must be maintained and updated as changes occur.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Develop and publicize a public reporting hotline for the public to report an illicit discharge, and dumping into the storm drain system A written spill/dumping response document has been developed. A flow chart for internal use will need to be finished	Implement hotline. Track the number of calls each year. All calls to be addressed and resolved. Annually review the flow chart and determine if it is still current	Complete Illicit discharge report form in Appendix C Most current written spill/dumping response document can be found in Appendix C	IDC PEP IDC	30 hours \$900 1 hour \$30	Dec 2011 Annually	City City
<p>Minimum Performance Measure 4.2.3.10 – Permittees shall adopt and implement procedures for program evaluation and assessment which includes maintaining a database for mapping, tracking of the number and type of spills or illicit discharges identified; and inspections conducted.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
A database will be kept which includes hard files or electronic documents of all inspections, and a storm water map showing outfalls and spill or illicit discharge locations. All data will be used to evaluate compliance with requirements	Keep 100% of all documents relating to spills or illicit discharges and all inspections conducted in one location where all employees can access the information	Illicit discharge report form, construction site inspection form, outfall inspection form found in Appendix C	IDC	4 hours \$120	Weekly	Public Works
<p>Minimum Performance Measure 4.2.3.11 – Permittees shall at a minimum, annually train employees about the IDDE program including identification, investigation, termination, cleanup, and reporting of illicit discharges including spills, improper disposal, and illicit connections. Permittees shall provide training to all field staff that as part of their normal job responsibilities might come into contact with or otherwise observe an illicit discharge or illicit connection to the MS4. Permittees shall also train office personnel</p>						

who might receive initial reports of illicit discharges. Training shall include how to identify a spill, an improper disposal, or an illicit connection to the MS4 and proper procedures for reporting the illicit discharge.

Activity/Product	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/ Frequency	Responsible Party
Training will be provided for employees including field staff and office personnel on how to handle a spill or illicit discharge	Annually provide training to City staff who are likely to encounter an illicit discharge as part of their job duties	Training sign in sheet or similar proof of training	PEP	8 hours \$500	Annually	City

Insert Storm Water System Map

STORM WATER MANAGEMENT PLAN

CHAPTER 5

CONSTRUCTION SITE RUNOFF CONTROL

CONSTRUCTION SITE RUNOFF CONTROL

Polluted stormwater runoff from construction sites often flows to MS4s and ultimately is discharged into local rivers and streams. Pollutants of concern are; sediment, solid and sanitary wastes, oil and grease, concrete truck washout, construction chemicals, and constructions debris. Of the pollutants listed, sediment is usually the main pollutant of concern. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to surrounding waters. For example, excess sediment can quickly fill rivers and lakes, requiring dredging and destroying aquatic habitats.

An operator of a regulated small MS4 is required to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The small MS4 operator is required to:

- Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites
- Have procedures for site plan review of construction plans that consider potential water quality impacts
- Have procedures for site inspection and enforcement of control measures
- Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism)
- Establish procedures for the receipt and consideration of information submitted by the public
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Suggested BMPs (i.e., the program actions/activities) and measurable goals

Further explanation and guidance for each component of a regulated small MS4's construction program is provided below:

- 1. Regulatory Mechanism** - Through the development of an ordinance or other regulatory mechanism, the small MS4 operator must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre.
- 2. Site Plan Review** - The small MS4 operator must include in its construction program requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other waste at the site. To determine if a construction site is in

compliance with such provisions, the small MS4 operator should review the site plans submitted by the construction site operator before ground is broken. Site plan review aids in compliance and enforcement efforts since it alerts the small MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities. The tracking of sites is useful not only for the small MS4 operator's recordkeeping and reporting purposes, which are required under their NPDES stormwater permit, but also for members of the public interested in ensuring that the sites are in compliance.

- 3. Inspections and Penalties** - Once construction commences, BMPs should be in place and the small MS4 operator's enforcement activities should begin. To ensure that the BMPs are properly installed, the small MS4 operator is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Procedures could include steps to identify priority sites for inspection and enforcement based on the nature and extent of the construction activity, topography, and the characteristics of soils and receiving water quality. Inspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties. A website has been developed to use as a tool for builders and developers (www.cicacenter.org). Inspectors can use the Web site to find plain language explanations of the major environmental laws affecting the construction industry as well as guidance that can be distributed developers and construction site operators. To conserve staff resources, one possible option for small MS4 operators is to have inspections performed by the same inspector that visits the sites to check compliance with health and safety building codes.

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the operator and the area served by its small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure.

Measurable Goals Guidance for Phase II MS4s has been developed that is designed to help program managers comply with the requirement to develop measurable goals. The guidance presents an approach for MS4 operators to develop measurable goals as part of their stormwater management plan. For example, an MS4 program goal might be to educate at least 80 percent of all construction site operators and contractors about proper selection, installation, inspection, and maintenance of BMPs by the end of the permit term, which will help to ensure compliance with erosion and sediment control requirements. This goal could be tracked by documenting attendance at local, State, or Federal training programs. Attendance can be encouraged by decreasing permitting fees for those contractors who have been trained and provide proof of attendance when applying for permits.

Construction Site Runoff Control Strategy

The General Permit states that “All Permittees shall develop, implement and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction sites with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale according to the minimum performance measures listed below **within 18 months** of receiving coverage under this Permit. Public and private projects, including projects proposed by the Permittee’s own departments and agencies, shall comply with these requirements.” The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, and responsible party to meet the requirements of the General Permit.

<p>Minimum Performance Measure 4.2.4.1 – Develop and adopt an ordinance or other regulatory mechanism that requires the use of erosion and sediment control practices at construction sites. The ordinance or other regulatory mechanism shall, at a minimum, be equivalent with the technical requirements set forth in the UPDES Storm Water General Permit for Construction Activities, UTR300000 which can be found at http://www.waterquality.utah.gov/UPDES/stormwatercon.htm. The ordinance or other regulatory mechanism shall include sanctions to ensure compliance. The ordinance or other regulatory mechanism shall apply, at a minimum, to construction projects disturbing greater than or equal to one acre and to construction projects of less than one acre that are part of a larger common plan of development or sale. Existing local requirements to apply storm water controls at smaller sites shall be retained.</p> <p>Minimum Performance Measure 4.2.4.1.1 – The ordinance or other regulatory mechanism shall, at a minimum, require construction operators to prepare a Storm Water Pollution Prevention Plan (SWPPP) and apply sediment and erosion control BMPs as necessary to protect water quality, reduce the discharge of pollutants, and control waste such as, but not limited to, discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality. The SWPPP requirements must be, at a minimum, equivalent with the SWPPP requirement set forth in the UPDES Storm Water General Permit for Construction Activities, UTR300000.</p> <p>Minimum Performance Measure 4.2.4.2 – The ordinance shall include a provision for access by qualified personnel to inspect construction storm water BMPs on private properties that discharge to the MS4.</p>						
Activity/Product Related BMPs	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Currently the City has a storm water ordinance that addresses requirements for construction sites that are one acre or greater. The ordinance will be reviewed to ensure that that it addresses the most current General Permit requirements	Update the storm water ordinance to reflect the new General Permit requirements	Copy of updated ordinance		See Minimum Performance Measure 4.2.3.2 & 4.2.3.2.1 in Chapter 4	Feb 2012	Storm Water Coalition City Attorney City Administration City Council City Engineer
<p>Minimum Performance Measure 4.2.4.2 – Develop a written enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism which shall include:</p> <p>Minimum Performance Measure 4.2.4.2.1 – Standard operating procedures (SOPs) or similar type of documents that include specific processes and sanctions to minimize the occurrence of, and obtain compliance from violators which shall include appropriate, escalating enforcement procedures and actions.</p> <p>Minimum Performance Measure 4.2.4.2.2 – Documentation and tracking of all enforcement actions.</p>						

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
SOPs have been developed and can be found in Appendix H The SOPs will be reviewed and updated to correspond to the updated ordinance and address escalation of force procedures	Update the SOPs when the new ordinance is adopted. Document 100% of all enforcement actions including verbal warnings	Document and track enforcement actions	ET	4 hours \$120	Feb 2012	City Engineer Public Works
<p>Minimum Performance Measure 4.2.4.3 – Develop and implement SOPs or similar type of documents for pre-construction Storm Water Pollution Prevention Plan (SWPPP) review and keep records for, at a minimum, all construction sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, to ensure plans are complete and in compliance with State and Local regulations. Permittees shall keep records of these projects for five years or until construction is completed, whichever is longer. Prior to construction, the Permittee shall:</p> <p>Minimum Performance Measure 4.2.4.3.1 – Conduct a pre-construction SWPPP review which includes a review of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development.</p> <p>Minimum Performance Measure 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.</p> <p>Minimum Performance Measure 4.2.4.3.3 – Incorporate into the SWPPP review procedures for an evaluation of opportunities for use of low impact design (LID) and green infrastructure and when the opportunity exists, encourage such BMPs to be incorporated into the site design.</p> <p>Minimum Performance Measure 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 recognizes as impaired (for sediment) or high quality.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
A SWPPP checklist, Storm Water Construction Activity Permit, and Storm Sewer Connection Permit have been developed and can be found in Appendix C. The preconstruction process will be re-evaluated to better address stormwater issues including identifying priority construction sites, evaluating LID opportunities, etc.	Develop a SOP that addresses pre-construction stormwater issues.	Finished SOP		8 hours \$240	Feb 2012	City Administration City Engineer Public Works
<p>Minimum Performance Measure 4.2.4.4 – All Permittees shall develop and implement SOPs or similar type of documents for construction site inspection and enforcement of construction storm water pollution control measures. The procedures must clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The Permittee must have the authority to the extent authorized by law to impose sanctions to ensure compliance with the local program. These procedures and regulatory authorities must be written and documented in the SWMP. The construction site storm water runoff control inspection program must provide:</p>						

<p>Minimum Performance Measure 4.2.4.4.1 – Inspections of all new construction sites with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale at least monthly by qualified personnel using the Construction Storm Water Inspection Form (Checklist) found on the Division’s website at http://www.waterquality.utah.gov/UPDES/stormwatercon.htm. The checklist can also be found in Appendix C</p> <p>Minimum Performance Measure 4.2.4.4.2 – The Permittee must inspect all phases of construction: prior to land disturbance, during active construction, and following active construction. The Permittee must include in its SWMP document a procedure for being notified by construction operators/owners of their completion of active construction so that verification of final stabilization and removal of all temporary control measures may be conducted.</p> <p>Minimum Performance Measure 4.2.4.4.3 – Inspections by the MS4 of priority construction sites defined in Part 7.36. must be conducted at least biweekly using the Construction Storm Water Inspection Form (Checklist) found on the Division’s website at http://www.waterquality.utah.gov/UPDES/stormwatercon.htm. The checklist can also be found in Appendix C</p> <p>Minimum Performance Measure 4.2.4.4.4 – Based on site inspection findings, the permittee must take all necessary follow-up actions (i.e., reinspection, enforcement) to ensure compliance in accordance with the permittee’s enforcement strategy. These follow-up and enforcement actions must be tracked and documented.</p>						
Activity/Product	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
A SOP will be developed which addresses who will be responsible for construction site inspections as well as who has enforcement authority according to the City ordinance. All phases of construction will be inspected. The Storm Water Construction Activity Permit found in Appendix C addresses how construction operators are to notify the City when projects are complete	Develop a SOP that addresses construction site inspections by Feb 2012. Inspect all required construction sites monthly and during all phases of construction. Identify priority construction sites. Use Construction Storm Water Inspection Form for inspections.	Finished SOP. Construction Storm Water Inspection Form		4hours \$120 32 hours \$960	SOP by Feb 2012 Inspections monthly	City Engineer Public Works
<p>Minimum Performance Measure 4.2.4.5 – The Permittee must ensure that all staff whose primary job duties are related to implementing the construction storm water program, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. The training can be conducted by the MS4 or outside training can be attended. Such training must extend to third-party inspectors and plan reviewers as well. The training records to be kept include dates, activities or course descriptions, and names and positions of staff in attendance.</p>						
Activity/Product	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Staff whose job duties are related to the storm water will be trained on the construction program	Have all related staff attend at least one training per year	Attendance roll, training invoice	ET	24 hours \$720	Annually	City
<p>Minimum Performance Measure 4.2.4.6 – All Permittees shall adopt and implement a procedure to maintain records of all projects disturbing greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. Permittees shall keep records which include but are not limited to, site plan</p>						

reviews, SWPPPs, inspections and enforcement actions including verbal warnings, stop work orders, warning letters, notices of violation, and other enforcement records. Permittees shall keep records of these projects for five years or until construction is completed, whichever is longer.

Activity/Product	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/ Frequency	Responsible Party
Keep records of all SWPPP reviews, inspections, and all enforcement actions	Keep accurate records of 100% of required items in a central spot	SWPPP Checklist see Appendix C		5 hours \$150	Feb 2012 Ongoing monthly	Public Works City Engineer

STORM WATER MANAGEMENT PLAN

CHAPTER 6

POST-CONSTRUCTION RUNOFF CONTROL

POST-CONSTRUCTION RUNOFF CONTROL

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces (e.g., parking lots, driveways, and rooftops) interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

An operator of a regulated small MS4 is required to develop, implement, and enforce a program to reduce pollutants in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to 1 acre. The small MS4 operator is required to:

- Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs)
- Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State or local law
- Ensure adequate long-term operation and maintenance of controls
- Determine the appropriate best management practices and measurable goals for this minimum control measure

The stormwater requirements apply to “redevelopment” projects that alter the “footprint” of an existing site or building in such a way that there is a disturbance of equal to or greater than 1 acre of land. Redevelopment projects do not include such activities as exterior remodeling. Because redevelopment projects may have site constraints not found on new development sites, the requirements provide flexibility for implementing post-construction controls on redevelopment sites.

Structural and non-structural BMPs can be used to satisfy the requirements of the post-

construction control measure. It is important to recognize that many BMPs are climate-specific and not all BMPs can be used in every geographic area. Because the requirements of this measure are closely tied to the requirements of the construction site runoff control minimum measure it is recommended that small MS4 operators develop and implement these two measures in tandem.

- **Non-Structural BMPs**

- **Planning Procedures.** Runoff problems can be addressed efficiently with sound planning procedures. Local master plans, comprehensive plans, and zoning ordinances can promote improved water quality in many ways, such as guiding the growth of a community away from sensitive areas to areas that can support it without compromising water quality.
- **Site-Based BMPs.** These BMPs can include buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

- **Structural BMPs**

- **Stormwater Retention/Detention BMPs.** Retention or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins, or multichamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices can be designed to both control stormwater volume and settle out particulates for pollutant removal.
- **Infiltration BMPs.** Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced stormwater runoff quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.
- **Vegetative BMPs.** Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, remove pollutants, and facilitate percolation of runoff, thereby maintaining natural site hydrology, promoting healthier habitats, and increasing aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands, and rain gardens.

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect needs and characteristics of the operator and the area served by its small MS4. Furthermore, the measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. For example, an MS4 program goal might be to reduce by 30 percent the road surface areas directly connected to storm sewer systems (using traditional curb and gutter infrastructure) in new developments and redevelopment areas over the course of the first permit term. Using “softer” stormwater conveyance approaches, such as grassy swales, will increase infiltration and decrease the volume and velocity of runoff leaving development sites. Progress toward the goal could be measured by

tracking the linear feet of curb and gutter not installed in development projects that historically would have been used.

Post-Construction Storm Water Management Strategy

The General Permit states that “All Permittees shall develop, implement and enforce a program to address post-construction storm water runoff to the MS4 from new development and redevelopment construction sites disturbing greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, according to the minimum performance measures listed below **within 18 months** of receiving coverage under this Permit. The objective of this control measure is for the hydrology associated with new development to mirror the pre-development hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of storm water. The water quality considerations of this minimum control measure do not replace or substitute for water quantity or flood management requirements implemented on the local level for new developments. The water quality controls may be incorporated into the design of structures intended for flow control; or water quality control may be achieved with separate control measures. The program must apply to private and public development sites, including roads.” The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, and responsible party to meet the requirements of the General Permit.

Minimum Performance Measure 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. The ordinance or other regulatory mechanism shall apply, at a minimum, to new development and redevelopment sites that discharge to the MS4 and that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. The ordinance or other regulatory mechanism shall, at a minimum, be equivalent with the technical requirements set forth in the UPDES Storm Water General Permit for Construction Activities, UTR300000 which can be found at <http://www.waterquality.utah.gov/UPDES/stormwatercon.htm>. Existing local requirements to apply storm water controls at smaller sites shall be retained. The ordinance or other regulatory mechanism shall require BMP selection, design, installation, operation and maintenance standards necessary to protect water quality and reduce the discharge of pollutants to the MS4.

Activity/Product Related BMPs	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Currently the City has a storm water ordinance that addresses requirements for construction sites that are one acre or greater. The ordinance will be reviewed to ensure that that it addresses the most current General Permit requirements	Update the storm water ordinance to reflect the new General Permit requirements	Copy of updated ordinance		See Minimum Performance Measure 4.2.3.2 & 4.2.3.2.1 in Chapter 4	Feb 2012	Storm Water Coalition City Attorney City Administration City Council City Engineer

Minimum Performance Measure 4.2.5.2 – Develop an enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism. Procedures for enforcement of BMPs include:
Minimum Performance Measure 4.2.5.2.1 – Procedures that include specific processes and sanctions to minimize the occurrence of, and obtain compliance from, chronic and recalcitrant violators which shall include appropriate, escalating enforcement procedures and actions.
Minimum Performance Measure 4.2.5.2.2 – Documentation on how the requirements of the ordinance or other regulatory mechanism will protect water quality and reduce the discharge of pollutants to the MS4. Documentation shall include:

- How long-term storm water BMPs were selected;
- The pollutant removal expected from the selected BMPs; and
- The technical basis which supports the performance claims for the selected BMPs.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
When an updated ordinance is adopted an enforcement strategy will be developed. Document how the ordinance helps to address long-term storm water BMPs, pollutant removal from BMPs, and the technical basis for the BMPs	Completed enforcement strategy with documentation by due date	Written enforcement strategy with documentation	IDC LUPM	12 hours \$720	Feb 2012	City Attorney City Administration City Council Public Works City Engineer

Minimum Performance Measure 4.2.5.3 – The Permittee’s new development/redevelopment program must have requirements or standards to ensure that any storm water controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality.

Minimum Performance Measure 4.2.5.3.1 – The Permittee’s new development/redevelopment program should include non-structural BMPs such as requirements and standards to minimize development in areas susceptible to erosion and sediment loss; to minimize the disturbance of native soils and vegetation; to preserve areas in the municipality that provide important water quality benefits; to implement measures for flood control; and to protect the integrity of natural resources and sensitive areas.

Minimum Performance Measure 4.2.5.3.2 – For new development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, the program shall include a process to evaluate and encourage a Low Impact Development (LID) approach which encourages the implementation of structural BMPs, where practicable, that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality. Structural controls may include green infrastructure practices such as rainwater harvesting, rain gardens, permeable pavement, and vegetated swales. The selection and design of post-construction controls must take into consideration clogging or obstruction issues, freeze-thaw problems, effect on slope stability and groundwater, and the ability to effectively maintain the control.

Minimum Performance Measure 4.2.5.3.3 – The Permittee must develop a plan to retrofit existing developed sites that are adversely impacting water quality. The retrofit plan must be developed to emphasize controls that infiltrate, evapotranspire or harvest and use storm water discharges. The plan must include a ranking of control measures to determine those best suited for retrofitting as well as those that could later be considered for retrofitting. The Permittee must include the following when developing the criteria for the retrofit plan:

- Proximity to waterbody
- Status of waterbody to improve impaired waterbodies and protect unimpaired waterbodies
- Hydrologic condition of the receiving waterbody
- Proximity to sensitive ecosystem or protected area
- Any upcoming sites that could be further enhanced by retrofitting storm water controls

Minimum Performance Measure 4.2.5.3.4 – Each Permittee shall develop and define specific hydrologic method or methods for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs in their jurisdiction and to facilitate plan review. Specific criteria which require that Best Management Practices (BMPs) are designed

to treat the water from a specific design storm (e.g., the 2-year, 24-hour event) must be incorporated into the permittee's post-construction minimum control measure and documented in the SWMP. Permittees may allow other unique or complex methodologies.						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Develop a program to minimize impacts to water quality by identifying sensitive areas, considering LID approaches, identifying possible retrofit areas, specify post-construction BMP design criteria, etc.	Program in place to address permit requirements by due date	Written program kept in SWMP	LUPM DIDM	40 hours \$2800	Feb 2012	City Administration Public Works City Engineer Storm Water Coalition
<p>Minimum Performance Measure 4.2.5.4 – All Permittees shall adopt and implement procedures for site plan review which incorporate consideration of water quality impacts. Prior to construction, Permittees shall:</p> <p>Minimum Performance Measure 4.2.5.4.1 – Review Storm Water Pollution Prevention Plans (SWPPPs) for, at a minimum, all new development and redevelopment sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, to ensure that the plans include long-term storm water management measures that meet the requirements of this minimum control measure.</p> <p>Minimum Performance Measure 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 such as industrial parks, commercial strip malls, retail gasoline outlets, restaurants, parking lots, automotive service facilities, street and road construction, and projects located in, adjacent to, or discharging to environmentally sensitive areas.</p> <p>Minimum Performance Measure 4.2.5.4.3 – Permittees shall keep a representative copy of information that is provided to design professionals; and if information is distributed to a large number of design professionals at once, the dates of the mailings and lists of recipients.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Adopt and implement procedures for site plan review to consider the water quality impacts including: SWPPP review, give contractors & developers information regarding preferred design methods, keep documentation	In place procedures to address permit requirements by due date. Develop and keep a copy of information given to design professionals by due date	Written procedure. Copy of design information given to design professionals		20 hours \$1400	Feb 2012	City Administration Public Works City Engineer
<p>Minimum Performance Measure 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. These procedures must ensure adequate ongoing long-term operation and maintenance of approved storm water control measures.</p> <p>Minimum Performance Measure 4.2.5.5.1 – The ordinance or other regulatory mechanism shall include provisions for both construction-phase and post-construction access for Permittees to inspect storm water control measures on private properties that discharge to the MS4 to ensure that adequate maintenance is being performed. The ordinance or other regulatory mechanism may, in lieu of requiring that the Permittee's staff inspect and maintain storm water controls on private property, instead 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</p>						

case, the Permittee must require a maintenance agreement addressing maintenance requirements for any control measures installed on site. The agreement must allow the Permittee to conduct oversight inspections of the storm water control measures and also account for transfer of responsibility in leases and/or deeds. The agreement must also allow the Permittee to perform necessary maintenance or corrective actions neglected by the property owner/operator, and bill or recoup costs from the property owner/operator as needed.

Minimum Performance Measure 4.2.5.5.2 – Permanent structural BMPs shall be inspected at least once during installation by qualified personnel.

Minimum Performance Measure 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, or more frequently as determined by the Permittee to verify and ensure that adequate maintenance is being performed. The Permittee must document its findings in an inspection report which includes the following:

- Inspection date;
- Name and signature of inspector;
- Project location
- Current ownership information
- A description of the condition of the storm water control measure including the quality of: vegetation and soils; inlet and outlet channels and structures; catch basins; spillways; weirs, and other control structures; and sediment and debris accumulation in storage as well as in and around inlet and outlet structures;
- Specific maintenance issues or violations found that need to be corrected by the property owner or operator along with deadlines and reinspection dates.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
A procedure has been developed and should be used until an updated ordinance can be implemented – see Appendix E Procedure Relating to MS4 Regulation 4.2.5.5.1.	Use Procedure until an ordinance is amended	Procedure in Appendix E.		See Minimum Performance Measure 4.2.3.2 & 4.2.3.2.1 in Chapter 4	Procedure in Place Ordinance - Feb 2012	Storm Water Coalition City Attorney City Administration City Council City Engineer
Minimum Performance Measure 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. Training shall be provided or made available for staff in the fundamentals of long-term storm water management through the use of structural and non-structural control methods. The training records to be kept include dates, activities or course descriptions, and names and positions of staff in attendance.						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Staff whose job duties are related to the storm water will be trained on the post-construction program	Have all related staff attend at the specified frequency	Attendance roll, training invoice	ET	24 hours \$720	Annually	City

Minimum Performance Measure 4.2.5.7 – The Permittee must maintain an inventory of all post-construction structural storm water control measures installed and implemented at new development and redeveloped sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. This inventory shall include both public and private sector sites located within the Permittee’s service area.

Minimum Performance Measure 4.2.5.7.1 – Each entry to the inventory must include basic information on each project, such as project’s name, owner’s name and contact information, location, start/end date, etc. In addition, inventory entries must include the following for each project:

- Short description of each storm water control measure (type, number, design or performance specifications);
- Short description of maintenance requirements (frequency of required maintenance and inspections); and
- Inspection information (date, findings, follow up activities, prioritization of follow-up activities, compliance status).

Minimum Performance Measure 4.2.5.7.2 – Based on inspections conducted pursuant to Part 4.2.5.5., the Permittee must update the inventory as appropriate where changes occur in property ownership or the specific control measures implemented at the site.

Activity/Product	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Maintain an inventory of all post-construction stormwater controls for required sites, update the inventory as necessary	Update the inventory as required construction sites are built	Inventory forms with required information		4 hours \$120	Feb 2012/ As Needed Thereafter	Public Works

STORM WATER MANAGEMENT PLAN

CHAPTER 7

POLLUTION PREVENTION/GOOD HOUSEKEEPING

POLLUTION PREVENTION/GOOD HOUSEKEEPING

The Pollution Prevention/Good Housekeeping for municipal operations minimum control measure is a key element of the small MS4 stormwater management program. This measure requires the small MS4 operator to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

While this measure is meant primarily to improve or protect receiving water quality by altering municipal or facility operations, it also can result in a cost savings for the small MS4 operator, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

Recognizing the benefits of pollution prevention practices, the rule requires an operator of a regulated small MS4 to:

- Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system
- Include employee training on how to incorporate pollution prevention/good housekeeping practices into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from the EPA, the State, or County Stormwater Coalitions
- Determine the appropriate best management practices (BMPs) and measureable goals for this minimum control measure.

The intent of this control measure is to ensure that existing municipal, State or Federal operations are performed in ways that will minimize contamination of stormwater discharges. The small MS4 operator to consider the following components when developing their program for this measure:

- ***Maintenance activities, maintenance schedules, and long-term inspection procedures*** for structural and non-structural controls to reduce floatables and other pollutants discharged from the separate storm sewers
- ***Controls for reducing or eliminating the discharge of pollutants*** from areas such as roads and parking lots, maintenance and storage yards (including salt/sand storage and snow disposal areas), and waste transfer stations. These controls could include programs

that promote recycling (to reduce litter), minimize pesticide use, and ensure the proper disposal of animal waste

- ***Procedures for the proper disposal of waste*** removed from separate storm sewer systems and areas listed in the bullet above, including dredge spoil, accumulated sediments, floatables, and other debris
- ***Ways to ensure that new flood management projects assess the impacts on water quality*** and examine existing projects for incorporation of additional water quality protection devices or practices. EPA encourages coordination with flood control managers for the purpose of identifying and addressing environmental impacts from such projects

The effective performance of this control measure hinges on the proper maintenance of the BMPs used, particularly for the first two bullets above. For example, structural controls, such as grates on outfalls to capture floatables, typically need regular cleaning, while non-structural controls, such as training materials and recycling programs, need periodic updating.

Measurable goals, which are required for each minimum control measure, are meant to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should consider the needs and characteristics of the operator and the area served by its small MS4. The measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. For example, an MS4 program goal might be to incorporate the use of road salt alternatives for highway deicing and reduce traditional road salt use by 50 percent in the first year of the permit term.

Pollution Prevention and Good Housekeeping for Municipal Operations Strategy

The General Permit states that “All Permittees shall develop and implement an operations and maintenance (O & M) program for Permittee-owned or operated facilities, operations and structural storm water controls that includes standard operating procedures (SOPs) or similar type of documents and a training component that have the ultimate goal of preventing or reducing pollutant runoff from all Permittee-owned or operated facilities and operations. 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. The Permittee must develop an inventory of all such Permittee-owned or operated facilities. The Permittee must review this inventory annually and update as necessary.” The following is a summary table listing each minimum performance measure, activities or products, measurable goals, how documentation will be kept, and responsible party to meet the requirements of the General Permit.

Activity/Product Related BMPs	Measurable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
<p>Create a list of City owned facilities. Assess the list for each facilities potential to discharge pollutants and identify any high priority facilities</p>	<p>Finish a written list of each facility the City owns with associated pollutants, listing any facilities that are high priority by the due date. Update the list as new facilities are built</p>	<p>Written document that is kept in this SWMP</p>		<p>3 hours \$90</p>	<p>Jun 2011</p>	<p>Public Works</p>

Minimum Performance Measure 4.2.6.1 – Permittees shall develop and keep current a written inventory of Permittee-owned or operated facilities and storm water controls that may include but is not limited to: Composting facilities, Equipment storage and maintenance facilities, Fuel farms, Hazardous waste disposal facilities, Hazardous waste handling and transfer facilities, Incinerators, Landfills, Landscape maintenance on municipal property, Materials storage yards, Pesticide storage facilities, Public buildings, including libraries, police stations, fire stations, municipal buildings, and similar Permittee-owned or operated buildings, Public parking lots, Public golf courses, Public swimming pools, Public works yards, Recycling facilities, Salt storage facilities, Solid waste handling and transfer facilities, Street repair and maintenance sites, Vehicle storage and maintenance yards, Permittee-owned and/or maintained structural storm water controls. Facilities covered under the General UPDES Permit for Storm Water Discharges Associated with Industrial Activities do not need to develop an O & M program but must instead maintain the Storm Water Pollution Prevention Plan (SWPPP) required by that permit.

Minimum Performance Measure 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: sediment, nutrients, metals, hydrocarbons (e.g., benzene, toluene, ethylbenzene and xylene), pesticides, chlorides, and trash. Other pollutants may be associated with, but not generated directly from, the municipally-owned or operated facilities, such as bacteria, chlorine, organic matter, etc. Therefore, the Permittee must determine additional pollutants associated with its facilities that could be found in storm water discharges. A description of the assessment process and findings must be included in the SWMP document.

Minimum Performance Measure 4.2.6.3 – Based on the assessment required in Part 4.2.6.2., the Permittee must identify as “high-priority” those facilities or operations that have a high potential to generate storm water pollutants. Among the factors that must be considered in giving a facility a high priority ranking is the amount of urban pollutants stored at the site, the identification of improperly stored materials, activities that must be performed outside (e.g., changing automotive fluids), proximity to waterbodies, poor housekeeping practices, and discharge of pollutant(s) of concern to impaired water(s).

Minimum Performance Measure 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. The SOPs shall include BMPs that, when applied to the municipal operation, facility or storm water control will protect water quality and reduce the discharge of pollutants to the MS4. Low impact development (LID) techniques should be considered for all new and redeveloped Permittee-owned or operated facilities. The SOPs shall include appropriate pollution prevention and good housekeeping procedures for all of the following types of facilities and/or activities listed below:

Minimum Performance Measure 4.2.6.4.1 – Buildings and facilities: The O & M program shall address, but is not limited to: Permittee-owned or operated offices, police and fire stations, pools, parking garages, and other Permittee-owned or operated buildings or utilities. The SOPs must address the use, storage and disposal of chemicals and ensure thorough employee training, that those responsible for handling these products understand and implement the SOPs. All Permittee-owned or operated facilities must develop and ensure that spill prevention plans are in place, if applicable, and coordinate with the local fire department as necessary. The SOPs must address dumpsters and other waste management which includes, but is not limited to, cleaning, washing, painting and other maintenance activities. The O & M program must include schedules and SOPs for sweeping parking lots and keeping the area surrounding the facilities clean to minimize runoff of pollutants. Within 180 days of receiving coverage from this Permit, all Permittees must develop an inventory of all floor drains inside all Permittee-owned or operated buildings. The inventory must be kept current. The Permittee must ensure that all floor drains discharge to appropriate locations. Within 180 days of receiving coverage from this Permit, all Permittees must develop an inventory including a map of all storm drains located on the property of all Permittee-owned or operated buildings and facilities. The Permittee must ensure that only storm water is allowed into these drains and that the appropriate BMPs are in place to minimize pollutants from entering the MS4.

Minimum Performance Measure 4.2.6.4.2 – Material storage areas, heavy equipment storage areas and maintenance areas. Permittees shall develop and implement SOPs to protect water quality at each of these facilities owned or operated by the Permittee and not covered under the General UPDES Permit for Storm Water Discharges Associated with Industrial Activities.

Minimum Performance Measure 4.2.6.4.3 – Parks and open space. The O & M program shall address, but is not limited to: SOPs for the proper application, storage, and disposal of fertilizer, pesticides, and herbicides including minimizing the use of these products and using only in accordance with manufacturer’s instruction; sediment and erosion control; evaluation of lawn maintenance and landscaping activities to ensure practices are protective of water quality such as, proper disposal of lawn clippings and vegetation, and use of alternative landscaping materials such as drought tolerant plants. The SOPs must address the management of trash containers at parks and other open spaces which include scheduled cleanings and establishing a sufficient number of containers, and for placing signage in areas concerning the proper disposal of pet wastes. The SOPs must also address the proper cleaning of maintenance equipment, building exterior, trash containers and the disposal of the associated waste and wastewater. Permittees shall implement park and open space maintenance pollution prevention/good housekeeping practices at all park areas, and other open spaces owned or operated by the Permittee.

Minimum Performance Measure 4.2.6.4.4 – Vehicle and Equipment. The O & M program shall address, but it not limited to: SOPs that address vehicle maintenance and repair activities that occur on Permittee-owned or operated vehicles. BMPs should include using drip pans and absorbents under or around leaky vehicles and equipment or storing indoors where feasible. Fueling areas for Permittee-owned or operated vehicles shall be evaluated. If possible, place fueling areas under cover in order to minimize exposure. The O & M program shall include SOPs to ensure that vehicle wash waters are not discharged to the MS4 or surface waters. This Permit strictly prohibits such discharges.

Minimum Performance Measure 4.2.6.4.5 – Roads, highways, and parking lots. The O & M program shall address, but it not limited to: SOPs and schedule for sweeping streets and Permittee-owned or operated parking lots and any other BMPs designed to reduce road and parking lot debris and other pollutants from entering the MS4; road and parking lot maintenance, including pothole repair, pavement marking, sealing and repaving; cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas; right-of-way maintenance, including mowing, herbicide and pesticide application; and municipally-sponsored events such as large outdoor festivals, parades or street fairs. The Permittee must ensure that areas used for snow disposal will not result in discharges to receiving waters.

Minimum Performance Measure 4.2.6.4.6 – Storm water collection and conveyance system. The O & M program shall address, but is not limited to: SOPs and schedule for the regular inspection, cleaning, and repair of catch basins, storm water conveyance pipes, ditches and irrigation canals, culverts, structural storm water controls, and structural runoff treatment and/or flow control facilities. Permittees shall implement catch basin cleaning, storm water system maintenance, scheduled structural BMP inspections and maintenance, and pollution prevention/good housekeeping practices. Permittees should prioritize storm sewer system maintenance, with the highest priority areas being maintained at the greatest frequency. Priorities should be driven by water quality concerns, the condition of the receiving water, the amount and type of material that typically accumulates in an area, or other location-specific factors. All Permittee-owned or operated storm water structural BMPs including but not limited to, swales, retention/detention basins or other structures must be inspected annually to ensure that they are properly maintained to reduce the discharge of pollutants into receiving waters. Permittees shall develop, ensure, and

document proper disposal methods of all waste and wastewater removed from the storm water conveyance system. These disposal methods apply to, but are not limited to, street sweeping and catch basin cleaning. Materials removed from the MS4 should be dewatered in a contained area and discharged to the local sanitary sewer (with approval of local authorities) where feasible. The solid material will need to be stored and disposed of properly to avoid discharge during a storm event. Any other treatment and disposal measures must be reviewed and approved by the Division. Some materials removed from storm drains and open channels may require special handling and disposal, and may not be authorized to be disposed of in a landfill.

Minimum Performance Measure 4.2.6.4.7 – Other facilities and operations Permittees shall identify any facilities and operations not listed above that would reasonably be expected to discharge contaminated runoff, and develop, implement, and document the appropriate BMPs to protect water quality from discharges from these sites in the O & M program.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Even though many facilities the City own are not high priority SOPs have been developed for many facilities and activities that have the potential to contaminate storm water these SOPs can be found in Appendix H.	Update SOPs to reflect current City operations by due date	Updated SOPs kept in this SWMP		8 hours \$240	Jun 2011	Public Works

Minimum Performance Measure 4.2.6.5 – If a Permittee contracts with a third-party to conduct municipal maintenance or allows private developments to conduct their own maintenance, the contractor shall be held to the same standards as the Permittee. This expectation must be defined in contracts between the Permittee and its contractors or the contractors of private developments. The Permittee shall be responsible for ensuring, through contractually-required documentation or periodic site visits that contractors are using appropriate storm water controls and following the standard operating procedures, storm water control measures, and good housekeeping practices of the Permittee.

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Currently the City does not contract with any third-party to conduct municipal maintenance activities.	None at this time. If third-party is used in the future a contract that requires the same storm water standards the City is held to will be developed and used	None at this time. If ever necessary a copy of the signed contract will be used		None Currently 4 hours \$120 if needed	None Currently As needed in the future	City Administration Public Works

Minimum Performance Measure 4.2.6.6 – An O & M program designed for Permittee-owned or operated facilities shall include the following inspections:

Minimum Performance Measure 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. The Permittee must look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The weekly inspections must be tracked in a log for every facility and records kept with the SWMP document. The inspection log should also include any identified deficiencies and the corrective actions taken to fix the deficiencies.

Minimum Performance Measure 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, with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling

<p>areas, and similar pollutant-generating areas. The quarterly inspection results must be documented and records kept with the SWMP document. This inspection must be done in accordance with the developed SOPs. An inspection report must also include any identified deficiencies and the corrective actions taken to remedy the deficiencies.</p> <p>Minimum Performance Measure 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 (unless climate conditions preclude doing so, in which case the Permittee must attempt to evaluate the discharges four times during the wet season). Any observed problems (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources or controls must be remedied to prevent discharge to the storm drain system. Visual observations must be documented and records kept with the SWMP document. This inspection must be done in accordance with the developed SOPs. The inspection report must also include any identified deficiencies and the corrective actions taken to remedy the deficiencies.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Perform inspections of “high priority” facilities and storm water discharges as necessary	Identify any high priority sites and perform inspections as specified in regulation. Develop form to track inspection results	Inspection record for high priority facilities		2 hours \$60- for weekly inspections 4 hours \$120-for quarterly inspections	Jun 2011 for inspection form if high priority sites are identified Weekly And Quarterly Inspections if necessary	Public Works City Engineer
<p>Minimum Performance Measure 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. This process must include consideration of controls that can be used to minimize the impacts to site water quality and hydrology while still meeting project objectives. A description of this process must be included in the SWMP document.</p> <p>Minimum Performance Measure 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. A description of this process and determinations should be included in the SWMP document.</p>						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/Frequency	Responsible Party
Develop and implement a process to assess water quality impacts of new flood management structural controls. Assess existing flood management structural controls for water quality impacts	Develop a written process by due date	Written process kept in SWMP		4 hours \$120	Jun 2011	Public Works City Engineer
<p>Minimum Performance Measure 4.2.6.8 – Construction Projects, Public construction projects shall comply with the requirements applied to private projects. All construction projects disturbing greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, owned or operated by the Permittee are required to be covered under the General UPDES Permit for Storm Water Discharges Associated with Construction Activities. All public projects approved after the effective date of this Permit shall include construction and post-construction controls selected and implemented pursuant to the requirements in Parts 4.2.4. and 4.2.5.</p>						

Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/ Frequency	Responsible Party
The City will follow the UPDES permit process for all private and public projects.	Use the UPDES Storm Water Inspection Form for SWPPP Compliance found in Appendix C and the SWPPP Checklist found in Appendix C which address construction and post construction controls	Keep records of the UPDES Storm Water Inspection Form for SWPPP Compliance and the SWPPP Checklist		1 hour for each form Assume 2 form completed per month \$60	Dec 2010	Public Works City Engineer
Minimum Performance Measure 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. The Permittee shall identify target employees to participate in the training sessions. Training shall address the importance of protecting water quality, the requirements of this Permit, operation and maintenance requirements, inspection procedures, ways to perform their job activities to prevent or minimize impacts to water quality, SOPs for the various Permittee-owned or operated facilities and procedures for reporting water quality concerns, including potential illicit discharges. Follow-up training shall be provided as needed to address changes in procedures, methods or staffing.						
Activity/Product	Measureable Goal	Documentation	Related BMPs	Resources Needed	Due Date/ Frequency	Responsible Party
Staff whose job duties are related to the storm water will be trained on the post-construction program	Have all target employees attend at the specified frequency	Attendance roll, training invoice	ET	24 hours \$720	Annually	City

STORM WATER MANAGEMENT PLAN

CHAPTER 8

CONCLUSION

CONCLUSION

The new General Permit provides clarification and gives many additional requirements to cities that are classified as small MS4s. In order to strive for permit compliance the small MS4s will need to devote additional time, effort, and resources to their storm water program. The time and money required to meet each minimum performance measure provided in this SWMP are only estimates. It is recommended that the City evaluate these estimated costs and also evaluate their current storm water utility rate to determine if the current revenue will cover the cost of these additional requirements.

The ultimate goal of this SWMP document should to make the local rivers and streams cleaner; to do this an effective program is needed. The EPA has provided guidance on how to evaluate your program effectiveness and its goals. The following are the levels of effectiveness:

- Level 1 – Compliance with Activity Bases Permit Requirements
- Level 2 – Changes in Attitudes, Knowledge, & Awareness
- Level 3 – Behavioral Change & BMP Implementation
- Level 4 – Load Reductions
- Level 5 – Changes in Urban Runoff & Discharge Quality
- Level 6 – Changes in Receiving Water Quality

The new General Permit requirements will challenge each and every community classified as a small MS4. As stated in the introduction the measurable goals are mandated by the EPA and a community must be showing improvement with their program and goals over time. This SWMP is intended to be a living document with tasks, goals, and BMPs added and deleted as new management practices arise and other management practices are found to be ineffective. Communities that are making a concerted effort to comply with permit requirements are less likely to be penalized when inspected and audited. Penalties for not complying with General Permit requirements can be severe including fines as much as \$25,000 per day per violation and jail time of up to six months for tampering or falsifying information (see General Permit sections 6.2, 6.10, & 6.11).

The following appendices contain reference documents and examples of what neighboring communities are doing to meet permit requirements. The appendices are also meant to be used a central location for documentation purposes.

"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."

Name of Certifying Official, Title

Date (mm/dd/yy)

Chapter 1 - Introduction
Chapter 2 - Public Education and Outreach
Chapter 3 - Public Participation and Involvement
Chapter 4 - Illicit Discharge Detection and Elimination
Chapter 5 - Construction Site Runoff Control
Chapter 6 - Post-Construction Runoff Control
Chapter 7 - Pollution Prevention/Good Housekeeping
Chapter 8 - Conclusion
Appendix A - Public Education and Outreach References and Documentation
Appendix B - Public Involvement and Participation References and Documentation
Appendix C - Illicit Discharge Detection and Elimination References and Documentation
Appendix D - Construction Site Runoff Control References and Documentation
Appendix E - Post-Construction Runoff Control References and Documentation
Appendix F - Pollution Prevention and Good Housekeeping References and Documentation
Appendix G - Small MS4 UPDES General Permit
Appendix H - Standard Operating Procedures (SOPs)
Appendix I - Best Management Practices
Appendix J – NOI, Ordinances & Resolutions, and Interlocal Agreement