

Unincorporated Weber County

# Storm Water Management Plan

July 2016

Weber County Engineering 2380  
Washington Blvd., Suite 240  
Ogden, UT 84401  
(801) 399-8374

## Preface

### 2016 Storm Water Management Plan Update

#### Summary

Attached herewith is a summary of the 2016 update of the 2010 of the Weber County Storm Water Management Plan.

This 2016 update shows the current delegation authority to Sean Wilkinson as the Operations Director and Jared Andersen as the County Engineer. A new Organizational chart has also been prepared showing the current staffing for each the affected or responsible Departments.

A Table of Contents has been added to show the contents of the Management Plan and location of the various elements of the plan.

Notations and changes in the General Information section of the report again show the listing of Mr. Wilkinson and Mr. Andersen as the responsible persons for the Storm Water System as well as the updated organization chart for the County Organization.

It is also noted that the County does drain to several impaired waters namely Pineview Reservoir and sections of the Ogden and Weber Rivers with Total Maximum Daily Load (TMDL) restrictions for pollutant loadings to these water bodies.

It is noted that as to 'Shared Responsibilities' that the inter-local agreements included in the 2010 plan have expired without replacement. So none of these old agreements are at this time found to still be in effect and have been removed from the SWMP. Staff, however, still works cooperatively with the cities of Weber County through the Weber County Storm Water Coalition but now as a Coalition member rather than as the leader for the formation of the Coalition which had been our original participation.

Regarding the Minimum Control Measures (MCM's), new emphasis through the current MS4 permit is noted requiring 'public outreach and education' and 'public involvement and participation', to not just the building , construction industry, and general public but now to Commercial, Industrial and Agricultural audiences for which new programs will have to be developed through the course of the new permit.

Regarding Illicit Discharge Detection and Elimination much more is being required by the county as far as detection, elimination, and enforcement.

For 'construction site runoff control', two new sections of Best Management Practices have been added which has come to the County through the Registered Storm Water Inspector (RSI) Training program developed by the Utah Chapter of the American Public Works Association. These new BMP's include the full BMP Manual in use by Salt Lake County as well as selected sections of the California Stormwater BMP Handbook as recommended for use through the RSI training program.

# Storm Water Management Plan

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## Table of Contents

Table of Contents

Storm Water Management Plan – Certification

Delegation Authority

Weber County MS4 – Location Map

General Information

Introduction

- Community Information
- Responsible Persons
- County Organization Chart
- Storm Water Mapping
- Priorities and Concerns
- Impaired Waters
- Shared Responsibilities
- Minimum Control Measures (MCM's)
- Appendices

Public Education and Outreach

Minimum Control Measure 1

- 1.1 Introduction
- 1.2 Measurable Goals and Fiscal Ability
- 1.3 Best Management Practices (BMP's)

Public Involvement and Participation

Minimum Control Measure 2

- 2.1 Introduction
- 2.2 Pollutants of Concern
  - Sediment
  - Floatables
  - Bacteria & Viruses
  - Oxygen Demand Substances
  - Nutrients
  - Oil & Grease
  - Pesticides, Herbicides & Fertilizers
  - Metals
  - Toxic Substances
- 2.3 General Practices
  - Household and Home Maintenance

## Public Involvement and Participation

### Minimum Control Measure 2

#### 2.3 General Practices (Cont.)

Lawn & Garden

Automotive

Commercial

Industrial

Agricultural

#### 2.4 Measurable Goals and Fiscal Ability

#### 2.5 Best Management Practices (BMP's)

## Illicit Discharge Detection and Elimination

### Minimum Control Measure 3

#### 3.1 Introduction

#### 3.2 Measurable Goals and Fiscal Ability

#### 3.3 Best Management Practices (BMP's)

## Construction Site Runoff Control

### Minimum Control Measure 4

#### 4.1 Introduction

#### 4.2 Pollutants of Concern

Sediment

Nutrients

Oil & Grease

Other Toxic Substances

Miscellaneous Wastes

#### 4.4 Measurable Goals and Fiscal Ability

#### 4.5 Best Management Practices (BMP's)

## Post Construction Storm Water Management

### Minimum Control Measure 5

#### 5.1 Introduction

#### 5.2 Pollutants of Concern

Solids

Nutrients

Metals

Oxygen Demand Substances

Bacteria & Viruses

Oil & Grease

Floatables

Other Toxic Materials (priority Pollutants)

Miscellaneous Wastes

#### 5.3 Measurable Goals and Fiscal Ability

#### 5.4 Best Management Practices (BMP's)

## Pollution Prevention / Good Housekeeping

### Minimum Control Measure 6

#### 6.1 Introduction

6.2 Pollutants of Concern

Sediments

Nutrients

Metals

Oxygen Demand Substances

Bacteria & Viruses

Oil, Grease & Hydrocarbons

Floatables

Table 6.1 Potential Pollutants of Concern Associated with Municipal Activities

6.3 Measurable Goals and Fiscal Ability

6.4 Best Management Practices (BMP's)

Appendices

Appendix A – Supplemental Guide for Contractors

Appendix B – Supplemental Guide for Public Works

Appendix C – IDDE Program

Appendix D – Documentation

Appendix E – Ordinances

Appendix F – State/County Permits

Appendix G – Maps

Additional Information

Stormwater Resources

# Storm Water Management Plan

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Permittee: Weber County  
Permit Number: UTR090022  
Location of MS4: Northern part of the Wasatch Front  
Submitted with this permit is the following:

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

## Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations"

Signed: \_\_\_\_\_ Date: \_\_\_\_\_  
Chairman Weber County Commission

# Storm Water Management Plan

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## Delegation Authority

I, \_\_\_\_\_ designate the person(s) or specifically described position(s) below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the MS4 Permit. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

*Weber County Engineer*

*Jared Andersen PE  
2380 Washington Blvd.  
Ogden, UT 84401  
(801) 399-8374*

*Director of Operations*

*Sean Wilkinson  
444 24th Street  
Ogden, UT 84401  
(801) 625-3850*

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in UTR090022, Section 6.8 and that the designee above meets the definition of a "duly authorized representative" as set forth in UTR090022, Section 6.8.

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.

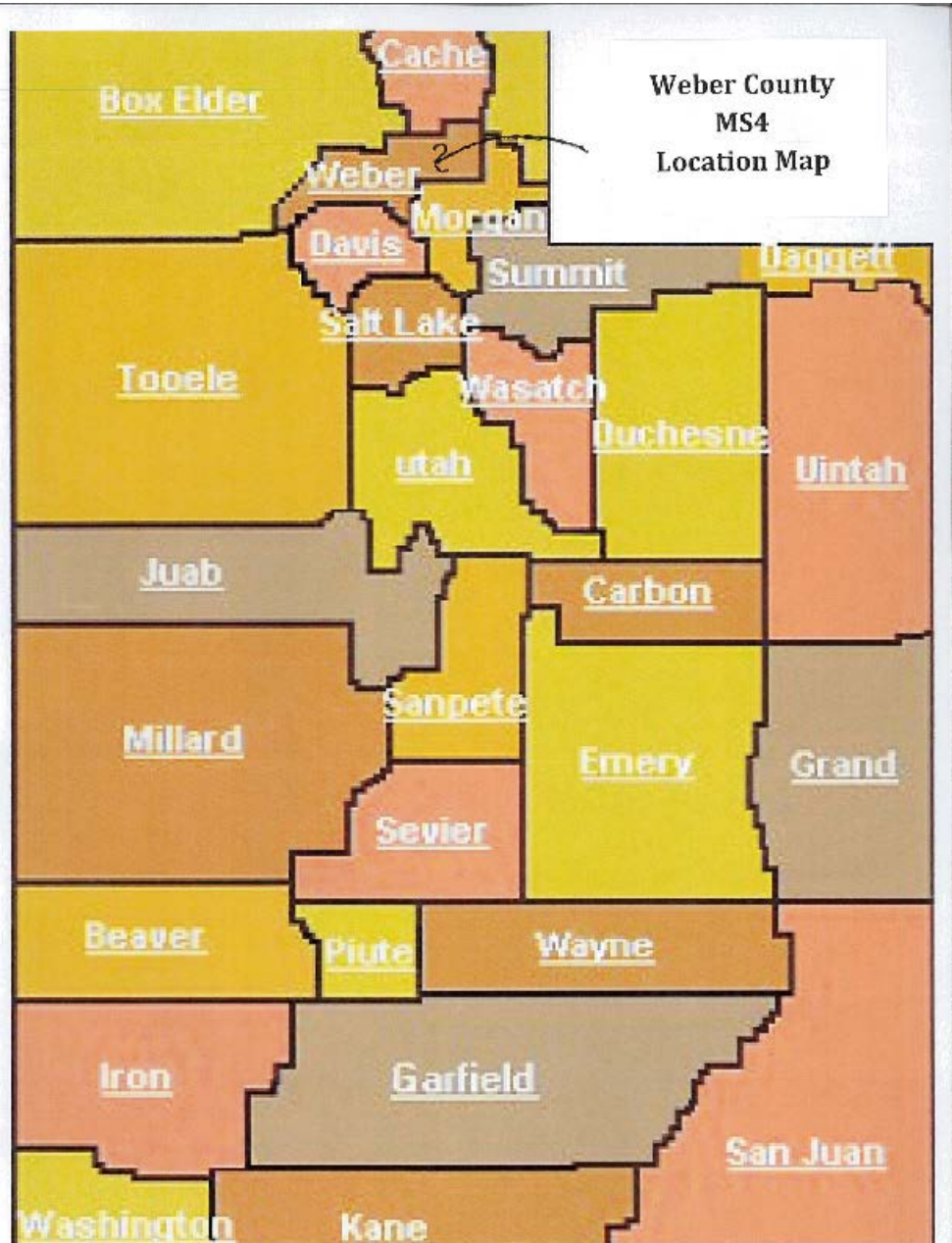
*Name: Kerry Gibson*

*Company: Weber County*

*Title: Chairman Weber County Commission*

*Signature: \_\_\_\_\_*

*Date: \_\_\_\_\_*





*General Information*

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# Storm Water Management Plan

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## General Information

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- **Introduction**

The Clean Water Act required that all communities within certain metropolitan areas adopt a Storm Water Management Plan by March 8, 2003 and said plan to be updated on a regular basis.

Unincorporated Weber County hereinafter referred to as “County”, in the Wasatch Front Metropolitan area falls under this requirement. This plan is intended to address the requirements for the County.

As a minimum, these requirements consist of community information, naming responsible persons, mapping, addressing six Minimum Control Measures (MCM’s), establishing Best Management Practices (BMP’s), measurable goals and addressing the fiscal requirements of the plan. All of these items are discussed below. This document is being developed in accordance with the Small MS4 General UPDES Permit UTR090000. Weber County has been issued permit #UTR090022.

- **Community Information**

The Weber County is located on the Wasatch Front. The Unincorporated areas of Weber County mainly include the western and the eastern portions of the county. The eastern portion of the County is very mountainous, and has several water bodies, including Pineview Reservoir and Causey Reservoir. The population of the entire county from the 2010 Census is 231,236. The majority of the land use in the community is agricultural with some residential, commercial and industrial.

- **Responsible Persons**

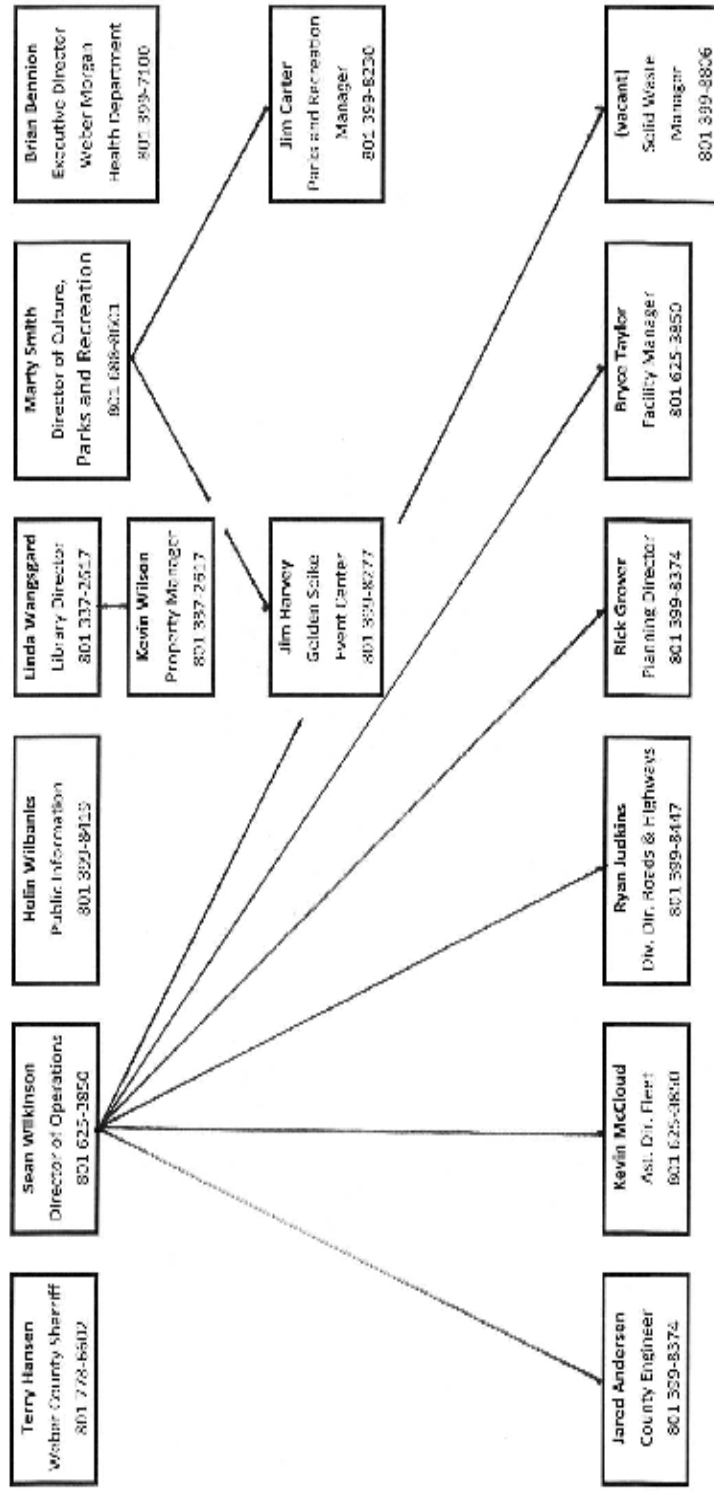
The responsible persons for the Storm Water System are the current Operations Director, and The County Engineer:

Sean Wilkinson, Operations Director  
444 24<sup>th</sup> Street  
Ogden, UT 84401  
Office: (801) 625-3850

Jared Andersen PE, Weber County Engineer  
2380 Washington Blvd., Suite 240  
Ogden, UT 84401  
Office: (801) 399-8374

Please see the included Organizational Chart for additional responsibilities.

County Organization  
 Board of Commissioners  
**Matthew G. Bell, Kerry W. Gibson, James Ebert**  
 801.399.8406



## General Information

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### General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)

#### Session 1 - Organization Chart Department Responsibilities

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##### County Commission

- Liaison with the public

##### Director of Operations

- Liaison with County Commission
- General coordination of the Storm Water Pollution Prevention (SWPP) program

##### County Engineer

- Annual report
- Updating SWPPP
- Tracking and documentation of activities and actions
- Database updates
- Engineering support
- Help with all reporting
- Oversee SWPP program specifics and work with department heads
- Storm drain mapping
- Updating storm drain ordinances

##### Division Director – Roads and Highways

- Streets dept. maintenance work area
- Streets dept. equipment operation
- Equipment maintenance for streets dept.
- Training streets dept. personnel
- Chemicals storage in work area
- Snow plowing program
- Street sweeping program
- Salt and materials storage stockpile areas
- Metal fabrication area
- Weed control
- Responsible for shared facilities and general work areas including:
  - o Large equipment wash area
  - o Fueling station
  - o Salt and materials storage stockpile areas
  - o Storm drain system maintenance
  - o General BMP maintenance
  - o Small vehicle wash area

## Session 1 - Organization Chart Department Responsibilities

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### Facility Manager

- Mowing program
- Snow removal

### Fleet Management

- Fleet department maintenance work area
- Purchase fleet vehicles
- Fleet maintenance (Done at 3<sup>rd</sup> party shops)

### Planning Director

- Low Impact Development Coordinator

### Solid Waste Management

- Transfer Station
- C&D Landfill
- Compost Facility

### Parks and Recreation Manager

- Parks dept. maintenance work area
- Pesticide, Herbicide, and Fertilizer (PHF) program
- Training parks personnel
- Chemical and fertilizer storage in work area
- Parks department equipment operation and maintenance
- Mowing program

### Golden Spike Event Center Manager

- Building Facilities
- Grounds Maintenance
- Chemical Storage
- Equipment operation and maintenance
- Training personnel
- Salt pile storage

### Weber County Sheriff Facility Manager

- Weber County Sheriff's 12<sup>th</sup> Street Complex
- Kiesel Facility
- Animal Shelter
- Monte Trailhead Office

### Ice Sheet Director

- Building Maintenance
- Grounds Maintenance

## General Information

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- **Storm Water Mapping**

Included with this Plan, in Appendix G, is a map showing the storm drain system of the County. All discharges from the County are indicated. Master Plan pipes are also shown on the map.

- **Priorities and Concerns**

There have been pollutants of concern added to the different Minimum Control Measures. Please refer to the MCMs to view the concerns for each different area.

- **Impaired Waters**

Weber County currently discharges to Pineview Reservoir, portions of the Weber and Ogden Rivers, each currently on the State of Utah TMDL List.

- **Shared Responsibilities**

The County is not currently entered into any inter-local agreements. The County does participate however in the Weber County Storm Water Coalition working together the member cities with parts of various Minimum Control Measures.

- **Minimum Control Measures (MCM's)**

The Phase II Rule of the Clean Water Act defines a small municipal separate storm sewer systems (MS4s) storm water management program (SWMP), as a program comprising six elements that are expected to result in significant reductions of pollutants discharged into receiving water bodies within the State of Utah. The six MS4 program elements, termed "minimum control measures," are:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post Construction Storm Water Management
6. Pollution Prevention/Good House Keeping

They are discussed in the order given with the Measurable Goals, Implementation Schedule, and Fiscal Ability for each BMP. The format for the majority of the BMPs is similar to other communities along the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan.

The measurable goals are mandated by the EPA. A community must show improvement over time with these goals. The Implementation Schedule is also included in the section, indication when the goals will be reached. Fiscal Ability is the ability of the County to properly administer the BMPs. The table in the section briefly discusses the plan of the County's to meet these goals. Best Management Practices (BMP) gives the details for the goals and provides information for staff and the public to implement these practices.

## **General Information**

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- **Appendices**

This Storm Water Management Plan includes several appendices, which are as follows.

1. Appendix A – Supplemental Guide for Contractors
2. Appendix B – Supplemental Guide for Public Works
3. Appendix C – IDDE Program
4. Appendix D – Documentation
5. Appendix E – Ordinances
6. Appendix F – State/County Permits
7. Appendix G – Maps

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# Public Education and Outreach

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## Minimum Control Measure 1

### 1.1 Introduction

The County is committed to participate with the incorporated cities within Weber County to meet the requirements of the Public Education and Outreach MCMs. The County provides materials and trainers in support of the Weber County Storm Water Coalitions requirements for annual Registered Stormwater Inspector training, assisting the Coalition to meet its annual requirement to the Utah Storm Water Coalition. It also participates in the Weber County Annual Storm Water Fair put on for 4<sup>th</sup> grade classes within the County. It has also participated in annual contractors training in regards to the construction general permit or CGP. It is also committed to participate in paying its proportional share as a coalition member in media and public relations, publications and advertisements, and school outreach programs. The County willingly responds to concerns from local city officials and relevant public committee recommendations.

With the adoption of the 2016 MS4 permit the County has committed to providing public outreach to four audiences of Residential, Commercial, Industrial, and Agricultural county constituents. The County has actively participated in the past with regards to the Residential Industry, Construction Industry, and participating in funding of public infomercials being broadcast over the local television networks in association with the Weber County Stormwater Coalition.

The County is committed to actively continue its participation in such outreach programs, as well as participating in the development of new outreach programs for the Commercial, Industrial and Agricultural audiences not heretofore targeted beyond that associated with Land Development and Building Construction.

### 1.2 Measurable Goals and Fiscal Ability

Please refer to the tables in this section which summarize the BMP's, Measurable Goals, Implementation Schedule for each BMP.

### 1.3 Best Management Practices (BMP)

Included in Appendix B are the fact sheets that are referenced from the measurable MCM Outreach goals. There is an updated and expanded set of BMPs being installed listed on the Weber County Engineering website that include new BMPs for Low: Impact Development (LID), Retention of the 90<sup>th</sup> Percentile Storm, and Post Construction Greenscape BMP's. The format is similar to other communities on the Wasatch Front, having been originally obtained from Salt Lake County.

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

| MCM | Target                                |                          | Desired Result  | Measurable Goal   | Milestone Date | Associated BMPs | Measure of Success (Effectiveness)                                      |
|-----|---------------------------------------|--------------------------|---|---|----------------|-----------------|---|
|     | Pollutant(s)                          | Audience(s)              |   |   |                |                 |   |
| 1   | Trash, yard waste, chemicals          | Residents and Businesses | 4.2.1.1 To educate audiences about impacts from storm water discharge   | Continue supporting TV ads as a member of the Weber County Storm Water Coalition. | Ongoing        | PEP and UM      | Ads continue to run   |
| 1   | Trash, yard waste, chemicals, erosion | Residents (4th graders)  | 4.2.1.1 To educate audiences on ways to avoid, minimize, and reduce impacts of storm water discharge  | Continue to participate in storm water fair annually                              | Annually       | PEP and CESW    | Fair occurs annually  |
| 1   | Trash, yard waste, chemicals          | Residents and Businesses | 4.2.1.1 To educate audiences on actions individuals can take to improve water quality   | Continue supporting TV ads as a member of the Weber County Storm Water Coalition. | Ongoing        | PEP and UM      | Ads continue to run   |
| 1   | See list in "desired result" column   | General Public           | 4.2.1.2 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including: maintenance of septic systems; effects of outdoor activities, such as lawn care; benefits of on-site infiltration of storm water; effects of automotive work and car washing on water quality; proper disposal of swimming pool water; and property management of pet wastes. | Include information on the website and in Weber County office newsletter.         | Ongoing        | PEP and UM      | Information is current on website and included Weber County newsletter. |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

| MCM | Target                              |  | Desired Result   | Measurable Goal   | Milestone Date | Associated BMPs | Measure of Success (Effectiveness)                               |
|-----|-------------------------------------|--|--|---|----------------|-----------------|--|
|     | Pollutant(s)                        | Audience(s)                                    |  |   |                |                 |  |
| 1   | See list in "desired result" column | Business and Institutions                      | 4.2.1.3 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:<br>Proper lawn maintenance<br>Benefits of appropriate on-site infiltration of storm water<br>Building and equipment maintenance<br>Use of salt or other deicing materials<br>Proper storage of materials<br>Proper management of waste materials and dumpsters<br>Proper management of parking lot surfaces. | Include information on the website and distribute a brochure to businesses with the business license renewal. | annually       | PEP and UM      | Information is current on website and brochures are distributed. |
| 1   | Illicit discharge and waste         | Contractors, Developers, and plan review staff | 4.2.1.4 Reduce adverse impacts from development sites  | Assemble packets of information on SWPPP and BMPs that the contractor must read and sign.                     | By July 2011   | EM              | Information packets are signed for every new development.        |

**General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Measurable Goals**

| MCM | Target                      |   | Desired Result  | Measurable Goal   | Milestone Date              | Associated BMPs | Measure of Success (Effectiveness)                     |
|-----|-----------------------------|---|---|---|-----------------------------|-----------------|--|
|     | Pollutant(s)                | Audience(s)   |   |   |                             |                 |  |
| 1   | Illicit discharge and waste | Facility Maintenance and Public Works Employees                           | 4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:<br>Equipment inspection to ensure timely maintenance<br>Benefits of appropriate on-site infiltration of storm water<br>Minimization of use of salt or other deicing materials<br>Proper storage of industrial materials<br>Proper management of waste materials and dumpsters<br>Proper management of parking lot surfaces. | Have training semi-annually on illicit discharges.  | First training by July 2011 | ET              | Training occurs twice a year                           |
| 1   | All pollutants              | Permittee engineers, development and plan review staff, land use planners | 4.2.1.6 Training on LID, Green Infrastructure, and post construction BMPs   | Require an annual meeting with all engineers, development and plan review staff, and land use planners to review acceptable LID practices | July 2011                   |                 | Annual meeting occurs                                  |
| 1   | All pollutants              | All Audiences   | 4.2.1.7 Evaluate the effectiveness of the public education program by a defined method.   | Research evaluation methods and select the best one. Implement the selected evaluation method.  | April 2012                  |                 | Evaluation method chosen (2011) and implemented (2012) |
| 1   | All pollutants              | All Audiences   | 4.2.1.8 Document why certain BMPs were chosen for public education program (over others)  | Include an explanation in the SWMP.   | January 1, 2011             |                 | Documented rationale included in the SWMP.             |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

1

| MCM | Target         |             | Desired Result  | Measurable Goal  | Milestone Date                | Associated BMPs | Measure of Success (Effectiveness) |
|-----|----------------|-------------|---|--|-------------------------------|-----------------|------------------------------------|
|     | Pollutant(s)   | Audience(s) |   |  |                               |                 |                                    |
| 1   | All Pollutants | Commercial  | 4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:<br>Equipment inspection to ensure timely maintenance<br>Benefits of appropriate on-site infiltration of storm water<br>Minimization of use of salt or other deicing materials<br>Proper management of waste materials and dumpsters<br>Proper management of parking lot surfaces. | Provide and annual mailer of environmental best management practices | First mailer<br>January 2017  |                 | Annual Mailer                      |
| 1   | All pollutants | Industrial  | 4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:<br>Equipment inspection to ensure timely maintenance<br>Benefits of appropriate on-site infiltration of storm water<br>Minimization of use of salt or other deicing materials<br>Proper management of waste materials and dumpsters<br>Proper management of parking lot surfaces. | Provide and annual mailer of environmental best management practices | First mailer February<br>2017 |                 | Annual Mailer                      |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

1

| MCM | Target         |  | Desired Result  | Measurable Goal   | Milestone Date             | Associated BMPs | Measure of Success (Effectiveness) |
|-----|----------------|--|---|---|----------------------------|-----------------|------------------------------------|
|     | Pollutant(s)   | Audience(s)  |   |   |                            |                 |                                    |
| 1   | All Pollutants | Agricultural via: Farm Bureau, Utah Cattlemen's Association, 4H, & FFA | 4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste.<br>Distribution of Federal Department of Agriculture: Films and media Pertaining to Water Conservation and Pollution Control. Equipment inspection to ensure timely maintenance Benefits of appropriate on-site runoff retention and reuse. | Provide and annual mailer of environmental best management practices and distribution of Federally produced media materials | First mailer<br>March 2017 |                 | Annual Mailer                      |
|     |                |  |   |   |                            |                 |                                    |

***Public Involvement and Participation***

# Public Involvement and Participation

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## Minimum Control Measure 2

### 2.1 Introduction

The County is committed to meet the requirements of Public Involvement and Participation MCM. The County is an active member of the Weber County Storm Water Coalition a county-wide storm water advisory committee for public involvement and participation for addressing storm water issues.

### 2.2 Pollutants of Concern

Consider what happens to detergents from washing your car, leaf and lawn clippings left in the gutter, or litter that is carelessly deposited alongside of the road. These are the kinds of pollutants that flow into the storm drain system. Below is a brief description of some of the more typical non-point source stormwater pollutants and the potential impacts these pollutants may have on waterways.

#### Sediment

Sediment can be harmful to aquatic life (plants, fish, and other animals that live in lakes and streams. Light needed by plants in water is blocked by sediments. Sediments can carry chemicals that are toxic and cause the oxygen in water to be used up. Sediments clog fish gills and fill in the deep pools and eddies where they hide. Sediment generally is the result of soil erosion from lawns, hillsides, and gardening/landscaping, and construction activities.

#### Floatables

Floatables are pieces of litter in the water. They may be contaminated with toxic chemicals and bacteria. Floatables are also an eyesore in our waterways. Commonly observed floatables include cigarettes, plastic containers, wrappers, and cans. Floatables such as these are generally the result of careless handling practices or littering.

#### Bacteria and Viruses

Bacteria are washed with animal excrement and leakage from sewers and septic tanks into waterways. These organisms can cause disease in both animals and humans. Biological contaminants come from litter, organic matter, and animal waste.

#### Oxygen Demanding Substances

The chemical breakdown of organic materials (leaves, excrement and street litter) washed into waterways decreases levels of dissolved oxygen in water. Aquatic life requires this oxygen to exist.

#### Nutrients

Nutrients such as nitrogen and phosphorus result in excessive plant growth that clogs waterways, blocks sunlight, and reduces oxygen. Some sources of nutrients are fertilizer, excrement, and detergents.



# Public Involvement and Participation

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## Oil and Grease

Petroleum products (gasoline, oil, and grease) are toxic to aquatic life, even in small amounts. Oil and grease in storm drains are generally traced to automotive leaks and spills and improper disposal of used oil and automotive products into storm drains.

## Pesticides, Herbicides and Fertilizers

Excess amounts of pesticides, herbicides, and fertilizers applied to yards, lawns and greenways are washed into streams during rainfall events. These chemicals can cause increased algae growth and toxicity to native bacteria and organisms.

## Metals

Metals Such as lead, zinc, mercury, copper, and cadmium in water, can be toxic to humans, aquatic life and other animals that drink the water. Metals come from vehicle exhaust, weathered paint, metal plating, tires and motor oil.











## Toxic Substances

Gasoline, household products, paint and paint thinner are examples of toxic substances. These substances can deplete oxygen in waterways and cause toxic effects in living native bacteria and small organisms.









## 2.3 General Practices

As citizens, there are many things that we can do to protect the water in our environment. These general practices can be executed by simpler changes to routine habits. With every resident practicing good housekeeping and material management, great effects can be seen in local water quality. Here are just a few:

### Household and Home Maintenance







-   Buy household products such as cleaners and furniture polish labeled “non-toxic”. Use small quantities and purchase only the amount you need.
-   Follow manufacturer’s recommendations for use and storage of all toxic products, including cleaners, solvents, and paints.
-   Properly dispose of household hazardous wastes (any toxic substance) at the county/solid waste transfer station or other state licensed waste handling facilities.
-   Rinse paint brushes in the sink. Filter and reuse paint thinner or brush cleaners. Dispose of used materials at a hazardous materials collection event.
-   Recycle reusable materials. Throw litter into trash cans and keep cans tightly covered to prevent foraging by neighborhood animals.

### Lawn and Garden









-   Minimize the use of pesticides, herbicides and fertilizers; apply carefully and sweep up excess.
-   Use a broom rather than a hose to clean up sidewalks and driveways. Do not hose down gutter.
-   Deposit leaves and clippings in a garbage can or a compost pile.
-   Divert rain spouts and garden hoses from paved surfaces onto grass or garden areas to allow filtration through the soil. Water only your lawn and garden.

## Public Involvement and Participation







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-   Control sediment migration and erosion, don't let it reach the gutter, sweep up and re-use it.
-   Do not over-water—Don't be a "gutterflooder".
-   Put pet waste in a garbage can using pick-up or pet waste bags







### Automotive

-   Recycle used motor oil and antifreeze at automotive centers.
-   Have your car inspected and maintained regularly to reduce leakage of oil, antifreeze and other fluids.
-   Reduce automotive emissions through regular auto maintenance, ride sharing, and by using public transportation.
-   Conserve water when washing your car and use a biodegradable soap or detergent.





### Commercial

-   Encourage Good Housekeeping Practices
-   Adopt good winter time salt, sand and deicing material storage and usage.
-   Provide for regular parking lot sweeping and disposal of collected sweeping materials

### Industrial

-   Encourage Good Housekeeping Practices
-   Adopt good winter time salt, sand and deicing material storage and usage.
-   Provide for regular parking lot sweeping and disposal of collected sweeping materials

### Agricultural

-   Encourage Good Housekeeping Practices
-   Keep current on and use USDA recommendations for Water Conservation and Pollution prevention.

Non-point source pollution comes from many sources and its control is everyone's responsibility. Pollution prevention and good housekeeping practices are essential to reducing non-point source pollution. From the: individual gardener, public official, business owner, commercial facility maintenance staff, industrial facility maintenance staff, to the commercial and local farmer and rancher, everyone has a stake in protecting our resources. The best place to get started is in our own backyards, garages, parking lots, and farm yards.

Current programs established to assist with disposal of household chemicals include:

HOUSEHOLD HAZARDOUS WASTE DISPOSAL  
3rd Saturday of each month, April-October  
at the  
Weber County Transfer Station  
867 West Wilson Lane, Ogden  
9 a.m. to 1 p.m.

## **Public Involvement and Participation**

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### **2.4 Measurable Goals and Fiscal Ability**

Please refer to the tables in this section which summarize the BMP's, Measurable Goals, Implementation Schedule for each BMP.

### **2.5 Best Management Practices (BMP)**

Included in Appendix B are the fact sheets that are referenced from the measurable-goals. There are also new and updated BMPs being added to the Weber County Engineering website that include BMPs for Low Impact and Greenscape Development, as well as the onsite retention of the 90 percentile storm and other various BMP applications. Also of note are new BMP's regarding Post Construction BMP's. These BMP are used by other communities along the Wasatch Front, originally obtained from Salt Lake County.



| MCM | Target         |             | Desired Result   | Measurable Goal  | Milestone Date             | Associated BMPs | Measure of Success (Effectiveness) |
|-----|----------------|-------------|--|--|----------------------------|-----------------|------------------------------------|
|     | Pollutant(s)   | Audience(s) |  |  |                            |                 |                                    |
| 2   | All Pollutants | Commercial  | <p>4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:</p> <p>Equipment inspection to ensure timely maintenance</p> <p>Benefits of appropriate on-site infiltration of storm water</p> <p>Minimization of use of salt or other deicing materials</p> <p>Proper management of waste materials and dumpsters</p> <p>Proper management of parking lot surfaces.</p> | Provide and annual mailer of environmental best management practices | First mailer January 2017  |                 | Annual Mailer                      |
| 2   | All pollutants | Industrial  | <p>4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste including:</p> <p>Equipment inspection to ensure timely maintenance</p> <p>Benefits of appropriate on-site infiltration of storm water</p> <p>Minimization of use of salt or other deicing materials</p> <p>Proper management of waste materials and dumpsters</p> <p>Proper management of parking lot surfaces.</p> | Provide and annual mailer of environmental best management practices | First mailer February 2017 |                 | Annual Mailer                      |

| MCM | Target         |  | Desired Result   | Measurable Goal   | Milestone Date          | Associated BMPs | Measure of Success (Effectiveness) |
|-----|----------------|--|--|---|-------------------------|-----------------|------------------------------------|
|     | Pollutant(s)   | Audience(s)  |  |   |                         |                 |                                    |
| 2   | All Pollutants | Agricultural via: Farm Bureau, Utah Cattlemen's Association, 4H, & FFA | 4.2.1.5 Information is provided to target audience on prohibitions against illicit discharges and improper disposal of waste. Distribution of Federal Department of Agriculture: Films and media Pertaining to Water Conservation and Pollution Control. Equipment inspection to ensure timely maintenance Benefits of appropriate on-site runoff retention and reuse. | Provide and annual mailer of environmental best management practices and distribution of Federally produced media materials | First mailer March 2017 |                 | Annual Mailer                      |
|     |                |  |  |   |                         |                 |                                    |

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

# **Illicit Discharge Detection and Elimination**

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## **Minimum Control Measure 3**

### **3.1 Introduction**

In addition to the County's own requirements regarding Illicit Discharge Detection and Elimination, the County is an active member of the Weber County Storm Water Coalition a county-wide storm water advisory committee for public participation addressing storm water issues.

### **3.2 Measurable Goals and Fiscal Ability**

Please refer to the tables in this section which summarize the BMP's, Measurable Goals, Implementation Schedule for each BMP.

### **3.3 Best Management Practices (BMP)**

The following pages consist of the BMP's for the County. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Illicit Discharge Detection and Elimination. The format is similar to other communities on the Wasatch Front, having been originally obtained from Salt Lake County's Storm Water Management Plan.

### **3.4 Storm Water Mapping**

Included in Appendix B are the fact sheets that are referenced from the measurable-goals. There are also other BMPs listed on the Weber County Engineering website that include other possible BMPs for various applications. These BMP's are used by other communities along the Wasatch Front, having been originally obtained from Salt Lake County.



**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

| MCM | Target         |  | Desired Result   | Measurable Goal  | Milestone Date                                | Associated BMPs | Measure of Success (Effectiveness)   |
|-----|----------------|--|--|--|---|-----------------|--|
|     | Pollutant(s)   | Audience(s)                                |  |  |   |                 |  |
| 3   | All Pollutants | Contractors, Developers, County Commission | 4.2.3 Enforcement ability for storm water rules  | Review and update the ordinance to conform with new permit                                   | Draft by April 1, ug 2016 & Final May 1, 2016 | OD              | If ordinance is in place and meets the permit requirements                                 |
| 3   | N/A            | Public Works                               | 4.2.3.1 Maintain Storm Water Map   | Establish policy to maintain a Current SD System Map on all new developments                 | Update Annually                               | MSWD            | If policy is in place and meets the permit requirements                                    |
| 3   | "              | "  | "  | Implementing policy and have all map updates done within 12 months of development completion | Update Annually                               | MSWD            | Successful if 90% are input within 12 months   |
| 3   | "              | "  | "  | Implementing policy and have all map updates done within 6 months of development completion  | Update semi-annually                          | MSWD            | Successful if 90% are input within 6 months  |
| 3   | All Pollutants | All Audiences                              | 4.2.3.2 Develop, implement, and prepare in writing a plan to detect and address non-SW discharges  | Do Dry weather screening 20% of all outfalls each year                                       | 1 July of each year                           | NSWD            | Successful if all screens are done   |
| 3   | "              | "  | "  | Have SOP in place and training to Staff  | Completed July 1, 2011 Update                 | NSWD            | Successful if completed by that date and staff is following SOP                            |
| 3   | All Pollutants | All Audiences                              | 4.2.3.4 Develop and implement standard operating procedures for tracing the source of illicit discharge  | Have SOP in place and training to Staff  | Completed July 1, 2013 Annual Retraining.     | IIC             | SOP in place and training being held   |
| 3   | All Pollutants | All Audiences                              | 4.2.3.5 Develop and implement standard operating procedures for characterizing the nature of any illicit discharges found or reported to the Permittee by the hotline developed in 4.2.3.9 | Create the Incidence Response SOP, complaint form, and train personnel                       | Completed by July 1, 2011                     | IIC, CH         | Successful if completed by that date and staff is following SOP                            |
| 3   | "              | "  | "  | Review SOP with staff and provide training annually.   | Ongoing                                       | IIC, CH         | Successful if training is completed annually for all staff involved in incident reporting. |
| 3   | All Pollutants | All Audiences                              | 4.2.3.6 Develop and implement standard operating procedures for ceasing the illicit discharge  | Create the Incidence Response SOP and train personnel  | Completed July 1, 2011                        | IDC, ISDC       |  |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s) Measurable  
Goals**

| MCM | Target                    |  | Desired Result   | Measurable Goal  | Milestone Date            | Associated BMPs | Measure of Success (Effectiveness)  |
|-----|---------------------------|--|--|--|---------------------------|-----------------|-------------------------------------|
|     | Pollutant(s)              | Audience(s)                                |  |  |                           |                 |                                     |
| 1   | All Pollutants            | Public Employees, Businesses and Residents | 4.2.3.7 Inform public employees, businesses, and general public of hazards associated with illicit discharges and improper disposal of waste   | See MCM 1  |                           | PEP, ET         | See MCM 1                           |
| 3   | Household Hazardous Waste | Residents                                  | 4.2.3.8 Promote or provide services for the collection of household hazardous waste  | Put the Transfer Station Address and Phone number on County Web Site | Completed July 1, 2011    | UOR, HWM        | Successful if complete by that date |
| 3   | Household Hazardous Waste | Residents                                  | 4.2.3.9 Publicly list and publicize a hotline or other telephone number for public reporting of spills and other illicit discharges  | Put the Address and Phone number on County Web Site                  | Completed July 1, 2011    | CH              | Successful if complete by that date |
| 3   | All Pollutants            | All Audiences                              | 4.2.3.10 Adopt and implement procedures for program evaluation and assessment. Include a database for mapping, tracking of the spills or illicit discharges identified and inspections conducted | Create a spreadsheet for tracking Illicit Discharges                 | Completed July 1, 2011    | IIC, MSWD       | Successful if complete by that date |
| 3   | "                         | "  | "  | Incorporate the spreadsheet into a GIS Database                      | Completed July 1, 2013    | MSWD            | Successful if complete by that date |
| 3   | "                         | "  | "  | Train Storm Water Personnel on GIS Mapping uses                      | Completed by July 1, 2016 | ET              | Successful if complete by that date |

***Construction Site Runoff Control***

# Construction Site Runoff Control

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## Minimum Control Measure 4

### 4.1 Introduction

The County has established a Construction Site Storm Water Permit for construction sites over 5000 square feet of disturbance and or moving in excess of 200 cubic yards of material. The County is an active member of the Weber County Storm Water Coalition a county-wide storm water advisory committee for public participation and for addressing storm water issues. The County is otherwise limited in responsibility for this control measure to the unincorporated areas of the county, except for mutual cooperation and coordination with incorporated cities of the county at the city's request.

### 4.2 Pollutants of Concern

Sediment in stormwater is the primary pollutant of concern during construction. Other pollutants including heavy metals, nutrients, and additional toxics (construction materials and chemicals) however, are also often found in runoff waters from construction sites. The following pollutants of concern are associated with construction site activity along with their impacts to receiving waters.

#### Sediment

Soil erosion is the process by which soil particles are removed from the land surface by wind, water, or gravity. Water erosion is the primary mechanism for the transport of sediment into storm and receiving waters. Vegetation protects soil from erosion by intercepting and absorbing rainfall, and by binding soil together with their root structure. When trees and brush are removed, soil is exposed and is easily transported off site, resulting in increased sediment migration. Natural depressions and hills which temporarily pond water are often removed by grading activities; rainfall then runs off the area, taking with it soil particles. Runoff from areas which have been cleared and grubbed typically result in higher volumes of runoff flowing faster and carrying sediments.

Excessive sediment in water can cause increased turbidity and reduced light penetration, resulting in impaired vision for aquatic life, clogging of fish gills, and a reduction in aesthetic values. In addition, other substances such as nutrients, heavy metals, and hydrocarbons tend to attach to sediment and in turn are transported with the sediments.

#### Nutrients

Nutrients like nitrogen and phosphorus from: fertilizers, pesticides, construction chemicals, and solid waste are often generated at construction sites. Excessive discharge into waterways may result in algae growth which can cause odor problems and reduce the dissolved oxygen available to fish and other aquatic life.

#### Oils and Greases

Oil and grease contain a wide array of hydrocarbon compounds, some of which are toxic to fish and other aquatic life at very low concentrations. The main sources of oil and grease during construction activities are leakage from engines, spills at fueling stations, overfilled tanks, and waste oil disposal.

#### Other Toxic Chemicals

Construction of buildings and roads may require toxic or hazardous materials such as pesticides, herbicides, petroleum products, and building materials such as asphalt, sealants and concrete which

## Construction Site Runoff Control

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may pollute stormwater running off the construction site. These types of pollutants often contain small amounts of metals and other toxic materials which may be harmful to humans, plants, and fish in streams.

### Miscellaneous Wastes

Miscellaneous wastes include wash water from car washing, concrete mixing, paints and painting equipment cleaning activities, solid wastes resulting from trees and shrubs removed during land clearing, wood and paper materials derived from packaging of building products, food containers such as paper, aluminum, and metal cans, and sanitary wastes. The discharge of these can lead to unsightly, smelly polluted waterways.

### **4.3 Measurable Goals and Fiscal Ability**

Please refer to the tables in this section which summarize the BMP's, Measurable Goals, Implementation Schedule for each BMP.

### **4.4 Best Management Practices (BMP)**

Included in Appendix B are the fact sheets that are referenced from the measurable-goals. There are also new and updated BMPs being added to the Weber County Engineering website that include BMPs for Low Impact and Greenscape Development, as well as the onsite retention of the 90 percentile storm and other various BMP applications. Also of note are new BMP's regarding Post Construction BMP's. These BMP are used by other communities along the Wasatch Front, originally obtained from Salt Lake County.

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target  |   | Desired Result  | Measurable Goal  | Milestone   | Assoc. | Measure of Success<br>(Effectiveness)                            |
|-----|---|---|---|--|-------------|--------|--|
|     | Pollutant(s)  | Audience(s)   |   |  | Date        | BMP    |  |
| 4   | Sediment,<br>Construction Site<br>Debris,<br>Hydrocarbons | Contractors and<br>Developers   | 4.2.4.1 Raise awareness of contractors<br>and developers on what is expected on<br>construction sites   | Require a SWPPP for every<br>construction site as required by<br>UPDES                                   | Feb. 2012   | OD     | Successful if 95% of all<br>new construction sites<br>have a NOI |
| 4   | Sediment,<br>Construction Site<br>Debris,<br>Hydrocarbons | Contractors and<br>Developers   | 4.2.4.2 Develop a written enforcement<br>strategy and implement the<br>enforcement provisions of the ordinance<br>or other regulatory mechanism | Draft ordinance to include<br>escalating enforcement<br>provisions                                       | July, 2011  | OD     | Successful if completed<br>by milestone                          |
| 4   | Sediment,<br>Construction Site<br>Debris,<br>Hydrocarbons | Contractors and<br>Developers,<br>County<br>Commission, Plan<br>Reviewers | Have an ordinance that is meaningful<br>and enforceable   | Revise ordinance to require a<br>SWPPP on every active<br>construction site as required by<br>the UPDES  | Feb. 2012   | OD     | If ordinance is in place<br>and meets the permit<br>requirements |
| 4   | "   | "   | "   | Revise ordinance to include<br>escalating enforcement<br>provisions                                      | Feb. 2012   | OD     | Successful if completed<br>by milestone                          |
| 4   | "   | "   | 4.2.4.2 Documentation and tracking of<br>all enforcement actions  | Develop and begin using a<br>construction site enforcement<br>action log/database                        | Feb. 2012   | OD     | Successful if we have a<br>log and are using it                  |
| 4   | Sediment,<br>Construction Site<br>Debris,<br>Hydrocarbons | Contractors and<br>Developers   | 4.2.4.3 Develop and implement SOP's<br>for pre-construction SWPPP review for<br>construction sites  | Develop checklist and begin to<br>do preconstruction reviews of<br>SWPPP                                 | Feb. 2012   | ECP    | Successful if we are<br>conducting SWPPP<br>reviews              |
| 4   | "   | "   | 4.2.4.3.1 Conduct a pre-construction<br>meeting   | Hold Pre-con meetings on all<br>sites greater than 1 acre or as<br>part of common plan of<br>development | Immediately |        | Successful if we are<br>conducting Pre-con<br>meetings           |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target  |                               | Desired Result   | Measurable Goal   | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)                                 |
|-----|---|-------------------------------|--|---|------------|--------|---|
|     | Pollutant(s)  | Audience(s)                   |  |   | Date       | BMP    |   |
| 4   | "   | "                             | 4.2.4.3.2 Incorporate into the SWPPP review procedures the consideration of potential water quality impacts and procedures for pre-construction review which shall include the use of a checklist.   | Develop a policy to consider potential water quality impacts on all projects - private or municipal   | Feb. 2012  | ZO     | Has the policy been created and is being followed                     |
| 4   | "   | "                             | 4.2.4.3.3 Incorporate into the SWPPP review procedures for an evaluation of opportunities for use of Low Impact Development (LID) and green infrastructure and when the opportunity exists, encourage such BMPs to be incorporated into the site design. | Develop a policy to consider Low Impact Development practices on all projects - private or municipal  | Feb. 2012  | ZO     | Has the policy been created and is being followed                     |
| 4   | "   | "                             | 4.2.4.3.4 Identify priority construction sites, including at a minimum those construction sites discharging directly into or immediately upstream of waters that the State   | Develop a "sensitive area" map showing areas within the county where "additional" protection may be desired   | July, 2011 | LIP    | Successful when map is completed and ready for use                    |
| 4   | Sediment,<br>Construction Site<br>Debris,<br>Hydrocarbons | Contractors and<br>Developers | 4.2.4.4.1 Inspections of all new construction sites ... at least monthly by qualified personnel  | Conduct monthly inspections of new (started after August 1, 2010) construction sites - Emphasize self-inspections - sensitive areas to be inspected twice monthly | Feb. 2012  | CCIT   | Successful if 90% of all new construction sites are inspected monthly |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |   | Desired Result   | Measurable Goal   | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)  |
|-----|--------------|---|--|---|------------|--------|--|
|     | Pollutant(s) | Audience(s)                                 |  |   | Date       | BMP    |  |
| 4   | "            | Contractors,<br>developers and<br>MS4 staff | 4.2.4.5 Provide training to municipal staff<br>and 3rd party designers   | Develop a policy to encourage all<br>SWPPP inspectors to be<br>registered or certified as an<br>inspector by a 3rd party such as<br>RSI, CPESC, CISEC, CESSWI, etc. | July, 2012 | CCIT   | Successful if completed<br>by milestone  |
| 4   | "            | Contractors,<br>developers and<br>MS4 staff | 4.2.4.4.2 ...The Permittee must include in<br>its SWMP document a procedure for<br>being notified by construction<br>operators/owners of their completion of<br>active construction so that verification of<br>final stabilization and removal of all<br>temporary control measures may be<br>conducted. | Develop a written Notice of<br>Termination process for use<br>within the municipality   | Feb. 2012  | ECP    | Successful if 95% of all<br>active construction sites<br>are terminated<br>appropriately |
| 4   | "            | Contractors,<br>developers and<br>MS4 staff | "  | Train SWPPP inspectors, their<br>supervisors, and any personnel<br>who grant final occupancy<br>permits on the NOT process  | Feb. 2012  | ECP    | Successful if 95% of all<br>active construction sites<br>are terminated<br>appropriately |
| 4   | "            | "   | 4.2.4.4.3 Conduct Bi-weekly inspections<br>on high priority construction sites   | Develop a policy to have<br>contractor Inspect high priority<br>sites using the state form, and<br>submit it to us monthly  | Feb. 2012  | ECP    | Successful if all high<br>priority sites are<br>inspected bi-weekly                      |
| 4   | "            | "   | 4.2.4.6 Maintain a log of active<br>construction sites   | Establish a log   | Feb. 2012  | ECP    | Successful if active<br>construction sites are<br>recorded in the log                    |



***Post Construction Storm Water Management***

# Post Construction Storm Water Management

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## Minimum Control Measure 5

### 5.1 Introduction

The County includes in its Best Management Practice list Post Construction practices for construction sites over 500 square feet of disturbance and or moving in excess of 200 cubic yards of material. The County is an active member of the Weber County Storm Water Coalition a county-wide storm water advisory committee for public participation and for addressing storm water issues. The County is otherwise limited to enforcement of such to the unincorporated areas of the county, except for mutual cooperation and coordination with incorporated cities of the county at the city's request.

This section is similar to MCM 6 – Pollution Prevention/good Housekeeping, except that this section applies more to Redevelopment and long term Operation and Maintenance. MCM 6 applies more to preventing pollution in areas other than construction.

### 5.2 Pollutants of Concern

Because of the many different types of residential, commercial and construction activities, there can be a wide variety of pollutants that make it into stormwater runoff. Even different facilities of the same industry may need different approaches to reducing pollutant discharges to stormwater. Therefore, it is imperative that the owner/operator of each facility understand the potential pollutants and impacts from their individual processes. This chapter will only discuss the most typical pollutants found in industrial stormwater runoff.

Solids, nutrients, metals, oxygen demanding substances, bacteria and viruses, and oil and grease are the pollutants most frequently associated with stormwater runoff. These pollutants are discussed in the following subsection.

#### Solids

Solids (often referred to as total or suspended solids) can cause many receiving water problems. First, it can cause direct toxicity to aquatic organisms, through such mechanisms as fouling of gills, suffocation, etc. Second, high solids concentrations can reduce water clarity. Third, solids act as a vehicle to transport other pollutants. Excessive solids are often the result of poor construction practices at the industrial site.

#### Nutrients

Excessive nutrients such as nitrogen and phosphorus in the receiving water can cause problems by stimulating the growth of algae or rooted aquatic plants. Excessive plant growth can cause dissolved oxygen problems, reduce biologic diversity, worsen aesthetics, or impair use for water supply. Some industrial activities typically associated with nutrients include fertilizer/pesticide manufacturing and distribution, waste treatment, and food processing.

#### Metals

Metals, especially "heavy" metals can be toxic at very low concentrations. Metals can also bio accumulate in fish and other species and be passed on to higher levels of the food chain, including humans. Certain metals including cadmium, copper, lead, silver, and zinc are the most common metals which contaminate waterways. Industrial activities which commonly deal with metals include mining, electroplating, cement, battery production, and metal recycling.

## **Post Construction Storm Water Management**

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### Oxygen-Demanding Substances

Oxygen-demanding substances tend to deplete the dissolved oxygen levels in streams and lakes. The depleted oxygen supply can result in loss of aquatic life. Oxygen demanding substances are commonly found in food processing industries and chemical manufacturing plants.

### Bacteria and Viruses

Bacteria and viruses are the most common microorganisms found in surface water runoff. Bacteria and viruses often carry diseases which can be transferred to animal life and to humans. Food processing and medical wastes are often associated with microbiological contamination.

### Oil and Grease

Oil and grease contain a wide array of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Industrial sources of oil and grease are generally associated with automobile related industries such as: repair shops, body and paint shops, retail distribution, and dismantlers/recyclers.

### Floatables

Trash and litter from industrial sites may contain amounts of pollutants which will affect stormwater quality. Floatables in waterways and drainage systems pose both aesthetic and maintenance problems.

### Other Toxic Materials (Priority Pollutants)

Facilities may contribute other toxic materials to storm water in low concentrations. Pesticides, phenols and polynuclear or polycyclic aromatic hydrocarbons (PAHs) are most frequently found in stormwater discharges associated with industrial operations.

## **5.3 Measurable Goals and Fiscal Ability**

The following table summarizes the BMPs, Measurable Goals, Implementation Schedule, and Fiscal ability of the County for each BMP.

## **5.4 Best Management Practices (BMP)**

Included in Appendix B are the fact sheets that are referenced from the measurable-goals. There are also new and updated BMPs being added to the Weber County Engineering website that include BMPs for Low Impact and Greenscape Development, as well as the onsite retention of the 90 percentile storm and other various BMP applications. Also of note are new BMP's regarding Post Construction BMP's. These BMP are used by other communities along the Wasatch Front, originally obtained from Salt Lake County.

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target         |                                    | Desired Result  | Measurable Goal   | Milestone   | Assoc. | Measure of Success<br>(Effectiveness)               |
|-----|----------------|------------------------------------|---|---|-------------|--------|---|
|     | Pollutant(s)   | Audience(s)                        |   |   | Date        | BMP    |   |
| 5   | All Pollutants | All Audiences                      | 4.2.5.1. Develop and adopt an ordinance or other regulatory mechanism that requires long-term post-construction storm water controls at new development and redevelopment sites. (4.2.5.3.1 for flood control structure issues and 4.2.5.3.2 for LID) | Review existing ordinance to determine if it meets requirements of new permit - Use checklist from coaching sessions  | March, 2011 | OD     | If review is complete                               |
| 5   | "              | "                                  | "   | Draft ordinance revisions   | July, 2011  | OD     | If draft is complete and ready for others to review |
| 5   | "              | "                                  | "   | Adopt updated ordinance   | Feb. 2012   | OD     | If ordinance has been passed                        |
| 5   | "              | "                                  | 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.  | Draft a standard to require contractors and developers to submit documentation on: how long-term BMPs were selected, pollutant removal expected from the BMP, and technical basis supporting performance claims | July, 2011  | IPL    | If draft is completed by the milestone date         |
| 5   | "              | "                                  | "   | Adopt revised standard  | Feb. 2012   | IPL    |   |
| 5   | "              | MS4 Staff,<br>County<br>Commission | 4.2.5.3.3 The Permittee must develop a plan to retrofit existing developed sites that are adversely impacting water quality.  | Update Storm Drain Master Plan and Capital Improvement Plan to include Water Quality as applicable  | Dec. 2014   | IPL    | If CIP includes water quality projects              |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |   | Desired Result  | Measurable Goal  | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)                     |
|-----|--------------|---|---|--|------------|--------|---|
|     | Pollutant(s) | Audience(s)                                 |   |  | Date       | BMP    |   |
| 5   | "            | MS4 Staff,<br>Contractors and<br>Developers | 4.2.5.3.4 Each Permittee shall develop and define specific hydrologic method or methods for calculating runoff volumes and flow rates...  | Review existing design standards to see if they meet new permit requirements - see section 4.2.5.3.4               | June, 2011 | IPL    | If standards have been reviewed and comments made         |
| 5   | "            | "   | "   | Update design standards if necessary   | Dec. 2011  | IPL    | If updated standards have been adopted                    |
| 5   | "            | "   | 4.2.5.4.1 Review Storm Water Pollution Prevention Plans (SWPPPs)  | See goals for MCM 4  |            |        |   |
| 5   | "            | "   | 4.2.5.4.2 Permittees shall provide developers and contractors with preferred design specifications to more effectively treat storm water for different development types...projects located in, adjacent to, or discharging to environmentally sensitive areas. | Locate environmentally sensitive areas within the MS4  | Jan. 2012  | IPL    | Completed map identifying environmentally sensitive areas |
| 5   | "            | "   | "   | Review map of sensitive areas and identify preferred method(s) of treating storm water to discharge to those areas | Dec. 2012  | IPL    | List of preferred method(s)                               |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |             | Desired Result  | Measurable Goal  | Milestone     | Assoc. | Measure of Success<br>(Effectiveness)                              |
|-----|--------------|-------------|---|--|---------------|--------|--|
|     | Pollutant(s) | Audience(s) |   |  | Date          | BMP    |  |
| 5   | "            | "           | 4.2.5.4.3 Permittees shall keep a representative copy of information that is provided to design professionals;...the dates of the mailings and lists of recipients.   | Post Appendix A - Supplemental Guide to Contractors and Developers to the web site             | July, 2011    | EM     | is appendix on web site  |
| 5   | "            | "           | 4.2.5.5. All Permittees shall adopt and implement SOPs or similar type of documents for site inspection and enforcement of post-construction storm water control measures.  | Review and customize SOPs for inspection and enforcement of post-construction control measures | October, 2011 | LIP    | If inspection and enforcement SOPs are current and being utilized? |
| 5   | "            | "           | 4.2.5.5.1 ... require private property owner/operators or qualified third parties to conduct maintenance and provide annual certification that adequate maintenance has been performed and the structural controls are operating as designed to protect water quality. In this case, the Permittee must require a maintenance agreement addressing maintenance requirements for any control measures installed on site. | Draft a maintenance agreement template   | July, 2011    | BMPIM  | If draft is completed by the milestone date                        |
| 5   | "            | "           | "   | Adopt a maintenance agreement template   | Dec, 2011     | BMPIM  | If template is adopted and being used by milestone date            |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |             | Desired Result   | Measurable Goal  | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)                             |
|-----|--------------|-------------|--|--|------------|--------|---|
|     | Pollutant(s) | Audience(s) |  |  | Date       | BMP    |   |
| 5   | "            | "           | 4.2.5.5.3 Inspections and any necessary maintenance must be conducted annually by either the Permittee or through a maintenance agreement, the property owner/operator. On sites where the property owner/operator is conducting maintenance, the Permittee shall inspect those storm water control measures at least once every five years or sites where the county has access | Inventory post-construction BMPs - see 4.2.5.7.1 for inventory inclusion items             | Sept, 2011 | BMPIM  | If inventory is complete  |
| 5   | "            | "           | "  | Identify who is responsible to inspect and/or maintain each post-construction BMP          | Dec, 2011  | BMPIM  | If list identifies person responsible for inspections/maintenance |
| 5   | "            | "           | "  | Develop inspection report form for post-construction BMPs                                  | July, 2011 | BMPIM  | If form is completed  |
| 5   | "            | "           | "  | Conduct inspections annually for county owned BMP's  | Ongoing    | BMPIM  | If completed inspection reports are properly filed                |
| 5   | "            | "           | "  | Conduct inspections on privately owned BMP's, accessible to the MS4, at least 20% per year | Ongoing    | BMPIM  | If completed inspection reports are properly filed                |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |             | Desired Result  | Measurable Goal   | Milestone | Assoc. | Measure of Success<br>(Effectiveness)    |
|-----|--------------|-------------|---|---|-----------|--------|--|
|     | Pollutant(s) | Audience(s) |   |   | Date      | BMP    |  |
| 5   | "            | MS4 staff   | 4.2.5.6. Permittees shall provide adequate training for all staff involved in post-construction storm water management, planning and review, and inspections and enforcement. | Schedule and conduct training for appropriate personnel | Annually  | BMPIM  | If all appropriate personnel are trained |
| 5   | "            | "           | 4.2.5.7 Maintain an inventory of post construction BMP's  | Inventory log updated annually                          | Ongoing   |        | If log is updated                        |



***Pollution Prevention/Good House Keeping***

# Pollution Prevention/Good House Keeping

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## Minimum Control Measure 6

### 6.1 Introduction

The County includes in its Standard Operating Procedures for all of the county facilities for pollution prevention and good housekeeping. The County is an active member of the Weber County Storm Water Coalition a county-wide storm water advisory committee for public participation and for addressing storm water issues. The County is otherwise limited to enforcement of such to its own facilities and coordination with incorporated cities of the county at the city's request.

MCM 6 applies to preventing pollution in areas other than construction areas and establishing good techniques for Public Works maintenance activities.

### 6.2 Pollutants of Concern

A variety of pollutants are associated with stormwater pollution due to municipal activities including: sediment, nutrients, bacteria and viruses, oxygen demanding substances, oil and grease, metals, toxic pollutants, and floatables (Table 6-1). The impacts of these pollutants on water quality along with a discussion on municipal activities which can potentially contribute to their introduction into stormwater runoff is presented in the following subsections.

#### Sediment

Sediment is a common component of stormwater, and is considered to be one of the most damaging pollutants in Utah. Sediment fills in streams, lakes, rivers, wetlands, and road ditches, and can affect aquatic life by smothering fish larvae and eggs. Suspended soil particles can cause water to look cloudy or turbid. Excessive turbidity reduces light penetration in water, impairs sight of feeding fish, clogs fish gills, and increases drinking water treatment costs. Fine sediment also acts as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons to nearby surface waters.

Significant sediment-borne pollutants are associated with highway runoff; originating from pavement wear, vehicles, atmospheric deposition, and road maintenance. Other sources of sediment include erosion from new development and construction sites.

#### Nutrients

Nutrients, especially nitrogen and phosphorus, can cause algal blooms and excessive aquatic plant growth in lakes. These conditions can impair many important uses of these waters, including recreation, fish habitat, and water supply.

Nitrogen and phosphorus associated with highway runoff come from atmospheric deposition and roadside fertilizer application. Phosphorus has also been associated with application of sand and salt on roads. Nutrients are a result of yard debris, garbage, as well as fertilizer and pesticide use.

#### Metals

Trace metals are a water quality concern because the toxic effects they can have on aquatic life. Metals can also be a health hazard to humans through direct ingestion of contaminated water or through eating contaminated fish. The most common trace metals found in stormwater runoff in urban areas are lead, zinc, and copper. These metals originate from galvanizing, chrome plating, and other metal sources associated with automobiles. Lead, cadmium, nickel and zinc in urban runoff have also been associated with different sources including body rust, brake lining wear, steel highway structures, and tire wear from automobiles.

## Pollution Prevention/Good House Keeping

### Oxygen-Demanding Substances

Oxygen-demanding substances tend to deplete the dissolved oxygen levels in streams and lakes. The depleted oxygen supply can result in the reduction of aquatic life. Oxygen demanding substances are found in yard waste (such as leaves and lawn clippings), animal wastes, street litter, and organic matter.

### Bacteria and Viruses

Bacteria and viruses are the most common microorganisms found in surface water runoff. Bacteria and viruses often carry diseases which can be transferred to animal life and to humans. The main sources of these contaminants are animal excrement and sanitary sewer overflows.

### Oil, Grease and Hydrocarbons

Oil, grease and hydrocarbons contain a wide array of compounds, some of which are toxic to aquatic organisms at low concentrations. The main sources of oil and grease are leakage from engines, restaurant grease traps, and waste oil disposal. Hydrocarbons typically come from spills, leaks, lubricants and asphalt surface leachate. Hydrocarbon levels are highest from parking lots, roads and service stations.

### Floatables

Floatables are pollutants that may be contaminated with heavy metals, pesticides, and bacteria. Typically resulting from street refuse or industrial yard waste, floatables also create an aesthetic “eye sore” in waterways or detention basins.

**Table 6-1.** Potential pollutants of concern associated with municipal activities.

| Activity                             | Pollutant                     | Potential Source  |
|--------------------------------------|-------------------------------|---|
| <b>Construction</b>                  | Sediment                      | Poor erosion control practices on hillsides, undeveloped property, right-of-way for construction sites  |
| <b>Residential and Parks</b>         | Nutrients                     | Yard debris, garbage, fertilizer and pesticide use, rat poison, pyrotechnics  |
| <b>Transportation and Commercial</b> | Metals                        | Paint, plastics, pottery pigments and glazes, automobile tires, common galvanized coatings, pesticide use, root killer application on sewer lines, old lead paint and glazes, wood preservatives, batteries |
| <b>Residential</b>                   | Oxygen demanding Substances   | Yard debris, animal wastes, organic chemical use  |
| <b>Parks and Residential</b>         | Bacteria and Viruses          | Human and animal (pets and aquatic life) waste, sanitary sewer infiltration into storm drain system, decomposing yard waste   |
| <b>Commercial and Residential</b>    | Oil, Grease, and Hydrocarbons | Asphalt surface leaching, spills, leaks, construction activities  |
| <b>Residential and Parks</b>         | Floatables                    | Street refuse, industrial yard waste  |

## **Pollution Prevention/Good House Keeping**

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### **6.2 Measurable Goals and Fiscal Ability**

Please refer to the tables in this section which summarize the BMP's, Measurable Goals, Implementation Schedule for each BMP.

### **6.3 Best Management Practices (BMP)**

Included in Appendix B are the fact sheets that are referenced from the measurable-goals. There are also new and updated BMPs being added to the Weber County Engineering website that include BMPs for Low Impact and Greenscape Development, as well as the onsite retention of the 90 percentile storm and other various BMP applications. Also of note are new BMP's regarding Post Construction BMP's. These BMP are used by other communities along the Wasatch Front, originally obtained from Salt Lake County.

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target         |             | Desired Result   | Measurable Goal   | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)                           |
|-----|----------------|-------------|--|---|------------|--------|---|
|     | Pollutant(s)   | Audience(s) |  |   | Date       | BMP    |   |
| 6   | All pollutants | MS4 staff   | 4.2.6 ...All components of an O & M program shall be included in the SWMP document and must identify the department (and where appropriate, the specific staff) responsible for performing each activity described in this section...                                  | Complete Org chart and define specific responsibilities for all departments shown | Jan. 2011  | HP     | If org chart is complete and up to date by milestone date       |
| 6   | "              | "           | 4.2.6.1. Permittees shall develop and keep current a written inventory of Permittee-owned or operated facilities   | Complete listing of MS4 owned/operated facilities                                 | Dec. 2010  | HP     | If list is completed by milestone date                          |
| 6   | "              | "           | 4.2.6.2. All Permittees must initially assess the written inventory of Permittee-owned or operated facilities, operations and storm water controls identified in Part 4.2.6.1. for their potential to discharge to storm water the following typical urban pollutants: | Complete assessments and identify "high priority" facilities                      | Feb. 2011  | HP     | If assessments are completed and documentation recorded in SWMP |
| 6   | "              | "           | 4.2.6.4. Each "high priority" facility identified in Part 4.2.6.3. must develop facility-specific standard operating procedures (SOPs) or similar type of documents.   | Review, customize and update appropriate SOPs                                     | July, 2011 | HP     | If SOPs are updated and current by milestone date               |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

| MCM | Target       |             | Desired Result   | Measurable Goal                              | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)  |
|-----|--------------|-------------|--|--|------------|--------|--|
|     | Pollutant(s) | Audience(s) |  |  | Date       | BMP    |  |
| 6   | "            | "           | 4.2.6.6.1 Weekly visual inspections: The Permittee must perform weekly visual inspections of "high priority" facilities in accordance with the developed SOPs to minimize the potential for pollutant discharge. | Develop weekly inspection form and log       | July, 2011 | HP     | Completed inspection form and log  |
| 6   | "            | "           | "  | Conduct weekly inspections                   | Ongoing    | HP     | If at annual review all weekly inspections are logged and reports completed    |
| 6   | "            | "           | 4.2.6.6.2 Quarterly comprehensive inspections: At least once per quarter, a comprehensive inspection of "high priority" facilities, including all storm water controls, must be performed                        | Develop quarterly inspection form(s) and log | July, 2011 | HP     | Completed inspection form and log  |
| 6   | "            | "           | "  | Conduct quarterly comprehensive inspections  | Ongoing    | HP     | If at annual review all quarterly inspections are logged and reports completed |

**General Permit for Discharges from Small Municipal  
Separate Storm Sewer Systems (MS4s)  
Measurable Goals**

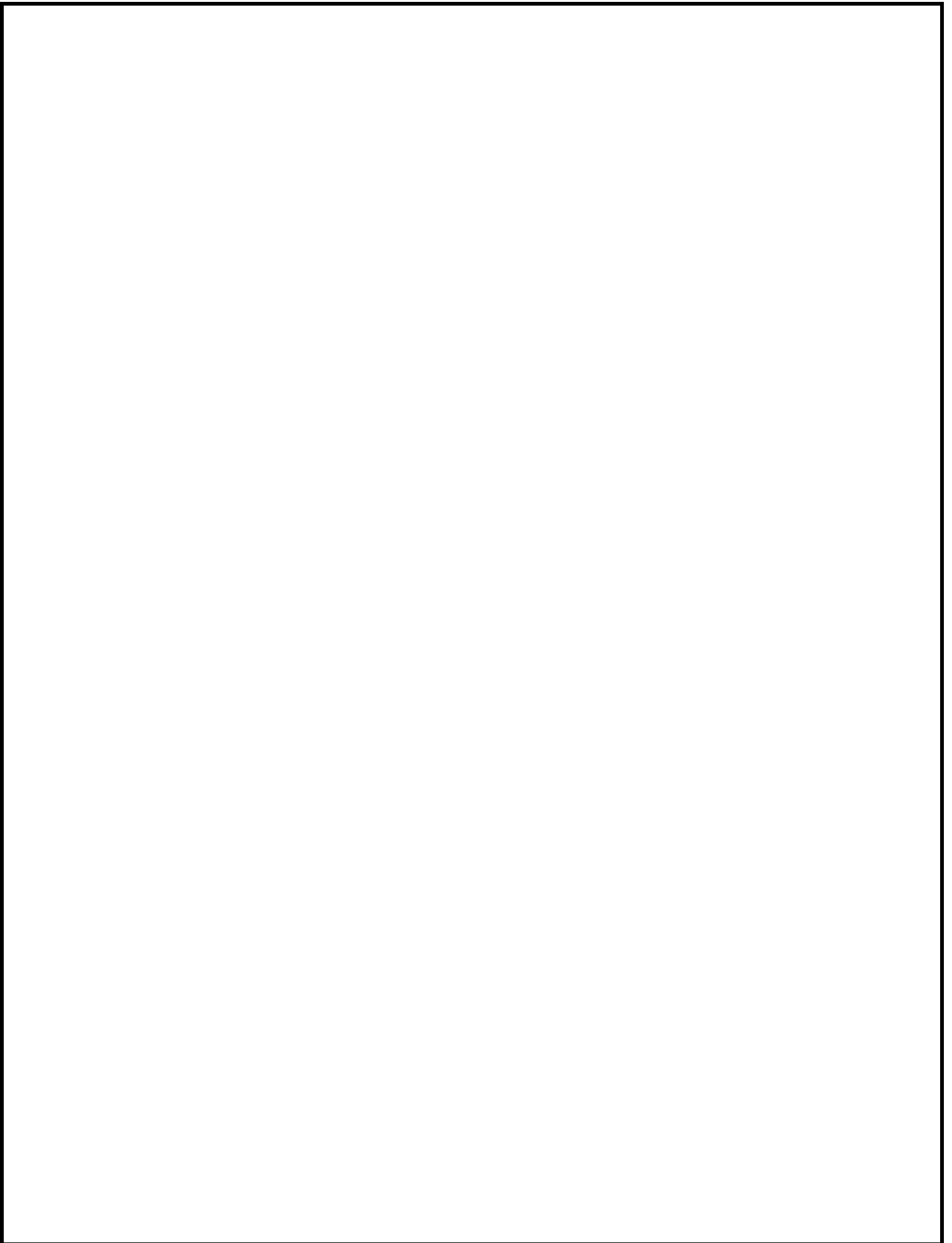
| MCM | Target       |   | Desired Result   | Measurable Goal   | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)   |
|-----|--------------|---|--|---|------------|--------|---|
|     | Pollutant(s) | Audience(s)                                 |  |   | Date       | BMP    |   |
| 6   | "            | "   | 4.2.6.6.3 Quarterly visual observation of storm water discharges: At least once per quarter, the Permittee must visually observe the quality of the storm water discharges from the "high priority" facilities                     | Conduct quarterly visual observations of storm water discharges at high priority facilities | Ongoing    | HP     | If at annual review all quarterly visual monitoring is completed and logged and reports completed |
| 6   | "            | MS4 Staff,<br>Contractors and<br>Developers | 4.2.6.7. The Permittee must develop and implement a process to assess the water quality impacts in the design of all new flood management structural controls that are associated with the Permittee or that discharge to the MS4. | Draft a policy/process to assess water quality impacts on all new flood control projects    | July, 2011 | IPL    | If draft is prepared and ready for internal review process by milestone date                      |
| 6   | "            | "   | "  | Get policy approved   | Dec. 2011  | IPL    | If policy is approved and adopted by milestone date   |
| 6   | "            | MS4 staff                                   | 4.2.6.7.1 Existing flood management structural controls must be assessed to determine whether changes or additions should be made to improve water quality.  | See MCM 5 for goals (part of the retrofit program)  |            |        |   |

**General Permit for Discharges from Small Municipal  
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Measurable Goals**

| MCM | Target       |             | Desired Result   | Measurable Goal                                 | Milestone  | Assoc. | Measure of Success<br>(Effectiveness)  |
|-----|--------------|-------------|--|---|------------|--------|--|
|     | Pollutant(s) | Audience(s) |  |   | Date       | BMP    |  |
| 6   | "            | "           | 4.2.6.9. Permittees shall provide training for all employees who have primary construction, operation, or maintenance job functions that are likely to impact storm water quality. | See individual training goals within other MCMs | Annually   |        |  |
| 6   | "            | "           | "  | Develop a training schedule                     | July, 2011 | EM, HP | If schedule is complete by milestone date  |
| 6   | "            | "           | "  | Conduct ongoing training according to schedule  | Ongoing    | EM, HP | If training is completed and documented according to schedule at annual evaluation |



**Supplemental Guide for Contractors**  
*BMP's*



**Supplemental Guide for Public Works**

**IDDE Program**

Appendix D –

Appendix E –

Appendix F – State/County Permits

Appendix G – Maps

**Documentation**

**Ordinances**

**State/County Permits**

**Maps**



*Additional Information*

## Additional Information

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### STORMWATER RESOURCES

|  |                        |
|--|------------------------|
| Environmental Protection Agency (EPA) Region VIII.....         | (800) 227-8917         |
| Army Corps of Engineers.....                                   | (801) 295-8380 ext. 18 |
| Utah Department of Environmental Quality.....                  | (801) 536-44006146     |
| Environmental Incidents.....                                   | (801) 536-4123         |
| Utah Division of Natural Resources<br>General Information..... | (801) 539-4001         |
| Weber County   |                        |
| County Engineer.....   | (801) 399-8374         |
| Storm Water Management.....                                    | (801) 399-8374         |

### REFERENCES

- *Berman, L., C. Hartline, N. Ryan, and J. Thorne. 1991. "Urban Runoff: Water Quality Solutions." American Public Works Association, Special Report #61.*
- *City of Boise Public Works Department. January 1997. "Boise Storm Water Best Management Practices (BMP) Guidebook."*
- *Debo, T.N. and A. J. Reese. 1995. Municipal Storm Water Management. Lewis Publishers. Boca Raton, FL.*
- *Denver Regional Council of Governments. February 1998. "Keeping Soil On Site – Construction Best Management Practices."*
- *Jones and Associates. July 2002. "Storm Water Management Plan for Harrisville City Corporation."*
- *New Jersey Department of Environmental Protection and Energy. "Nonpoint Source Pollution."*
- *Orange County Environmental Management Agency. "The Ocean begins at your front door! Nonpoint Source Pollution and what you can do to help!"*
- *Salt Lake County Engineering Division. September 1999. "Guidance Document for Stormwater Management."*
- *State of California. March 1993. "California Storm Water Best Management Practice Handbooks."*
- *State of Minnesota. October 1989. "Protecting Water Quality in Urban Areas – Best Management Practices for Minnesota."*
- *U.S. Environmental Protection Agency. September 1992. "Storm Water Management for Industrial Activities – Developing Pollution Prevention Plans and Best Management Practices," EPA-832-R-92- 006.*