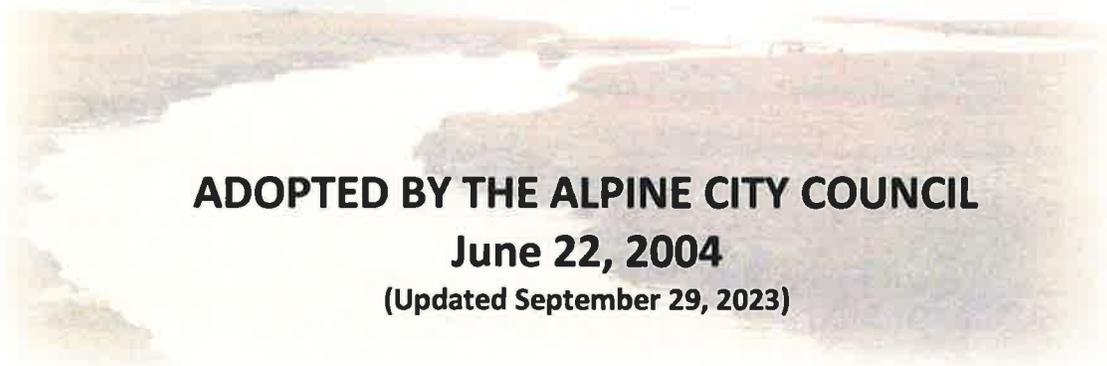




# **STORM WATER MANAGEMENT PROGRAM**



**ADOPTED BY THE ALPINE CITY COUNCIL  
June 22, 2004  
(Updated September 29, 2023)**



**THE  
LANGDON  
GROUP**



**GATEWAY  
MAPPING  
INC.**

OTHER J-U-B COMPANIES

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## Introduction

### City of Alpine

Alpine is located on State Highway 74 in the extreme northeast corner of Utah Valley, five miles north of American Fork near the mouth of American Fork Canyon. See Figure 1. In 1849, a group of men was appointed by Brigham Young to travel to Utah Valley and determine its capabilities for a stock range. Tall bunch grass and meadow grass grew abundantly and cattle soon roamed the valley and low hills. In July 1850, another group headed to Utah Valley with the intention of locating there. This group ended up on lower Dry Creek (around Lehi City), but unhappy with the location because of insufficient water, their leader, William Wordsworth, returned to Salt Lake. In early September 1850, Wordsworth and his family and six others returned and settled in the area now known as Alpine (then known as Mountainville). Soon after the settlers arrived, the census taker came and his records showed a total of 29 persons lived in Alpine.

On January 19, 1855, the Mountainville settlement was officially incorporated as the City of Alpine. By 1857, about 40 families called Alpine home. By 1860, the population of Alpine had increased to 135. By the turn of the century, the population reached 520. By 1962, there were 900 citizens in Alpine. The 1970's brought phenomenal growth and by 1980, the census count was 2,656. This growth has continued and in 1990, the population of Alpine was 3,492. The 2010 population is estimated to be 10,500 and is projected to increase to approximately 14,500 at build out.

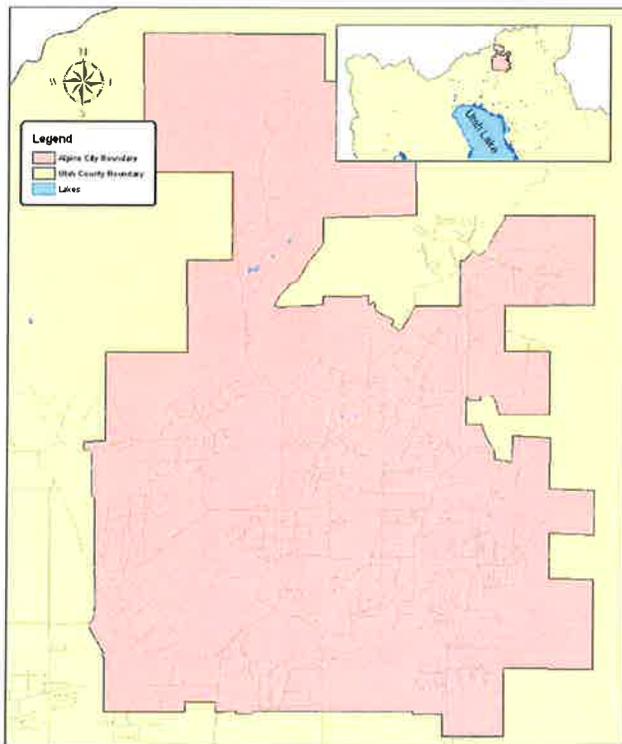


Figure 1 – Vicinity Map of Alpine City

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

The Environmental Protection Agency (EPA) published the Storm Water Phase II Rule on December 8, 1999. The Utah Department of Environmental Quality acts as the administrator of the program for the EPA in the State of Utah. To comply with the requirements of the Phase II Rule, municipalities must obtain an “Authorization to Discharge Municipal Storm Water under the Utah Pollutant Discharge Elimination System (UPDES)” from the State of Utah.

The Storm Water Phase II Rule requires municipalities in urbanized areas to develop and implement a Storm Water Management Program (SWMP). The SWMP is the most substantial part of the UPDES Permit. The SWMP must address six minimum control measures:

1. Public education and outreach on storm water impacts
2. Public involvement/participation
3. Illicit discharge detection and elimination
4. Construction site storm water runoff control
5. Post-construction storm water management in new development and redevelopment
6. Pollution prevention/good housekeeping for municipal operations

Municipalities must develop best management practices (BMPs) to address the requirements of each of these six minimum control measures. They must also establish measurable goals for the BMPs. Municipalities must conduct a review of the effectiveness of the SWMP, and submit a corresponding report to the State annually. The SWMP must be updated every 5 years.

The Alpine Storm Water Management Program was first developed in April 2003 in response to the EPA Storm Water Phase II Rule. It consists of practices intended to reduce storm water runoff quantity and to improve storm water runoff quality in Alpine.

### Alpine City Storm Water Management Program Update

This Alpine City Storm Water Management Program Update was prepared to renew the previously 2003 Permit and continue Alpine City's coverage under Small MS4 General UPDES Permit No. UTR090000 issued on August 1, 2010. The Permit Update is intended to reduce the discharge of pollutants from Alpine City, protect water quality, and satisfy the appropriate water quality requirements of the Utah Water Quality Act. The Storm Water Management Program (SWMP) is the majority of the update. The SWMP has addressed the six minimum control measures described in Part 4.2 of the Permit.

The SWMP has implemented a documentation process for gathering, maintaining, and using information to conduct planning, set priorities, track the development and implementation of the SWMP, evaluate Permit compliance/non-compliance, and evaluate the effectiveness of the SWMP implementation. On November 1, 2010 the Minimum Control Measures (MCM) List was created to specify the planning and priorities of the program and the documentation, tracking and maintenance of records were organized in the Appendix.

The SWMP has included a schedule in the MCM list that implements the six minimum control measures as described in the Permit. The SWMP document utilizes the MCM List and Appendix to organize the BMPs and measurable goals that will be implemented in each of the storm water minimum control measures. The MCM List identifies target pollutants and audiences, desired results, measurable goals with milestones, associated BMPs and measure of success. The BMPs are located in the appropriate Appendix.

The SWMP Appendices contain the documents to track the number of inspections performed, official enforcement actions taken, and types of public education activities implemented as required for each SWMP component. Some of the items listed below will be developed during the 5 year term of the permit. The Appendices are organized as follows:

**APPENDIX A - Supplemental Guide to Storm Water Management for Contractors**  
This Appendix A is intended to be part of the SWMP, yet removable for Contractors, Developers and Engineers.

**APPENDIX B - Supplemental Guide to Storm Water Management for Public Works**  
This Appendix B is intended to be part of the SWMP, yet removable for Public Works Personnel

**APPENDIX C - IDDE Program**  
This Appendix C includes IDDE Procedures/SOP's, Flow charts for Spill Response Procedure and Telephone call-in Response Procedure, IDDE BMP Fact Sheets and the Inspection Report Inventory

**APPENDIX D - Documentation**  
This Appendix D includes Inspection Forms (Construction and Public Facilities), Enforcement Actions, Training Schedule, Training Log, Visual Monitoring Forms, Maintenance Records, Annual Reports, Budget, Public Education Activities and Justification for changes.

**APPENDIX E - City Ordinances**  
This Appendix E includes the city ordinances that will be reviewed and modified if necessary to implement the Permit provisions for General Stormwater, Construction and Post Construction.

**APPENDIX F - State/City Permits**

**APPENDIX G- Maps/Map Book**  
This Appendix D includes Collection System, Floor Drains, Facility Storm Drain Maps, City Owned Facilities Inventory, Post Construction BMPs, Outfalls Inventory, Active Construction Sites Inventory, Spills, Enforcement Action Log and Monitoring Locations Inventory

The following organization chart was established to identify the persons responsible for implementing or coordinating the BMPs contained within the SWMP document. See Figure 2. The Organization Chart Department Responsibilities explain the duties each member of the organization has been assign to accomplish the goals of the SWMP.

MS4 ORGANIZATION CHART  
Alpine City  
March, 2018

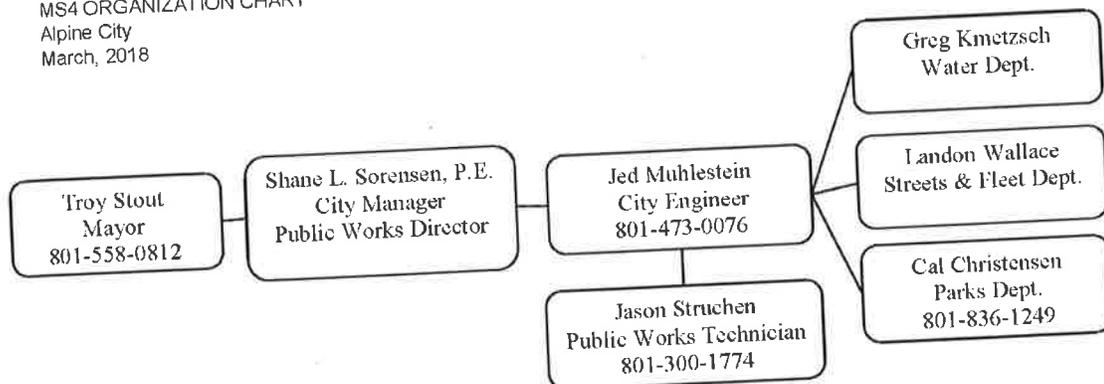


Figure 2 - Alpine City SWMP Organization

Organization Chart Department Responsibilities

**Mayor**

- Coordinate efforts with City Administrator and City Council

**City Administrator**

- Liaison with Mayor and City Council

**Public Works Director/City Manager**

- Liaison with administration and City Council
- Oversee SWMP program and work with department heads
- Coordination with City Engineer

**City Engineer**

- General coordination of the SWMP
- Coordinates or oversees SWMP training and public education requirements
- Oversight of:
  - o Municipal Facilities Inspections
  - o Storm drain system maintenance
  - o General BMP maintenance
- Annual report
- Manage private storm water maintenance agreements
- Updating SWMP

**Public Works Technician**

- Tracking and documentation of activities and actions
- Database updates
- Help with all reporting
- Construction SWPPP inspections
- Storm Drain mapping

**Parks Department Head**

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

**Water Department Head**

- Training water dept. personnel
- Water dept. equipment operation
- Equipment maintenance for water dept. equipment
- Weekly shop inspections

### **Streets & Fleet Department Head**

- Annual inspections of permanent storm drain BMP's, including detection & elimination of improper connections or illicit discharges
- Streets dept. maintenance work area
- Streets dept. equipment operation
- Equipment maintenance for streets dept.
- Training streets dept. personnel
- Chemicals storage in work area
- Snow plowing program
- Street sweeping program
- Salt and materials storage stockpile areas
- Training fleet dept. personnel
- Chemicals, fluids, and oils in work area, waste oils/fluids

## Statement of Basis

Permittee: City of Alpine

Permit Number: UTR090041

Location of MS4: 20 North Main, Alpine, Utah 84004

Longitude 111°46'39.80"W / Latitude 40°27'14.39"N

Submitted with this permit is the following:

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

### Certification

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

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

## Impaired Waters / Controlling Regulated Pollutants (TMDLS)

Part 3.1. of the Permit requires the Permittee to determine whether storm water discharge from any part of the MS4 contributes to a 303(d) listed (i.e., impaired) water-body. If the Permittee has “303(d)” discharges described above, the Permittee must also determine whether a Total Maximum Daily Load (TMDL) has been developed by the Division and approved by EPA for the listed water-body. If there is an approved TMDL, the Permittee must comply with all requirements associated with the TMDL as well as the requirements of Part 3.1.2. If no TMDL has been approved, the Permittee must comply with Part 3.1.2 and any TMDL requirements once it has been approved. Part 3.1.2 of the Permit states that if the Permittee discharges to an impaired water-body, the Permittee must include in its SWMP document a description of how the Permittee will control the discharge of the pollutants of concern. This description must identify the measures and BMPs that will collectively control the discharge of the pollutants of concern. The measures should be presented in the order of priority with respect to controlling the pollutants of concern.

The storm drain system in Alpine City discharges to Dry Creek and its tributaries and Dry Creek eventually discharges into Utah Lake. See Figure 3.

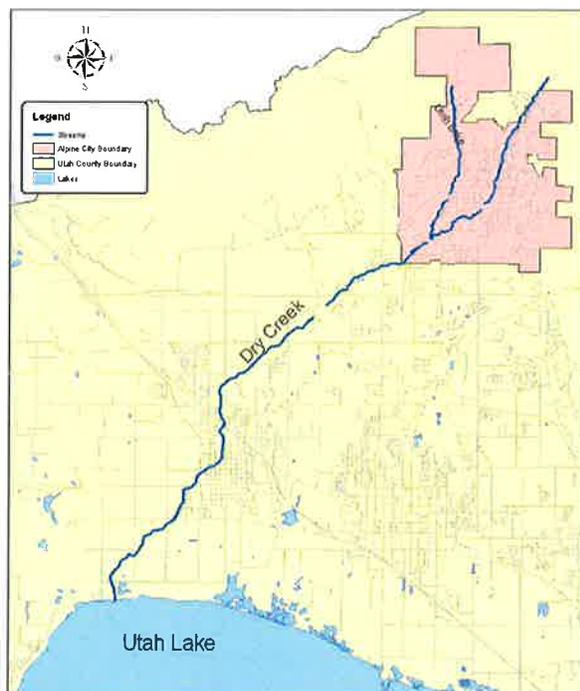


Figure 3 – Connection of Streams to Utah Lake

Utah Lake is listed on Utah’s 2004 §303(d) list for exceedances of state criteria for total phosphorus (TP) and total dissolved solids (TDS) concentrations. A Total Maximum Daily Load (TMDL) has not been developed by the Division and approved by EPA for Utah Lake. Primary sources for TDS in receiving waters are agricultural and residential runoff, leaching of soil contamination and point source water pollution discharge from industrial or sewage treatment plants. The most common chemical constituents are calcium, phosphates, nitrates, sodium, potassium and chloride, which are found in nutrient runoff, general stormwater runoff and runoff from snowy climates where road de-icing salts are applied. The Alpine City Storm Water Management Program will address the total phosphorus (TP) and total dissolved solids (TDS) concentrations through the measurable goals listed in the MCM List. The Program will reduce total phosphorus (TP) and total dissolved solids (TDS) concentrations by:

- ♦ Implementing and enforcing the IDDE program to systematically find and eliminate sources of non-storm water discharges from the City and to implement defined procedures to prevent illicit connections.
- ♦ Developing, implementing and enforcing a program to reduce pollutants in any storm water runoff to the City storm drain system from construction.
- ♦ Developing, implementing and enforcing a program to address post-construction storm water runoff to the City storm drain system from new development and redevelopment construction sites.

- ♦ Developing and implementing an operations and maintenance (O & M) program for City-owned or operated facilities.
- ♦ Developing and implementing a Public Education program regarding the reduction of nitrogen and phosphorus into tributaries of Utah Lake

## Concerns and Priorities

### Concerns

The water quality within Alpine is relatively good. As mentioned above, the drainage system discharges to Utah Lake which is on the Section 303(d) list of the Clean Water Act. The intent of this Storm Water Management Program (SWMP) is to improve the water quality and possibly decrease the quantity of water discharged to Utah Lake. Like most communities along the Wasatch Front, some of the biggest concerns involve sediment loads (coming primarily from disturbed sites), fertilizers and pesticides coming from lawns and farmlands, and oils and grease coming from the roadways, salts and deicing materials coming from the roadways, improper disposal of household chemicals and waste materials and illicit discharge from industrial sites. Alpine's SWMP has been geared toward small city applications, targeting the pollutants mentioned.

### Priorities

As discussion was held trying to understand the nature of the problems and how to accomplish the goals of the SWMP, it was determined the following areas shall be emphasized.

- ♦ This program has been developed with an increased emphasis on *annual* education and public involvement with all four groups as listed in the permit.
- ♦ The training schedule will be annual for all employees so all key personnel will understand their storm water responsibilities.
- ♦ All outfall locations will be monitored annually.
- ♦ Alpine City has very few industrial areas. These sites will be monitored annually during the outfall inspections.
- ♦ Good Housekeeping will be stressed through training, construction inspections, and high priority inspections.

## Minimum control measures 1-6

Part 4.2 states that a Renewal Permittee must continue to implement its Storm Water Management Program (SWMP) as described in the application and submittals provided in accordance with the previous MS4 general Permit, while updating its SWMP document pursuant to this Permit. This Permit does not extend the compliance deadlines set forth in the previous MS4 general Permit unless specifically noted.

The previous SWMP document was reviewed during the preparation of this SWMP. Some sections from the old permit now have more detailed requirements and there are a few new requirements altogether. Changes have been made in this SWMP to be in compliance with the new MS4 permit. These changes have been noted in the JUSTIFICATION FOR CHANGES form which is located in Appendix D –Documentation.

The program elements that will be implemented in the six minimum control measures include a description of how the Alpine City intends to meet the requirements as described in Part 4.0 by referencing the target pollutants and

audience, the Permit requirements, a description of the relevant measurable goals, the year by which the Permittee will achieve required actions, including interim milestones and the measure of success (Effectiveness). The six minimum control measures are described in the following MCM List.

## Budget

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

The City's Storm Drain budget will be included yearly for each fiscal year. The budget includes the costs needed to cover the requirements of this permit. The total planned probable cost for the storm drain program is \$ 115,320 for fiscal year 2022-2023. The annual analysis of the capital and operation and maintenance expenditures required by the Permit will be summited with the Annual Report yearly.

## BUDGETS

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

**Comment (4.1.2.2.):** *Please clarify how detailed this analysis should be. Does the State expect this analysis to be broken down into each of the six minimum control measures? Should the permittees track hours of individual employees engaged in storm water activities?*

**Response:** Each permittee will fund its SWMP differently; therefore, permittees must submit an accounting of stormwater-related budgets, cost, and staffing resources. The fiscal analysis should document and explain changes to budgets from year to year and describe how each funding can and cannot be used for storm water program activities. The analysis must account for resources utilized for compliance with this permit which includes all six minimum control measures and staff time.

**Comment (4.1.2.2.):** *This permit puts a bigger financial burden on municipalities struggling to meet the requirements of the old permit. How do you propose we obtain these resources when building and tax revenues are down?*

**Response:** Many MS4's have funded their storm water programs with storm water user fees based on impervious area. Many MS4's are cross-training other municipal staff to aid in complying with storm water permit requirements.

### Shared Responsibilities

Part 4.3 states that Implementation of one or more of the six minimum measures may be shared with another entity or the entity may fully take over the measure.

Alpine City shares some of the Public Education and Outreach on Storm Water Impacts with Utah County. The interlocal agreement describing how the responsibilities are shared is included in Appendix F.

# BMP Master List

<b><u>BMP's</u></b>	<b><u>Abbreviation</u></b>
<b><i>1- Public Education and Outreach</i></b>	
Building and Grounds Maintenance	BGM
Classroom Education on Storm Water	CESW
Educational Materials	EM
Housekeeping Practice	HP
Materials Use	MU
Public Education / Participation	PEP
Storm Drain System Signs	SDSS
Used Oil Recycling	UOR
Using Media	UM
Watershed Organization	WO
<b><i>2- Public Participation/Involvement</i></b>	
Community Cleanup	CC
Community Hotline	CH
Watershed Organization	WO
Service Group Participation	SGM
Storm Channel / Creek Maintenance	SCCM
Stream Cleanup and Monitoring	SCM
<b><i>3- Illicit Discharge Detection and Elimination</i></b>	
Identify Illicit Connections	IIC
Aboveground Tank Leak & Spill Control	ATL
Illegal Dumping Controls	IDC
Illegal Solid Dumping Control	ISDC
Leaking Sanitary Sewer Control	LSSC
Map Storm Water Drains	MSWD
Non-Storm Water Discharge to Drains	NSWD
Ordinance Development	OD
Used Oil Recycling	UOR
<b><i>4- Construction Site Runoff Control</i></b>	
Benching	BE
Brush or Rock Filter	BRF
Building, Repair, Remodeling, & Construction	BRRC
Chemical Mulching	CM
Compaction	CP
Concrete Waste Management	CWM
Construction Road Stabilization	CR
Construction Sequencing	CS
Contaminated or Erodible Surface Areas	CESA
Contractor Certification and Inspector Training	CCIT

# BMP Master List

<b>BMP's</b>	<b>Abbreviation</b>
Diversion Dike	DD
Dust Controls	DC
Earth Berm Barrier	EB
Equipment & Vehicle Wash Down Area	EVWA
Erosion Control Blankets	ECB
Erosion Control Plan	ECP
Establish/Compile Design Standards	ECDS
Extended Detention Basins	EDB
Filter Strips	FS
Flotation Silt Curtain	FSC
Geotextiles and Mats	GM
Grassed Swales	GS
Infrastructure Planning	IPL
Inlet Protection	IP
Landscape & Irrigation Plan	LIP
Materials Storage	MS
Mulching	ML
Ordinance Development	OD
Outlet Protection	OP
Portable Toilets	PT
Preservation of Existing Vegetation	PEV
Riprap	RR
Rock Check Dams	CD
Sand Bag Barrier	SBB
Sediment Basin	SB
Sediment Trap	ST
Silt Fence	SF
Slope Drain	SD
Spill Clean-Up	SCU
Stabalized Construction Enterance	SCE
Straw Bale Barrier	STB
Surface Roughening	SR
Temporary and Permanent Seeding	TPS
Temporary Drains and Swales	TDS
Temporary Stream Crossing	TSC
Vehicle and Equipment Cleaning	VEC
Vehicl and Equipment Fueling	VEF
Waste Disposal	WD
<b>5- Post-Construction Runoff Control</b>	
Alternative Turnarounds	AT
Bioengineering	BIO

# BMP Master List

<b><u>BMP's</u></b>	<b><u>Abbreviation</u></b>
Biofilters	BF
Conservation Easements	CE
Constructed Wetlands	CW
Double Trench Sand Filter	DTSF
Extended Detention Basins	EDB
Filter Strips	FS
Floatable Skimmers	FS
Grassed Swales	GS
Hydromulching	HM
Infiltration	IN
Infrastructure Planning	IPL
In-line Storage	ILS
Land Use Planning / Management	LIP
Level Spreaders	LS
Map Storm Water Drains	MSWS
Media Filtration	MF
Minimizing DCIA's	DCIA
Oil/Water Separators & Water Q Inlets	OWS
Open Space Design	OSD
Ordinance Development	OD
Outlet Protection	OP
Peat-Sand Filter System	PSFS
Riprap	RR
Rock Check Dams	CD
Seeding and Planting	SP
Surface Sand Filter System	SSFS
Trench Sand Filter System	TSFS
Urban Forestry	UF
Wet Ponds	WP
Zoning	ZO
<b><i>6- Pollution Prevention/Good Housekeeping</i></b>	
Above Tank Leak & Spill Control	ATL
Alternative Discharge of Chlorinated Water	ADCW
Alternative Products	AP
Animal Carcass Removal	ACR
Area Control Procedures	ACP
BMP Inspection and Maintenance	BMPIM
Building and Grounds Maintenance	BGM
Catch Basin Cleaning	CBC
Concrete Waste Management	CWM
Containment Dikes	CD

## BMP Master List

<b><u>BMP's</u></b>	<b><u>Abbreviation</u></b>
Covering	CO
Curbing	CU
De-Icing Chemical Use Storage	DCUS
Detention/Infiltration Device Maintenance	DIDM
Drip Plans	DP
Employee Training	ET
Establish/Compile Design Standards	ECDS
Gelling Agents	GA
Hazardous Waste Management	HWM
Housekeeping Practices	HP
Illegal Dumping Control	IDC
Infrastructure Planning	IPL
Long Term Operation and Maintenance	LTOM
Map Storm Water Drains	MSWD
Manure Composting Program	MCP
Outdoor Container Storage of liquids	OCSL
Outdoor Loading/Unloading of Materials	OLUM
Outdoor Process Equipment Operations	OPE
Outdoor Storage of Raw Materials	OSRM
Pest Control	PC
Portable Toilets	PT
Roadway/Bridge Maintenance	RBM
Sediment Basin	SB
Septic System Controls	SSC
Signs & Labels	SL
Sorbents	SO
Spill Clean-Up	SCU
Storm Drain Flushing	SDF
Street Cleaning	SC
Sumps	S
Used Oil Recycling	UOR
Vehicle and Equipment Cleaning	VEC
Vehicle and Equipment Maintenance & Repair	VEMR
Vehicle Use Reduction	VUR
Waste Handling and Disposal	WHD
Watershed Organization	WO