

Documentation

APPENDIX D

Documentation

- Inspection Forms (Public Facilities)
- *Enforcement Actions
- Training Schedule
- *Training Log
- Public Education Activities
- Annual Reports
- Justification for changes
- Misc Informational Reports

* Records retained electronically with Assistant Engineer, available upon request.

INSPECTION FORMS (PUBLIC FACILITIES)

WEEKLY VISUAL INSPECTION SOP

PREPARATION

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

PROCESS

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

CLEAN-UP

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

DOCUMENTATION

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

Weekly Inspection Form - City Shop

Examinations shall be conducted one time per week for City-Owned Facilities identified as a "High Priority" on the Alpine City Storm Water Management Program.

Inspection Date	4/5/2016	4/12/2016	4/19/2016	4/26/2016	5/3/2016	5/10/2016	5/17/2016	5/24/2016	5/31/2016	6/7/2016	6/14/2016	6/21/2016	6/28/2016		
Weather Information															
Date of last 0.5" event within 24hrs															
Amount of rainfall (inches)															
Today's Temperature (F)															
Sediments															
Dirt on the parking lot?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Dirt in the gutter?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Salt pile uncovered?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Salt uncontained? (does it need swept back?)	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Metals															
Oxidized containers?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Oxidized equipment?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Open metal containers?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Pesticides															
Pesticides in the gutter?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Animal waste in the gutter?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Fertilizer or pesticide leaks?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Trash & Cleanliness															
Garbage bin doors open?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Doors need repaired?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Bin leaking?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Materials in yard un-organized?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Supplies in shop un-organized?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Main shop floor - dirty?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Supply room floor dirty?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Partis room floor dirty?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Nutrients															
Grass clippings in the gutter?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Leaves in the gutter?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Hydrocarbons															
Open oil containers?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Anything leaking (chemical, equipment, etc.)?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
- if yes, what?															
Chlorides															
Water faucets leaking?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Fire hydrant leaking?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Running hoses?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Maintenance															
Is maintenance required?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Was previous maintenance completed?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Was a spill report filed?	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A
Additional Comments															

Finding rainfall data:
<http://www.nws.noaa.gov/climate/zmacs.php?wfo=slc>
 1. In the first column select the top item, daily data...
 2. Select Alpine in this column
 3. Select "Current Month" in this column
 4. Push the "GO" button

QUARTERLY COMPREHENSIVE INSPECTION SOP

PREPARATION

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

PROCESS

- Look for evidence of spills at the site
- If a spill is found assess the general area to identify its source
- Whenever possible take photographs of the suspected illicit discharge
- Inspect all waste storage areas and dumpsters
 - Inspect for leaks
 - have repairs made immediately by responsible party
- Inspect vehicle maintenance and fueling areas
 - Look for pollutant generating areas and inspect
- Material handling areas
- Pollutant generating areas

CLEAN-UP

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

DOCUMENTATION

- Fill out a quarterly comprehensive inspection sheet for each facility
- Document the inspection was complete on the Quarterly Comprehensive Log sheet along with the date it was completed

QUARTERLY INSPECTION

STORM WATER POLLUTION PREVENTION FORM

Examinations shall be conducted one time per quarter for City Owned Facilities identified as a "High Priority" on the Alpine City Storm Water Management Program.

Facility ID Number:1.....

Inspection Date:4/14/2016.....

Facility Name:City Shop.....

Facility Address:181 E 200 N.....

OPERATIONS & MAINTENANCE

Yes No N/A

- Is the facility free from hazardous waste?
- o If no, are they clearly marked "Hazardous Waste"
- o If no, are all containers tightly closed and free from leakage
- o Do long term hazardous storage tanks have secondary containment?
- This is our fuel tanks (berm, vault, double walls)
- o Do chemicals appear to have been discharged through improper handling, leaks, spills, dumping, or other discharges?
- Are used oil containers leak free?
- Are used oil containers labeled appropriately?
- Did the facility have records of an oil spill within the past quarter?
- Does the facility use sawdust or other absorbents to clean up spills or leaks?
- o If yes, are they burned for onsite heat, disposed as hazardous waste or characterized as non-hazardous and landfilled?
- Are the facility floors clean and swept?
- Is the floor drain connected to sewer?
- Are floor drains clean?
- Is there evidence of toxic fluids entering the floor drain?
- Is there evidence of dry cleanup methods?
- Are fluids grouped, labeled, and storage neatly?

PARKING LOT

- Are current erosion and sedimentation BMP's adequate?
- Is the site free from offsite flows?
- Are used BMP's depicted in the SWMP?
- Are impervious surfaces free from "tracking" of any kind of debris?
- Are all drums, tanks, or containers sealed or protected from storm water?
- Are defined areas kept clean and maintained?
- Are storage areas organized?
- Is salt completely covered?
- Is there a perimeter control BMP fully containing the salt and storage area?
- Are containment areas free from cracks, leaks, or failures in the surface?

TRAINING SCHEDULE



THE LANGDON GROUP



GATEWAY MAPPING INC.

OTHER J-U-B COMPANIES

TRAINING SCHEDULE

UPDATE

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

PUBLIC EDUCATION ACTIVITIES

NARATIVE ON PUBLIC EDUCATION

Section 4.2.1.8 requires the MS4 to include a small narrative of why certain public educational activities are chosen. Where the storm water program is somewhat new to the community of Alpine the City has chosen to team up with the Utah County Storm Water Coalition (aka: The Coalition) to do a few things in regards to public education. 1. The Coalition jointly decided that an educational program for elementary school aged children was a great option for education. A presenter was hired and has been teaching 4th grade students yearly since 2011 to each of the elementary schools in Alpine, as well as the rest of the county. We feel this has been going well and the message is getting out. Parents have called and asked me questions regarding the presentation which tells me, the message is spreading to the adults through their children. 2. The Coalition sets up a Storm Water booth at the Utah County Fair. The booth is for all ages with all sorts of trinkets given out to help remind about storm water issues. 3. The Coalition has paid BYU to conduct phone awareness surveys yearly. The same general questions are asked on a yearly basis; the answers are compared each year to see if the general populous is learning about storm water or not. 4. The Coalition teamed up the Salt Lake County in running TV ads – Only Rain in the Storm Drain! These ads have been very beneficial as there are few people who haven't seen the man climbing out of the gutter and bringing back his upstream neighbor's yard waste that was washed downstream. 5. The Coalition has held yearly conferences just for educating contractors and designers. Overall the City feels that the involvement with the Coalition, and the educational sources they have provided, has been a well-rounded route to go about educating the public. Besides the City's involvement with the Coalition, the City has also put out flyers, both at the City offices as well as included them, and other topics regarding storm water, in monthly newsletters.

Educational Material

Date	Company Name	Type of work	Telephone #	Educational material given
N/A 2011	** Clean Streets Ordinance filer is handed out to all Code Enforcement Violators **			
8/18-8/20 2012	Utah County Fair	Storm Water Educational Booth	n/a	Handed out fliers, trinkets, and storm water materials to people at the county fair. Had booth set up to educate people about keeping our storm water clean.
31-Jan				
2/12-4/12	Household Hazardous Waste City Website	Posted HW flyer on front page Posted Clean Streets blurb		Mountainville Academy 4th grade class education Hazardous Waste Flyer made available to public Information regarding storm water cleanliness and code references Posting an article on clean streets in Alpine City Newsletter to every resident
March Newsletter	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
April Newsletter	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
May Newsletter	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
June Newsletter	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
July Newsletter	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
8/16-8/18	Utah County Fair	Storm Water Educational Booth	n/a	Handed out fliers, trinkets, and storm water materials to people at the county fair. Had booth set up to educate people about keeping our storm water clean.
12/4/2012	Alpine Elementary SD Class	91 Students, Renae Black teacher	n/a	Coalition hired instructor for Elementary students
12/4/2012	Mountainville Academy SD Class	64 Students, Linda Sanders teacher	n/a	Coalition hired instructor for Elementary students
2013				
1/11/2013	Westfield Elementary SD Class	125 Students, Justin Wise teacher	n/a	Coalition hired instructor for Elementary students
11/6/2013	Alpine Elementary SD Class	73 Students, Renae Black teacher	756-8525	Coalition hired instructor for Elementary students
10/25/2013	Mountainville Academy SD Class	78 Students, Linda Sanders teacher	756-9805	Coalition hired instructor for Elementary students
2/5/2013	Accena Group	SWPPP		SWPPP Meeting put on for contractors and city folk - 3 CEU's given
June Newsletter 2013	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
July Newsletter 2013	Alpine City	Educational Information in newsletter	n/a	Posting an article on clean streets in Alpine City Newsletter to every resident
ALL YEAR LONG 2014	NOT EDUCATION	Educating Contractors	n/a	When ever I terminate a NOI, I send an email with educational instruction regarding "stabilization".
1/13/2014	Westfield Elementary SD Class	127 Students, Justin Wise teacher	763-7040	Coalition hired instructor for Elementary students
March Newsletter	Alpine City	Educational Information in newsletter	n/a	Posted article on clean streets & watering lawns & hazardous waste
April Newsletter	Alpine City	Educational Information in newsletter		Posted article on clean streets & watering lawns
May Newsletter	Alpine City	Educational Information in newsletter		Posted article on clean streets & watering lawns
March County HHW	Alpine City	Educational Information about HHW	n/a	Household Hazardous Waste Flyer posted on website, links to HHW
August Newsletter 2015	Alpine City	Educational material in newsletter		Posted an article on Concrete washouts!

ANNUAL REPORTS



September 15, 2015

Rhonda Theile
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870

Subject: Storm Water Phase II Annual Report

To Whom It May Concern:

Enclosed is Alpine City's storm water phase II annual report.

Sincerely,
ALPINE CITY



Shane L. Sorensen, P.E.
City Engineer

Cc: File

Alpine City Engineering
20 North Main, Alpine UT 84004

3. Public Education and Public Participation

- A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No
- B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

This year we focused on concrete washouts and dumping anything on city streets that could enter SD

- C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

I noticed small concrete jobs from home owners were using washouts. I also received more citizen reports of illegal dumping than the past

- D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your storm water program? Yes No
- E. Do you belong to a storm water coalition or other advisory committee? If yes, describe: Yes No
Utah County Stormwater Coalition

4. Construction

- A. Do you have an ordinance or other regulatory mechanism stipulating:
 - Erosion and sediment control requirements? Yes No
 - Other construction waste control requirements? Yes No
 - Requirement to submit construction plans for review? Yes No
 - MS4 enforcement authority? Yes No
- B. Do you have written procedures for:
 - Reviewing construction plans? Yes No
 - Performing inspections? Yes No
 - Responding to violations? Yes No
- C. What is the threshold for construction storm water plan review (e.g., all projects, projects disturbing greater than one acre, etc.)? All projects
- D. Identify the number of active construction sites \geq 1 acre in operation in your jurisdiction at any time during the reporting period. 4
- E. How many of the sites identified in 4.D did you inspect during this reporting period? 4
- F. Identify the number of active construction sites $<$ 1 acre in operation in your jurisdiction at any time during the reporting period. 36
- G. How many of the sites identified in 4.F did you inspect during this reporting period? 41
- H. Describe, on average, the frequency with which your program conducts construction site inspections.
weekly visual, monthly documentation
- I. Do you prioritize certain construction sites for more frequent inspections? Yes No
If Yes, based on what criteria? High Priority Sites get more inspections
- J. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

<input checked="" type="checkbox"/> Yes	Notice of violation	# <u>35</u>	No Authority <input type="checkbox"/>
<input checked="" type="checkbox"/> Yes	Administrative fines	# <u>3</u>	No Authority <input type="checkbox"/>
<input checked="" type="checkbox"/> Yes	Stop Work Orders	# <u>3</u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Civil penalties	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Criminal actions	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative orders	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Other _____	# _____	

- K. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No
- L. What are the 3 most common types of violations documented during this reporting period?
Daily Sweeping, illegance exits, recording weekly inspections logs
- M. How often do municipal employees receive training on the construction program? monthly

5. Illicit Discharge Elimination

- A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No
- B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No
- C. Identify the number of outfalls in your storm sewer system. 59
- D. Identify the number of Class V injection wells in your jurisdiction. 7
- E. Do you have documented procedures, including frequency, for screening outfalls? Yes No
- F. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?
all
- G. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? all
- H. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.
min. of 1 time per year
- I. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No
- J. Do you have documented procedures for tracing and removing an illegal discharge? Yes No
- K. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No
- L. During this reporting period, how many illicit discharges/illegal connections have you discovered? 0
- M. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?
n/a
- N. Identify which of the following types of enforcement actions you used during the reporting period for illicit discharges, indicate the number of actions, or note those for which you do not have authority:

<input type="checkbox"/> Yes	Notice of violation	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative fines	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Stop Work Orders	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Civil penalties	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Criminal actions	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative orders	# <u> </u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Other <u> </u>	# <u> </u>	
- O. How often do municipal employees receive training on the illicit discharge program? monthly

6. Storm Water Management for Municipal Operations

- A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
 - All public parks, ball fields, other recreational facilities and other open spaces Yes No
 - All municipal construction activities, including those disturbing less than 1 acre Yes No
 - All municipal turf grass/landscape management activities Yes No
 - All municipal vehicle fueling, operation and maintenance activities Yes No
 - All municipal maintenance yards Yes No
 - All municipal waste handling and disposal areas Yes No
 - Other _____
- B. Are storm water inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? Weekly & Quarterly shop inspections
- D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).
Street sweeping, dry weather screening, water main repair
- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. How are you disposing of catch basin decant water and solid material?
Store at shop containment area, haul off when dry
- H. Are municipal vehicles washed into an approved wastewater disposal system? Yes No
- I. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management? Yes No
- J. If yes, do you also provide regular updates and refreshers? Yes No
- K. If so, how frequently and/or under what circumstances? monthly meetings and annual conferences

7. Long-term (Post-Construction) Storm Water Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
 - Site plan reviews for storm water/water quality of all new and re-development projects? Yes No
 - Long-term operation and maintenance of storm water management controls? Yes No
 - Retrofitting to incorporate long-term storm water management controls? Yes No
- B. If you have retrofit requirements, what are the circumstances/criteria?
Must discharge or have the potential to discharge to MS4 system
- C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) all projects
- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
 - Flow volumes Yes No
 - Peak discharge rates Yes No
 - Discharge frequency Yes No
 - Flow duration Yes No

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your storm water management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Public notification of illegal activity	2011	ongoing	0
	2012	ongoing	3
	2013	ongoing	6
	2014	ongoing	3
	2015	ongoing	3

B. What environmental quality trends have you documented over the duration of your storm water program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

We are tracking the effectiveness of our public education regarding activities that can lead to illicit discharge (ex: dumping landscaping materials in the road) via phone calls received reporting such activities and via the total number of instances.

For Example:

In 2011 city employees found, helped remedy, and educated citizens/landscapers regarding dumping landscaping materials in the public right of way 14 times while receiving 0 reports from the community.

In 2012 there were 3 found by employees and 3 were reported by citizens. (Slow gardening year I think)

In 2013 there were 11 found by employees and 6 called in by Citizens.

In 2014 there were 7 found by employees and 3 called in by Citizens.

In 2015 there were 7 found by employees and 3 called in by Citizens (same as 2014).

For the 14-15 fiscal year we (employees and citizens) reported the same amount of issues as the prior year. The number did come down from the prior year but was the same this year. Maybe this is about how much we are going to see regardless of education? We have actually fined people this year for these violations. We will see if the fines (and rumors of fines) makes any difference in the following years.

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Section 4J - Notice of Violation: If I find issues that need fixed during my monthly SWPPP inspection and make note of that on my report, I am counting that as a NOV. There were less NOV's this year than last because I've really been harping on that in my pre-construction meeting as well as during inspections. Contractors are more aware of it now, but still struggle greatly to log their SWPPP inspection reports.

Section 8A - Program resources: Salaries are not itemized as a line item expense but are rolled into other utilities.

Certification Statement and Signature

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.

Yes

Shane Sorensen

Public Works Director

09/15/2014

Name of Certifying Official, Title

CITY ENGINEER

Date (mm/dd/yyyy)



September 15, 2014

Rhonda Theile
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870

Subject: Storm Water Phase II Annual Report

To Whom It May Concern:

Enclosed is Alpine City's storm water phase II annual report.

Sincerely,
ALPINE CITY



Shane L. Sorensen, P.E.
City Engineer

Cc: File

Alpine City Engineering
20 North Main, Alpine UT 84004

3. Public Education and Public Participation

- A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No
 B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Oil, fertilizer and any non-storm water discharge that may enter the storm drain

- C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

Our Parks Department uses less fertilizer and cleans up excess spray as well as educated 4th grade classes on SD issues. Put educational material in utility bills..

- D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your storm water program? Yes No

- E. Do you belong to a storm water coalition or other advisory committee? If yes, describe: Yes No
Utah County Stormwater Coalition

4. Construction

- A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements? Yes No
 Other construction waste control requirements? Yes No
 Requirement to submit construction plans for review? Yes No
 MS4 enforcement authority? Yes No

- B. Do you have written procedures for:

Reviewing construction plans? Yes No
 Performing inspections? Yes No
 Responding to violations? Yes No

- C. What is the threshold for construction storm water plan review (e.g., all projects, projects disturbing greater than one acre, etc.)? All projects

- D. Identify the number of active construction sites \geq 1 acre in operation in your jurisdiction at any time during the reporting period. 5

- E. How many of the sites identified in 4.D did you inspect during this reporting period? 5

- F. Identify the number of active construction sites $<$ 1 acre in operation in your jurisdiction at any time during the reporting period. 36

- G. How many of the sites identified in 4.F did you inspect during this reporting period? 36

- H. Describe, on average, the frequency with which your program conducts construction site inspections.

weekly visual, monthly documentation

- I. Do you prioritize certain construction sites for more frequent inspections? Yes No

If Yes, based on what criteria? High Priority Sites get more inspections

- J. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

<input checked="" type="checkbox"/> Yes	Notice of violation	# <u>64</u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative fines	# _____	No Authority <input type="checkbox"/>
<input checked="" type="checkbox"/> Yes	Stop Work Orders	# <u>4</u>	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Civil penalties	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Criminal actions	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative orders	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Other _____	# _____	

K. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No

L. What are the 3 most common types of violations documented during this reporting period?
Daily Sweeping, illegance exits, recording weekly inspections logs

M. How often do municipal employees receive training on the construction program? monthly

5. Illicit Discharge Elimination

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No

C. Identify the number of outfalls in your storm sewer system. 59

D. Identify the number of Class V injection wells in your jurisdiction. 7

E. Do you have documented procedures, including frequency, for screening outfalls? Yes No

F. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?
all

G. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? all

H. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.
min. of 1 time per year

I. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No

J. Do you have documented procedures for tracing and removing an illegal discharge? Yes No

K. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No

L. During this reporting period, how many illicit discharges/illegal connections have you discovered? 0

M. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?
n/a

N. Identify which of the following types of enforcement actions you used during the reporting period for illicit discharges, indicate the number of actions, or note those for which you do not have authority:

- Yes Notice of violation # _____ No Authority
- Yes Administrative fines # _____ No Authority
- Yes Stop Work Orders # _____ No Authority
- Yes Civil penalties # _____ No Authority
- Yes Criminal actions # _____ No Authority
- Yes Administrative orders # _____ No Authority
- Yes Other _____ # _____

O. How often do municipal employees receive training on the illicit discharge program? monthly

6. Storm Water Management for Municipal Operations

- A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
- | | | |
|--|---|--|
| All public parks, ball fields, other recreational facilities and other open spaces | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal construction activities, including those disturbing less than 1 acre | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal turf grass/landscape management activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal maintenance yards | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal waste handling and disposal areas | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
- Other _____
- B. Are storm water inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? Weekly & Quarterly shop inspections
- D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).
Street sweeping, dry weather screening, water main repair
- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. How are you disposing of catch basin decant water and solid material?
Store at shop containment area, haul off when dry
- H. Are municipal vehicles washed into an approved wastewater disposal system? Yes No
- I. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management? Yes No
- J. If yes, do you also provide regular updates and refreshers? Yes No
- K. If so, how frequently and/or under what circumstances? monthly meetings and annual conferences

7. Long-term (Post-Construction) Storm Water Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- | | | |
|---|---|-----------------------------|
| Site plan reviews for storm water/water quality of all new and re-development projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Long-term operation and maintenance of storm water management controls? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Retrofitting to incorporate long-term storm water management controls? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. If you have retrofit requirements, what are the circumstances/criteria?
Must discharge or have the potential to discharge to MS4 system
- C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) all projects
- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
- | | | |
|----------------------|---|--|
| Flow volumes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Peak discharge rates | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Discharge frequency | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Flow duration | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

- F. Please provide the URL/reference where all post-construction storm water management standards can be found.
http://s3.amazonaws.com/leulymedia/alpinecity/6353
- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 0
- H. How many of the plans identified in 7.G were approved? 0
- I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period? 5
- J. How many of the practices/facilities identified in I were found to have inadequate maintenance? 0
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
7 days unless deficiency endangers life / property
- L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities? Yes No
- M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain storm water management practices? 0
- N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No
- O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No
- P. How often do municipal employees receive training on the post-construction program? monthly

8. Program Resources

- A. What was the annual expenditure to implement MS4 permit requirements this reporting period? \$69,300
- B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? \$76,900
- C. This year what is/are your source(s) of funding for the storm water program, and annual revenue (amount or percentage) derived from each?

Source: <u>Storm Water Utility</u>	Amount \$ _____	OR % <u>100</u>
Source: _____	Amount \$ _____	OR % _____
Source: _____	Amount \$ _____	OR-% _____

- D. How many FTEs does your municipality devote to the storm water program (specifically for implementing the storm water program; not municipal employees with other primary responsibilities)? 1
- E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Utah Cnty SD Coalition	Public Education & Outreach	Member of Coalition

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your storm water management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Public notification of	2011	ongoing	0
illegal activity	2012	ongoing	3
	2013	ongoing	6
	2014	ongoing	3

B. What environmental quality trends have you documented over the duration of your storm water program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Section 4J - Notice of Violation: If I find issues that need fixed during my monthly SWPPP inspection and make note of that on my report, I am counting that as a NOV. A lot more NOV's were given this year for people not doing their weekly inspection reports, even if their site was spotless otherwise. In the past this was more of a verbal warning, but I'm really trying to enforce that item.

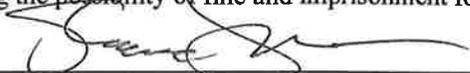
Section 8A - Program resources: Salaries are not itemized as a line item expense but are rolled into other utilities.

Certification Statement and Signature

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.

Yes

Shane Sorensen



09/15/2014

Name of Certifying Official, Title

PUBLIC WORKS DIRECTOR /
CITY ENGINEER

Date (mm/dd/yyyy)



September 17, 2013

Rhonda Theile
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870

Subject: Storm Water Phase II Annual Report

To Whom It May Concern:

Enclosed is Alpine City's storm water phase II annual report.

Sincerely,
ALPINE CITY

Shane L. Sorensen, P.E.
City Engineer

Cc: File

Mayor Hunt Willoughby

City Council
Kimberly Bryant
Mel Clement

Will Jones
Bradley Reneer
Troy Stout

20 North Main
Alpine, UT 84004
(801) 756-6347

- K. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No
- L. What are the 3 most common types of violations documented during this reporting period?
Contractors don't use tracking pads, maintenance of fencing, Not recording weekly SWPPP reports
- M. How often do municipal employees receive training on the construction program? monthly

5. Illicit Discharge Elimination

- A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No
- B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No
- C. Identify the number of outfalls in your storm sewer system. 57
- D. Identify the number of Class V injection wells in your jurisdiction. 7
- E. Do you have documented procedures, including frequency, for screening outfalls? Yes No
- F. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?
all
- G. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage? all
- H. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.
min. of 1 time per year
- I. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No
- J. Do you have documented procedures for tracing and removing an illegal discharge? Yes No
- K. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No
- L. During this reporting period, how many illicit discharges/illegal connections have you discovered? 1
- M. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?
1
- N. Identify which of the following types of enforcement actions you used during the reporting period for illicit discharges, indicate the number of actions, or note those for which you do not have authority:

<input type="checkbox"/> Yes	Notice of violation	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative fines	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Stop Work Orders	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Civil penalties	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Criminal actions	# _____	No Authority <input type="checkbox"/>
<input type="checkbox"/> Yes	Administrative orders	# _____	No Authority <input type="checkbox"/>
<input checked="" type="checkbox"/> Yes	Other <u>Fire Dep cleaned oil off road</u>	# _____	
- O. How often do municipal employees receive training on the illicit discharge program? monthly

6. Storm Water Management for Municipal Operations

- A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
- | | | |
|--|---|--|
| All public parks, ball fields, other recreational facilities and other open spaces | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal construction activities, including those disturbing less than 1 acre | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal turf grass/landscape management activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal maintenance yards | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal waste handling and disposal areas | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
- Other _____
- B. Are storm water inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? Weekly & Quarterly shop inspections
- D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).
Street sweeping, dry weather screening, water main repair
- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. How are you disposing of catch basin decant water and solid material?
Store at shop containment area, haul off when dry
- H. Are municipal vehicles washed into an approved wastewater disposal system? Yes No
- I. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management? Yes No
- J. If yes, do you also provide regular updates and refreshers? Yes No
- K. If so, how frequently and/or under what circumstances? monthly meetings and annual conferences

7. Long-term (Post-Construction) Storm Water Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- | | | |
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| Site plan reviews for storm water/water quality of all new and re-development projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
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- B. If you have retrofit requirements, what are the circumstances/criteria?
Must discharge or have the potential to discharge to MS4 system
- C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) all projects
- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
- | | | |
|----------------------|---|--|
| Flow volumes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Peak discharge rates | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Discharge frequency | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Flow duration | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

- F. Please provide the URL/reference where all post-construction storm water management standards can be found.
http://alpinecity.org/developmentCode.htm
- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 0
- H. How many of the plans identified in 7.G were approved? 0
- I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period? 5
- J. How many of the practices/facilities identified in I were found to have inadequate maintenance? 0
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
7 days unless deficiency endangers life / property
- L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities? Yes No
- M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain storm water management practices? 0
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Source: <u>Storm Water Utility</u>	Amount \$ _____	OR % <u>100</u>
Source: _____	Amount \$ _____	OR % _____
Source: _____	Amount \$ _____	OR % _____

- D. How many FTEs does your municipality devote to the storm water program (specifically for implementing the storm water program; not municipal employees with other primary responsibilities)? 1
- E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
<u>Utah Cnty SD Coalition</u>	<u>Public Education & Outreach</u>	<u>Member of Coalition</u>
_____	_____	_____
_____	_____	_____

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your storm water management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Public notification of	2011	ongoing	0
illegal activity	2012	ongoing	3
	2013	ongoing	6

B. What environmental quality trends have you documented over the duration of your storm water program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

We are tracking the effectiveness of our public education regarding activities that can lead to illicit discharge (ex: dumping landscaping materials in the road) via phone calls received reporting such activities and via the total number of instances.

For Example:

In 2011 city employees found, helped remedy, and educated citizens/landscapers regarding dumping landscaping materials in the public right of way 14 times while receiving 0 reports from the community.

In 2012 there were 3 found by employees and 3 were reported by citizens. (Slow gardening year I think)

In 2013 there were 11 found by employees and 6 called in by Citizens.

I'm finding that citizens are becoming more aware of the situation and calling in more often. Our employees know of the SWMP and report/educate when they see issues, which so far seems a little more random than a defined pattern.

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

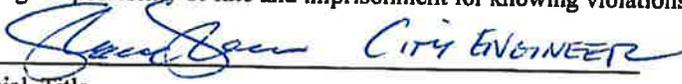
Section 4J - Notice of Violation: If I find issues that need fixed during my monthly SWPPP inspection and make note of that on my report, I am counting that as a NOV.

Section 8A - Program resources: Salaries are not itemized as a line item expense but are rolled into other utilities.

Certification Statement and Signature

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.

Yes

Shane Sorensen  CITY ENGINEER

Name of Certifying Official, Title

09/17/2013

Date (mm/dd/yyyy)



September 14, 2012

Rhonda Thiele
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Subject: Storm Water Phase II Annual Report

To Whom It May Concern:

Enclosed is Alpine City's storm water phaseII annual report.

Sincerely,
ALPINE CITY

Shane L. Sorensen, P.E.
City Engineer

cc: File

Utah Pollutant Discharge Elimination System Storm Water Program

Small MS4 Report Form

The purpose of this report is to contribute information to an evaluation of the UPDES small municipal separate storm sewer system (MS4) permit program. Consistent with 40 CFR §122.37 the Utah Department of Environmental Quality is assessing the status of the storm water program. A "no" answer to a question does not necessarily mean noncompliance with your permit or with the federal regulations. In order to establish the range of variability in the program it is necessary to ask questions along a fairly broad performance continuum.

1. MS4 Information

Alpine City

Name of MS4

Shane L.

Sorensen

City Engineer

Name of Contact Person (First)

(Last)

(Title)

(801) 763-9862

ssorensen@alpinecity.org

Telephone (including area code)

Email

20 N. Main

Mailing Address

Alpine

UT

84004

City

State

ZIP code

What size population does your MS4 serve? ~9,800

UPDES number UTR090000

What is the reporting period for this report? (mm/dd/yyyy)

From 07/01/2011 to 06/30/2012

2. Water Quality Priorities

A. Does your MS4 discharge to waters listed as impaired on a state 303(d) list? Yes No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4. Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

C. What specific sources contributing to the impairment(s) are you targeting in your storm water program?

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? Yes No

E. Are you implementing additional specific provisions to ensure their continued integrity? Yes No

6. Storm Water Management for Municipal Operations

- A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
- | | | |
|--|---|--|
| All public parks, ball fields, other recreational facilities and other open spaces | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal construction activities, including those disturbing less than 1 acre | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal turf grass/landscape management activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal maintenance yards | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal waste handling and disposal areas | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
- Other _____
- B. Are storm water inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? Weekly shop inspections
- D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).
Street sweeping, dry weather screening, water main repair
- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. How are you disposing of catch basin decant water and solid material?
Store at shop containment area, haul off when dry
- H. Are municipal vehicles washed into an approved wastewater disposal system? Yes No
- I. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management? Yes No
- J. If yes, do you also provide regular updates and refreshers? Yes No
- K. If so, how frequently and/or under what circumstances? monthly meetings and annual conferences

7. Long-term (Post-Construction) Storm Water Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- | | | |
|---|---|-----------------------------|
| Site plan reviews for storm water/water quality of all new and re-development projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Long-term operation and maintenance of storm water management controls? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Retrofitting to incorporate long-term storm water management controls? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. If you have retrofit requirements, what are the circumstances/criteria?
Must discharge or have the potential to discharge to MS4 system
- C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) all projects
- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
- | | | |
|----------------------|---|--|
| Flow volumes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Peak discharge rates | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Discharge frequency | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Flow duration | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

- F. Please provide the URL/reference where all post-construction storm water management standards can be found.
http://alpinecity.org/developmentCode.htm
- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 0
- H. How many of the plans identified in 7.G were approved? 0
- I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period? 5
- J. How many of the practices/facilities identified in I were found to have inadequate maintenance? 0
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
7 days unless deficiency endangers life / property
- L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities? Yes No
- M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain storm water management practices? 0
- N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No
- O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No
- P. How often do municipal employees receive training on the post-construction program? monthly

8. Program Resources

- A. What was the annual expenditure to implement MS4 permit requirements this reporting period? \$69,300
- B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? \$76,900
- C. This year what is/are your source(s) of funding for the storm water program, and annual revenue (amount or percentage) derived from each?

Source: <u>Storm Water Utility</u>	Amount \$ _____	OR % <u>100</u>
Source: _____	Amount \$ _____	OR % _____
Source: _____	Amount \$ _____	OR % _____
- D. How many FTEs does your municipality devote to the storm water program (specifically for implementing the storm water program; not municipal employees with other primary responsibilities)? 1
- E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
<u>Utah Cnty SD Coalition</u>	<u>Public Education & Outreach</u>	<u>Member of Coalition</u>
_____	_____	_____
_____	_____	_____

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your storm water management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Public notification of	2011	ongoing	0
illegal activity	2012	ongoing	3

B. What environmental quality trends have you documented over the duration of your storm water program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Section 8A - Program resources: Salaries are not itemized as a line item expense but are rolled into other utilities.

Certification Statement and Signature

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.

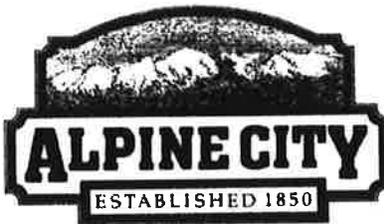
Yes

Shane Sorensen

Name of Certifying Official, Title

09/19/2012

Date (mm/dd/yyyy)



September 27, 2011

Rhonda Thiele
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Subject: Storm Water Phase II Annual Report

To Whom It May Concern:

Enclosed is Alpine City's storm water phase II annual report.

Sincerely,
ALPINE CITY



Shane L. Sorensen, P.E.
City Engineer

cc: File



September 27, 2011

Rhonda Thiele
DEQ/Division of Water Quality
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

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Sincerely,
ALPINE CITY

Shane L. Sorensen, P.E.
City Engineer

cc: File

Utah Pollutant Discharge Elimination System Storm Water Program

Small MS4 Report Form

The purpose of this report is to contribute information to an evaluation of the UPDES small municipal separate storm sewer system (MS4) permit program. Consistent with 40 CFR §122.37 the Utah Department of Environmental Quality is assessing the status of the storm water program. A "no" answer to a question does not necessarily mean noncompliance with your permit or with the federal regulations. In order to establish the range of variability in the program it is necessary to ask questions along a fairly broad performance continuum.

1. MS4 Information

Alpine City

Name of MS4

Shane L. Sorensen City Engineer

Name of Contact Person (First) (Last) (Title)

(801) 763-9862 ssorensen@alpinecity.org

Telephone (including area code) Email

20 N. Main

Mailing Address

Alpine UT 84004

City State ZIP code

What size population does your MS4 serve? ~9,800 UPDES number UTR090000

What is the reporting period for this report? (mm/dd/yyyy) From 07/01/2010 to 06/30/2011

2. Water Quality Priorities

- A. Does your MS4 discharge to waters listed as impaired on a state 303(d) list? Yes No
- B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4. Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

C. What specific sources contributing to the impairment(s) are you targeting in your storm water program?

- D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? Yes No
- E. Are you implementing additional specific provisions to ensure their continued integrity? Yes No

6. Storm Water Management for Municipal Operations

- A. Have storm water pollution prevention plans (or an equivalent plan) been developed for:
- All public parks, ball fields, other recreational facilities and other open spaces Yes No
 - All municipal construction activities, including those disturbing less than 1 acre Yes No
 - All municipal turf grass/landscape management activities Yes No
 - All municipal vehicle fueling, operation and maintenance activities Yes No
 - All municipal maintenance yards Yes No
 - All municipal waste handling and disposal areas Yes No
 - Other _____
- B. Are storm water inspections conducted at these facilities? Yes No
- C. If Yes, at what frequency are inspections conducted? _____
- D. List activities for which operating procedures or management practices specific to storm water management have been developed (e.g., road repairs, catch basin cleaning).
Street sweeping, dry weather screening, water main repair - others are in progress
- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No
- F. If Yes, which activities and/or facilities receive most frequent inspections? _____
- G. How are you disposing of catch basin decant water and solid material?
Store at a designated site and haul off annually
- H. Are municipal vehicles washed into an approved wastewater disposal system? Yes No
- I. Do all municipal employees and contractors overseeing planning and implementation of storm water-related activities receive comprehensive training on storm water management? Yes No
- J. If yes, do you also provide regular updates and refreshers? Yes No
- K. If so, how frequently and/or under what circumstances? monthly meetings and annual conferences

7. Long-term (Post-Construction) Storm Water Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- Site plan reviews for storm water/water quality of all new and re-development projects? Yes No
 - Long-term operation and maintenance of storm water management controls? Yes No
 - Retrofitting to incorporate long-term storm water management controls? Yes No
- B. If you have retrofit requirements, what are the circumstances/criteria?

- C. What are your criteria for determining which new/re-development storm water plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.) all projects
- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
- Flow volumes Yes No
 - Peak discharge rates Yes No
 - Discharge frequency Yes No
 - Flow duration Yes No

- F. Please provide the URL/reference where all post-construction storm water management standards can be found.
http://alpinecity.org/developmentCode.htm
- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 1
- H. How many of the plans identified in 7.G were approved? 1
- I. How many privately owned permanent storm water management practices/facilities were inspected during the reporting period? 0
- J. How many of the practices/facilities identified in I were found to have inadequate maintenance? _____
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
7 days unless deficiency endangers life / property
- L. Do you have authority to take enforcement action for failure to properly operate and maintain storm water practices/facilities? Yes No
- M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain storm water management practices? 0
- N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No
- O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No
- P. How often do municipal employees receive training on the post-construction program? monthly

8. Program Resources

- A. What was the annual expenditure to implement MS4 permit requirements this reporting period? \$3,578
- B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? \$151,640
- C. This year what is/are your source(s) of funding for the storm water program, and annual revenue (amount or percentage) derived from each?

Source: Storm Water Utility Amount \$ 93,000 OR % 100

Source: _____ Amount \$ _____ OR % _____

Source: _____ Amount \$ _____ OR % _____

- D. How many FTEs does your municipality devote to the storm water program (specifically for implementing the storm water program; not municipal employees with other primary responsibilities)? 1
- E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Utah Cnty SD Coalition	Public Education & Outreach	Member of Coalition
_____	_____	_____
_____	_____	_____

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your storm water management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
None currently, but working			
on this for the 2011/2012			
fiscal year			

B. What environmental quality trends have you documented over the duration of your storm water program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

Same as above

10. Additional Information

In the space below, please include any additional information on the performance of your MS4 program. If providing clarification to any of the questions on this form, please provide the question number (e.g., 2C) in your response.

Section 8A - Program resources: Salaries are not itemized as a line item expense but are rolled into other utilities.

Certification Statement and Signature

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.

Yes

Shane Sorensen  City Engineer

09/26/2011
Date (mm/dd/yyyy)

JUSTIFICATION FOR CHANGES

JUSTIFICATION FOR CHANGES

Updating Storm Water Management Program: Updates to the Storm Water Management Program must be done in accordance with Section 4.4 of the MS4 Permit with the following information submitted to the State.

BMP Name: All BMPs AND SWMP

BMP Description: _____

Explanation of ineffectiveness or infeasibility As we have learned more, we felt it necessary to start over w/ a new SWMP to be in compliance with the permit.

Affected Goal _____

Replacement BMP Name: _____

Replacement BMP Description: _____

Anticipated Effectiveness/feasibility _____

Analysis of Replacement BMP: _____

- See attachments:
- Old BMP Fact Sheets
 - Effectiveness Data
 - Replacement Fact Sheet
 - Anticipated Effectiveness Data
 - Analysis Information
- New SWMP

Certification and Signature. (6.8.3) (by Principal Executive Officer or Ranking Elected Official)

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.

MS4 Name

Print name

Signature

Date

JUSTIFICATION FOR CHANGES

Updating Storm Water Management Program: Updates to the Storm Water Management Program must be done in accordance with Section 4.4 of the MS4 Permit with the following information submitted to the State.

BMP Name: Entire SWMP

BMP Description: "

Explanation of ineffectiveness or infeasibility Outdated

Affected Goal All MCM's

Replacement BMP Name: Comment: The Entire SWMP was updated

Replacement BMP Description: per 2016 MS4 Renewal Permit. Many SOP's were updated, refined, appendix updated,

Anticipated Effectiveness/feasibility budget inserted, etc. Overall the SWMP was

Analysis of Replacement BMP: updated to reflect more accurately what occurs in the field.

- See attachments: Old BMP Fact Sheets
- Effectiveness Data
- Replacement Fact Sheet
- Anticipated Effectiveness Data
- Analysis Information

Certification and Signature. (6.8.3) (by Principal Executive Officer or Ranking Elected Official)
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.

Alpine City
MS4 Name

Jed Huhlestein
Print name

Jed
Signature

7-1-16
Date

JUSTIFICATION FOR CHANGES

Updating Storm Water Management Program: Updates to the Storm Water Management Program must be done in accordance with Section 4.4 of the MS4 Permit with the following information submitted to the State.

BMP Name: _____

BMP Description: _____

Explanation of ineffectiveness or infeasibility _____

Affected Goal _____

Replacement BMP Name: _____

Replacement BMP Description: _____

Anticipated Effectiveness/feasibility _____

Analysis of Replacement BMP: _____

- See attachments:
- Old BMP Fact Sheets
 - Effectiveness Data
 - Replacement Fact Sheet
 - Anticipated Effectiveness Data
 - Analysis Information

Certification and Signature. (6.8.3) (by Principal Executive Officer or Ranking Elected Official)
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.

MS4 Name

Print name

Signature

Date

MISC INFORMATIONAL REPORTS

Pollutants of Concern Possible Conclusions



THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

OTHER J-U-B COMPANIES

Salt Lake Area

Apparent biggest pollutants in the Salt Lake study include:

- Total Suspended Solids
- Total Phosphorus
- BOD₅
- Metals

Pollutant levels are trending down – suggesting that measures that are being implemented are working – resulting in a slow downward trend. This in turn suggests that Salt Lake area programs are experiencing slow success and might serve as a model for what other cities might consider.

Total phosphorus and BOD₅ appear to be a bigger problem in commercial landuse areas – suggesting that if a community has large areas of commercial landuse that these two pollutants might be of special interest. It also suggests that phosphorus and BOD₅ might be the focal point of a commercial education campaign.

First flush in the Salt Lake area does not seem to be significant – suggesting that Post-construction BMPs should be designed to treat the entire storm not just the first flush.

TSS and Phosphorous appear to be linked. If phosphorous might be a problem in your community you might want to target TSS removal with Education and Post-Construction BMPs.

Logan Area

Pollutants that might be a problem in Logan include:

- BOD₅
- Phosphorus
- E. coli
- TDS
- Copper

BOD₅ is generally considered to be a measure of organic matter. BOD₅ is also generally considered to be an indicator of pollutants, not necessarily a pollutant itself. BOD₅ can be measured using an instantaneous probe on-site or it can also be measured using analytical methods in a lab.

E. coli is generally considered to suggest the presence of human or animal waste. It is often present in rural areas with higher livestock concentrations or near parks where duck and geese are present.

General Conclusions

- BOD₅ and phosphorous seem to be reoccurring themes and are likely to be a problem in most communities and should probably be on your target pollutant list.
- E. coli may be a problem depending on livestock and wildlife concentrations.
- Removing TSS is a good way to target phosphorous
- Be cautious about buying in to “first flush” theories in our area
- BOD₅ can usually be addressed by removing organic matter

Problems with Pollutant and Source of Pollutant

Parameter	Problems with Pollutant	Possible Source of Pollutant
BOD ₅		WWTP--human waste & food residue, food processing, paper industries, Ag runoff--animal droppings, crop residues
COD		
Nitrate as N	Can cause oxygen depletion	
Nitrite as N	Can cause oxygen depletion	
Total Ammonia Nitrogen (NH ₃)		
Total Kjeldahl Nitrogen (TKN)		
Total Nitrogen (TN)		Fertilizers
Phosphate, Ortho as PO ₄		
Total Phosphorus (TP)	Cause algae growth, which when they die exert a high BOD demand	WWTP--phosphorus based detergents, Agricultural--Fertilizer--runoff, food processing waste
pH		Industry,
Hardness (as CaCO ₃)		
Total Dissolved Solids (TDS)		Salts--deicing agent for roads in winter, industries
Total Suspended Solids (TSS)		Mining, logging, construction activity
Calcium, Total		
Magnesium, Total		
Cadmium, Total	Bioaccumulates in tissues, kidney damage, chronic effects	Sewage sludge applied to land, phosphate fertilizers
Copper, Dissolved		WWTP, industry, architectural copper, vehicle brake pads, copper-containing pesticides, and marine antifouling coatings; primary discharger might vary with the rainy season
Lead, Dissolved	Bioaccumulates in tissues, chronic effects--anaemia, neuropsychological disorders	Cars, mining
Zinc, Dissolved	Can be toxic at high levels to organisms	Tire wear, industries
E. coli	Is used as an indicator of pathogens	Animals and people
Oil & Grease		Restaurants, cars, asphalt surfaces
Water Temperature	Alters plant and animal eco system	High temperatures from industry
Turbidity	Affects vegetative growth, ability of light to transmit through water	Sediment--eroded soil particles, bacteria
Conductivity		
Dissolved Oxygen		
Dissolved Oxygen, Saturated		
Oxidation Reduction Potential		

MCM 1 - Public Outreach and Education on Storm Water Impacts

CLASSROOM EDUCATION ON STORM WATER

- The number of educational materials distributed to schools.
- The number of classes, schools, or students that participate in municipal-sponsored storm water workshops or activities.
- The number of certificates or other rewards given out for classes/students who participate in storm water education.
- The number of students receiving storm water education as part of after-school programs.

EDUCATION/OUTREACH FOR COMMERCIAL ACTIVITIES

- The number of educational materials that were distributed to business owners and operators.
- The number of certified businesses that participated in training for a "green certification" program.
- The number of businesses trained under a training program.

EDUCATIONAL DISPLAYS, PAMPHLETS, BOOKLETS, AND UTILITY STUFFERS

- List compiled of target audiences and possible activities for each.
- The number of materials created and distributed.
- The number of events attended with displays.
- The number of people at an event who saw the display (guest book) or took a pamphlet/booklet.

LAWN AND GARDEN ACTIVITIES

- The number of partnerships established with local lawn care businesses.
- The number of partnerships established with lawn care suppliers/retail stores.
- The number of municipal employees trained in proper lawn care practices.
- The number of homeowners that attend training workshops for lawn/garden care BMPs.
- A survey of homeowners about their lawn care behavior before and after message is delivered.
- Fertilizer and pesticide residues in runoff.

LOW IMPACT DEVELOPMENT

- The number of meetings held to educate citizens and developers about low impact development.
- The number of new site plans that incorporate low impact development principles and practices.
- The number of municipal-owned facilities that are retrofitted with low impact development practices.

PET WASTE MANAGEMENT

- Whether or not a pet waste ordinance was developed.
- The number of "clean up after your pet" signs posted in parks and neighborhoods.
- The number of dog-walking designated areas in parks.
- The number of citations given under an enforcement program.
- The number of posters/brochures put up in pet supply stores.
- The number of educational materials given out to pet owners.

PROMOTIONAL GIVEAWAYS

- The number of items given out.
- The number of events attended (to give out items).
- The number of partnerships with radio and TV stations for promotions.

PROPER DISPOSAL OF HOUSEHOLD HAZARDOUS WASTES

- The pounds of household hazardous waste collected on amnesty days.
- The number of pickup days per year.

- The number of educational materials distributed to homeowners.
- The number of partnerships established with businesses.
- The number of curbside pickup days.

TAILORING OUTREACH PROGRAMS TO MINORITY AND DISADVANTAGED COMMUNITIES AND CHILDREN

- The number of brochures/posters created in non-English languages.
- Attendance at workshops or public meetings held in low-income or minority neighborhoods.
- The number of educational materials distributed to low-income neighborhoods.

TRASH MANAGEMENT

- The mass of trash removed from conveyance systems and receiving waters during cleanup campaigns.
- The number of structural trash controls installed.
- Floatables in receiving waters.
- Track the number of additional trash bins installed and signage posted.
- Whether or not a litter ordinance was established.

USING THE MEDIA

- The number of public service announcements made on radio and TV.
- The number of storm-water-related press releases.
- The number of storm-water-related articles published.

WATER CONSERVATION PRACTICES FOR HOMEOWNERS

- The number of partnerships established with local water utilities.
- The number of water conservation utility inserts that are distributed with utility bills.
- A survey of homeowners about their water conservation behavior before and after the message is delivered.

MCM 2 - Public Involvement/Participation

ADOPT-A-STREAM PROGRAMS

- Track the number of participants in Adopt-A-Stream programs.
- Water quality at Adopt-A-Stream sites.
- The quantity of trash and debris removed by Adopt-A-Stream volunteers.

ATTITUDE SURVEYS

- The number of citizens solicited to complete surveys.
- The number of completed surveys.
- A survey of citizens gauging change in attitude/behavior after storm water education activities are held.

COMMUNITY HOTLINES

- The number of hotlines established to handle storm-water-related concerns.
- The number of calls received by hotlines.
- The number of problems/incidents remedied as a result of hotline calls.

REFORESTATION PROGRAMS

- The number of volunteer tree planters.
- The number of trees planted.
- The number of acres planted with trees.

STAKEHOLDER MEETINGS

- The number of meetings held.
- The number of attendees.
- The number of actions taken as a result of stakeholder meetings.



STORM DRAIN STENCILING

- The number or proportion of drains stenciled.
- The number of stenciling volunteers.
- The number of drains stenciled.

STREAM CLEANUP AND MONITORING

- The number of stream cleanups.
- The number of cleanup participants.
- The quantity of waste collected as a result of cleanup efforts.
- The number of stream miles cleaned.

VOLUNTEER MONITORING

- The number of volunteers participating in monitoring programs.
- The frequency of monitoring in the watershed.
- The number of volunteer monitoring stations established in the watershed.
- The number of volunteer monitoring training sessions held.
- The number of actions that were taken as a result of the monitoring data collected by volunteers.

WATERSHED ORGANIZATION

- Whether or not a watershed organization was established.
- The number of participants in the watershed organization.
- The number of actions taken as a result of the watershed organization.



WETLAND PLANTINGS

- The acres of land planted.
- The number of volunteers that participated in planting.
- The number of planting events held.

MCM 3 - Illicit Discharge Detection and Elimination

FAILING SEPTIC SYSTEMS

- The number of regular maintenance and inspection reminders issued to tank owners.
- The number of partnerships formed with private pumping companies.
- Whether or not an inventory of tanks and when they were last serviced was completed.
- The number of post construction inspections conducted to insure proper installation.
- The number of scheduled pump-outs and routine maintenance work conducted.

IDENTIFYING ILLICIT CONNECTIONS

- Inventory conducted and sites prioritized for inspection.
- The number of field tests conducted in high-risk areas.
- Whether or not an ordinance was developed to allow entrance into private buildings for the purpose of conducting tests.
- The number of illicit connections reported by business employees.
- The number of survey responses indicating a possible illicit connection.
- The number of illicit connections found.
- The number of illicit connections repaired/replaced.
- The number of new buildings inspected.



ILLEGAL DUMPING

- The number of flyers, posters, or other public education tools distributed.

- The number of illegal dumps reported by citizens.
- The number of penalties enforced upon the participants of illegal dumps.
- Whether or not an inventory of the prime areas for illegal dumping was completed.
- The number of rewards distributed to citizens who reported an illegal dump.
- The number of illegal dump clean-ups completed.

INDUSTRIAL/BUSINESS CONNECTIONS

- The number of dry weather tests completed.
- The number of high-risk connections prioritized.
- The number of codes developed to prohibit connections.
- The number of illicit connections reported by business employees.
- The number of survey responses indicating a possible illicit connection.
- The number of illicit connections found.
- The number of illicit connections repaired/replaced.
- The number of new buildings inspected.
- Whether or not an ordinance was developed for mandatory inspections of new buildings.

SANITARY SEWER OVERFLOWS

- The frequency of routine maintenance and cleaning activities.
- The number of overflows reported.
- The number of overflow causes that were identified during inspections.
- The number of sites repaired.
- Whether or not an ordinance was developed to prohibit new and illicit connections.

WASTEWATER CONNECTIONS TO THE STORM DRAIN SYSTEM

- The number of rerouted connections.
- The number of dry weather monitoring activities performed.
- Whether or not an inventory and prioritization of potential connection sites was completed.
- The number of field tests conducted in high-risk areas.
- The number of unwarranted connections reported.
- The number of unwarranted connections found.
- The number of unwarranted connections repaired/replaced.
- Whether or not an ordinance was developed for mandatory inspections of new buildings.
- The number of new buildings inspected.

MCM 4 - Construction Site Storm Water Runoff Control

BMP INSPECTION AND MAINTENANCE

- The frequency of inspection and maintenance of BMPs.
- The number of failed storm water BMPs.
- The number of BMPs reported to be in need of repair.
- Whether or not an inventory of inspection and maintenance activities was created and is regularly maintained.

CONSTRUCTION REVIEWER

- The number of trained inspectors.
- Whether or not an ordinance was developed requiring that sites be inspected.
- The number of inadequate sites/plans reported by inspectors.
- The number of non-compliant permits reported.

CONSTRUCTION SEQUENCING

- Whether or not an ordinance was developed that requires construction sequencing.
- The number of construction sites that practice sequencing.
- Suspended solids levels at the site outfall.

CONTRACTOR CERTIFICATION AND INSPECTOR TRAINING

- The number of certified contractors.
- The number of training and certification programs offered.
- Whether or not an ordinance requiring certification was developed.
- Whether or not an incentives program for certified contractors and inspectors was developed.
- The number of certified inspectors.
- The number of sites inspected.

GENERAL CONSTRUCTION SITE WASTE MANAGEMENT

- Whether or not an ordinance was developed to ensure that all regulations are followed for material storage, disposal, etc.
- Water quality at the site outfall.
- The frequency of inspection and maintenance activities.

MODEL ORDINANCES

- Whether or not an ordinance was developed to address construction site runoff control.
- The number of enforcement actions taken.
- The number of stop work orders given.
- The number of bonding requirements set.

PRESERVING NATURAL VEGETATION

- The amount of naturally vegetated land area preserved.
- The number of construction sites that preserve natural vegetation.
- Whether or not an ordinance was developed that requires that some natural vegetation be preserved at construction sites.
- Water quality at the site outfall.

SPILL PREVENTION AND CONTROL PLAN

- The number of reported spills.
- Whether or not an ordinance for storage of high-risk chemicals was developed.
- The number of personnel trained in spill response.

MCM 5 - Post Construction Storm Water Runoff Control in New Development/Redevelopment

ALTERNATIVE TURNAROUNDS

- The reduction in impervious cover.
- Whether or not development codes were changed to allow alternative turnarounds.
- The reduction in runoff quantity.
- Changes in the physical characteristics of streams downstream from modified areas.

ALTERNATIVE PAVERS

- Whether or not development codes were changed to allow for alternative pavers.
- The amount of new alternative paver installations added or replaced.
- The number of new development sites that use alternative pavers.

- The reduction in runoff quantity.
- Changes in the physical characteristics of streams downstream from areas with alternative paver installations.

BIORETENTION

- The reduction in impervious cover.
- The reduction in runoff quantity.
- Changes in runoff water quality (nutrients, sediments, metals, organics, etc.).
- The number of new bioretention cells installed (both commercial and residential).
- The number of acres that are drained by bioretention cells.

BMP INSPECTION AND MAINTENANCE

- The frequency of inspection and maintenance activities.
- The number of problems that were identified and remedied.
- Whether or not an inventory of BMPs requiring maintenance was completed and is regularly updated.

BUFFER ZONES

- Whether or not development codes were changed to require buffer zones.
- The acreage of land conserved as buffers.
- The acreage of land converted to buffers.
- Changes in the physical characteristics of streams downstream from areas with buffer zones.
- The frequency of inspections and maintenance activities in buffer zones.
- The acreage that drains to buffer zones.

CATCH BASIN

- Whether or not an inventory of catch basins was completed.
- The number of catch basins retrofitted with filtering devices.
- The quantity of sediment removed from catch basins.

CONSERVATION EASEMENTS

- The acreage of land conserved under easements.
- Whether or not an inventory of lands that could be conserved with conservation easements was completed.

DRY EXTENDED DETENTION PONDS

- The reduction in runoff quantity.
- The number of new dry ponds installed.
- The acreage of land drained by dry ponds.

ELIMINATING CURBS AND GUTTERS

- Whether or not development codes were changed.
- The reduction in runoff quantity.
- The number of new developments without curbs and gutters.
- The number of curb cuts made in existing developments.
- The number of miles of gutterless streets.

GRASSED SWALES

- The number of new grassed swales installed.
- The miles of streets with grassed swales.
- The reduction in runoff quantity.
- The number of acres drained by grassed swales.

GRASSED FILTER STRIP

- The number of new grassed filter strips installed.
- The miles of streets with grassed filter strips.

- The reduction in runoff quantity.
- The number of acres drained by grassed filter strips.

GREEN PARKING

- Whether or not development codes were changed to allow green parking.
- The number of new green parking lots installed.
- The reduction in runoff quantity.
- The number of impervious acres served by green parking lots.
- The number of impervious lots converted to green lots.

IN-LINE STORAGE

- The reduction in peak flow of runoff.
- The number of basins retrofitted with flow regulators.
- The acreage drained by in-line storage systems.

INFILTRATION BASIN

- The reduction in runoff quantity.
- The number of new infiltration basins installed.
- The acreage drained by infiltration basins.

INFILTRATION TRENCH

- The reduction in runoff quantity.
- The number of new infiltration trenches installed.
- The acreage drained by infiltration trenches.

INFRASTRUCTURE PLANNING

- Whether or not development codes were modified.
- The number of new developments using storm water BMPs.
- The reduction in impervious surface area and infrastructure.

MANUFACTURED PRODUCTS FOR STORM WATER INLETS

- Whether or not an inventory of areas where installation of manufactured products would be appropriate was completed.
- Whether or not a review was conducted to identify which products would be best for each inlet.
- The number of manufactured products installed in storm water inlets.

NARROWER RESIDENTIAL STREETS

- Whether or not development codes were modified.
- The reduction in impervious surface area.
- The number of new developments that use narrow streets.
- The number of miles of narrow streets.

ON-LOT TREATMENT

- The reduction in runoff quantity.
- The reduction in runoff peak flow.
- The number of lots that use on-lot treatment.
- The acreage of impervious surfaces that drain to on-lot treatment BMPs.
- The number of manufactured products sold to store runoff on-site (i.e., rainbarrels).
- Changes in water quality downstream from areas that use on-lot treatment.

OPEN SPACE DESIGN

- Whether or not development codes were modified to accommodate open space developments.

- The number of new developments that use open space design principles.
- The number of acres of open space preserved with open space design.

ORDINANCES FOR POSTCONSTRUCTION RUNOFF

- Whether or not an ordinance was developed to address post-construction runoff.
- The projected amount of impervious cover reduced under the new ordinance.
- The number of enforcement actions that occur as a result of the new ordinance.

POROUS PAVEMENT

- Whether or not development codes were modified to allow for porous pavement.
- The amount of new porous pavement added or replaced.
- The number of new development sites that use porous pavement.
- The reduction in runoff quantity.
- Changes in the physical characteristics of streams downstream from areas with porous pavement installations.

SAND AND ORGANIC FILTERS

- The reduction in runoff quantity.
- The number of new sand and organic filters installed.
- The acreage of impervious surface that drains to sand and organic filters.

STORM WATER WETLAND

- The reduction in runoff quantity.
- The number of storm water wetlands created.
- The acreage of impervious surface that drains to storm water wetlands.

URBAN FORESTRY

- Whether or not development codes were modified to promote urban forestry.
- Whether or not an ordinance was developed to promote urban forestry.
- The number of trees planted as a result of urban forestry initiatives.
- The acreage of treed land.
- The reduction in runoff quantity.
- The acreage of forest habitat created.
- Aesthetic and shade benefits.

WET PONDS

- The reduction in runoff quantity.
- The number of wet ponds installed.
- The acreage of impervious surface that drains to wet ponds.

ZONING

- Whether or not development codes were modified.
- The amount of open space protected with new zoning codes.
- The projected number of new storm water treatment areas expected under the new zoning codes.
- The projected number of upgrades to existing storm water facilities expected as a result of changes in expected development density.

MCM 6 - Pollution Prevention/Good Housekeeping for Municipal Operations

ALTERNATIVE PRODUCTS

- The number of educational materials distributed.
- The number of consumers surveyed who have increased their use of alternative products.

ALTERNATIVE DISCHARGE OPTIONS FOR CHLORINATED WATER

- Whether or not an ordinance was developed to prevent direct discharge of chlorinated water.
- The number of pool owners informed of the options for discharging chlorinated water.
- Chlorine levels in receiving waters.
- The number of enforcement actions pertaining to pool water discharges.

AUTOMOBILE MAINTENANCE

- The number of employees trained in preventing pollution from automobile maintenance activities.
- The number of sites rewarded as being a "clean site" under a rewards program.
- The number of spills reported.
- The number of educational materials distributed at garages, auto shops, and other automobile-related businesses.

HAZARDOUS MATERIALS STORAGE

- The number of regularly inspected storage units.
- The number of employees trained in hazardous material storage and maintenance.
- The total number of storage facilities equipped to store hazardous materials.
- The level of toxic pollutants in receiving waters.
- The number of materials distributed educating citizens on home storage of hazardous materials.

ILLEGAL DUMPING CONTROL

- Whether or not areas where illegal dumping is common were identified.
- The number of "no dumping" signs posted.
- The number of educational materials distributed.
- The number of reports of illegal dumping received.
- The number of dump sites cleaned up.
- The number of sites improved to eliminate them as target dumping spots.
- The number of enforcement actions pertaining to illegal dumping.
- Whether or not a partnership with the community was established to promote reporting and to educate citizens.

LANDSCAPING AND LAWN CARE

- The number of stores/gardens participating in education program.
- The number of people trained in safe landscaping, lawn care, and pest management techniques.
- The number of classes/seminars offered in landscaping and lawn care.
- The number of educational materials distributed.
- Whether or not a survey of lawn and landscaping methods used by the community was conducted.

MATERIALS MANAGEMENT

- The number of facilities storing hazardous materials.
- The frequency of inspection and maintenance visits to storage facilities.
- The number of personnel trained in hazardous material handling and storage.
- The amount of waste generated by municipal operations.
- Whether or not an inventory of hazardous materials was created for each storage facility.

PARKING LOT AND STREET CLEANING

- Whether or not roads and parking lots were inventoried and prioritized for cleaning.
- The number of scheduled road cleanings.
- The suspended solids levels in runoff.
- The pounds of debris collected from street sweeping.

PEST CONTROL

- The number of businesses participating in education at the point of purchase.
- The number of municipal employees trained in integrated pest management.
- Pesticide levels in runoff and receiving waters.
- The number of educational materials distributed.

PET WASTE COLLECTION

- The number of dog parks.
- The number of signs posted stating regulations.
- The number of educational materials distributed.
- The number of "pooper-scooper" stations installed.
- Whether or not an ordinance was created to address pet waste.

ROAD SALT APPLICATION AND STORAGE

- The number of storage facilities included in a regular inspection and maintenance program.
- The number storage facilities repaired.
- The number of employees trained in road salt application.
- The quantity of salt applied to roadways.
- The quantity of alternative products used.
- The water quality at outfalls near downstream of storage facilities.

ROADWAY AND BRIDGE MAINTENANCE

- Whether or not a current list of roadway and bridge construction is maintained.
- The quantity of debris removed from construction sites.
- The number of employees trained in pollution prevention techniques.
- The amount of deicing salts used.
- The number of catch basins at constructions sites that are cleaned regularly.

SEPTIC SYSTEMS CONTROLS

- The number and location of septic systems.
- The number of systems that are inspected and maintained regularly.
- The number of reminder and educational flyers distributed.
- The number of people trained in inspection and installation of septic systems.
- The number of failed septic systems.

SPILL RESPONSE AND PREVENTION

- Whether or not an inventory of municipal facilities at risk for spills was created.
- The number of leak detection devices installed at municipal facilities.
- The number of preventative maintenance procedures performed on tanks, valves, pumps, pipes, and other equipment.
- Whether or not a spill response plan was developed for municipal facilities.
- The number of personnel trained in spill response.
- The number of regularly inspected high-risk facilities.
- The number of educational materials distributed to municipal employees.

STORM DRAIN SYSTEM CLEANING

- Whether or not areas with high pollutant loadings were inventoried and prioritized for cleaning.
- The length of storm drain pipe cleaned regularly.
- The number of outfalls cleaned regularly.
- The amount of trash, sediment, and other pollutants removed during cleaning.

USED OIL RECYCLING

- The number of gallons of used oil collected from municipal operations.

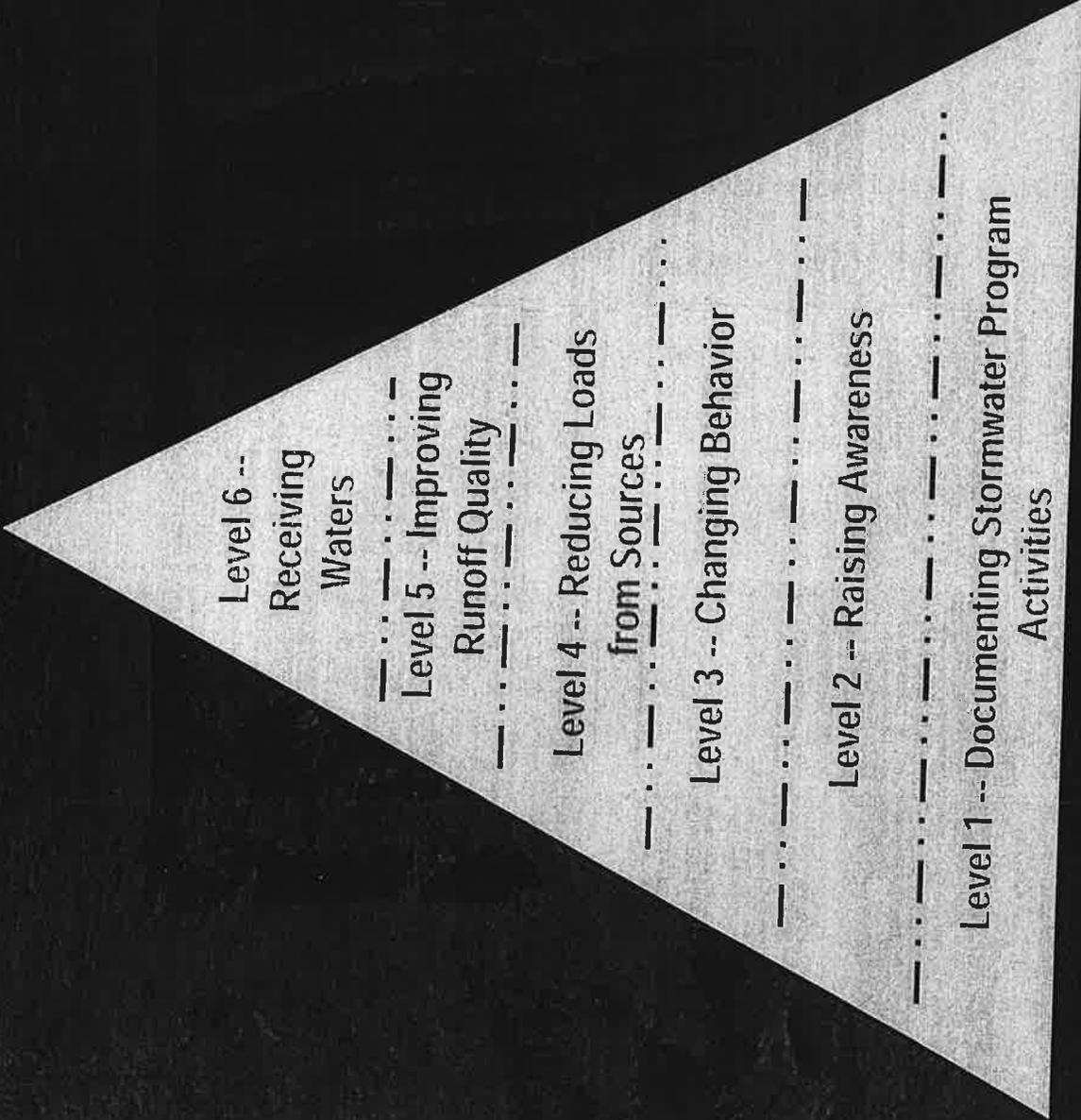
MS4 Measurable Goal Ideas

- The number of recycling facilities that collect oil from municipal operations.
- The number of educational materials distributed to municipal employees.

VEHICLE WASHING

- The number of educational materials distributed to municipal employees.
- The number of designated municipal vehicle washing areas.

How Can We Assess Effectiveness?



Program
(Levels 5-6)

Element
(Levels 2-5)

Activity
(Levels 1-4)