

# Storm Water Pollution Prevention Plan for



**February 2007**

sub-date

8-28-2007: Revised for MPCA Comments



# Storm Water Pollution Prevention Plan

For

## Big Lake, Minnesota

The City of Big Lake fully intends to incorporate the processes described herein as a means of meeting the requirements of the NPDES Phase II Municipally Separate Storm Sewer permit. Should the City find itself unable to meet the goals set forth in this Storm Water Pollution Prevention Plan, the City intends to report the discrepancy and list the reasons why in its annual report to the Minnesota Pollution Control Agency.

By: \_\_\_\_\_  
Mr. Scott Johnson, City Administrator

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By: \_\_\_\_\_  
Bradley DeWolf, Engineer, P. E.  
License No. 24000

Date: February 2007  
sub-date

8-28-2007: Revised for MPCA Comments

**BOLTON & MENK, INC.**  
**CONSULTING ENGINEERS & SURVEYORS**  
Big Lake ♦ Fairmont ♦ Sleepy Eye ♦ Burnsville ♦ Willmar ♦ Chaska ♦ Ramsey  
Ames, IA

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## **1. Executive Summary**

Under state and federal rules, the City of Big Lake has been classified as a designated Municipal Separate Storm Sewer System (MS4) community. As a MS4 the City must develop, implement and enforce a Stormwater Pollution Protection Plan (SWPPP) that is designed to minimize the discharge of pollutants from its storm sewer system in order to protect the water quality of the receiving waters in accordance with the Federal Clean Water Act (CWA) and its recent amendments. Designated MS4 communities must obtain permit coverage not later than February 15, 2007.

This Storm Water Pollution Prevention Plan is a local plan that has been prepared with the purpose of meeting the requirements of the federal National Pollutant Discharge Elimination System (NPDES) Phase II permit. The permit requirements are outlined in the Minnesota Pollution Control Agency (MPCA) general permit and the most recent modifications to the Federal Clean Waters Act (CWA).

The purpose of this SWPPP is to maintain water quality standards where there is compliance and to help bring waters that do not meet water quality standards into containment or compliance by minimizing the discharge of pollutants to the Maximum Extent Practicable (MEP). To meet this goal, the City's storm sewer system must be managed, operated and maintained in such a way that minimizes the discharge of pollutants.

City staff and the City Engineer, has developed this SWPPP from the minimum permit guidelines and Best Management Practices issued by the MPCA and other stormwater management resources with due consideration of local conditions, needs and resources.

As it is for other designated MS4 communities, conformance with the SWPPP and the permit for the purpose of improving water quality will require a significant resource commitment on the part of the City of Big Lake, its staff and the community on the whole. This commitment, as specifically described in the SWPPP, is not optional or avoidable and is a legally binding obligation of the City through terms of the NPDES Phase II permit.

### **A. SWPPP Technique**

Best Management Practices (BMPs); including education, maintenance, pollution control techniques, system designs and engineering methods as well as local provisions deemed appropriate. Best Management Practices are to be used to meet the minimum requirements of the NPDES Phase II permit. Several of the BMP's incorporated into this SWPPP are mandatory PCA requirements that must be included for permit approval.

Best Management Practices fall into two categories:

- Structural, including detention ponds, infiltration designs, etc. and
- Non-structural, including operational practices like street sweeping, educational programs, etc.

When implementing the required BMPs, the City must consider the sources of the targeted pollutants, the potential pollution creating activities in the various watersheds, and the sensitivity of the receiving waters.

**B. SWPPP Legal Significance**

This SWPPP shall become an enforceable part of the NPDES Phase II permit upon submittal to the Minnesota Pollution Control Agency (MPCA). Modifications as required by the agency and/or approved requests by the City shall also become enforceable provisions.

The City must submit an annual report on the implementation of this SWPPP on or before June 30 of each year beginning in 2007.

**2. Methods**

This document describes the City's 5-year plan to meet each of the six Minimum Control Measures (MCM) described by the permit. The tasks described are not one-time efforts; they will continue throughout the permit period and beyond to maintain water quality. They are:

- No. 1 - Public Education And Outreach On Stormwater Impacts
 

Distribute educational materials and perform outreach activities to inform citizens about the many ways stormwater becomes polluted and the impacts polluted stormwater runoff discharges can have on water quality.
- No. 2 - Public Participation And Involvement
 

Provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public meetings.
- No. 3 - Illicit Discharge Elimination
 

Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system including developing a system map and informing the community about the hazards associated with illegal discharges and improper disposal of waste.
- No. 4 - Construction Site Stormwater Runoff Control
 

Develop, implement and enforce an erosion and sediment control program including ordinances for construction activities that disturb 1 or more acres of land.

- No. 5 - Post-Construction Stormwater Management in New Development and Redevelopment

Develop, implement and enforce a program to address discharges of post-construction storm water run-off from new development and redevelopment areas.

- No. 6 - Pollution Control And Good Housekeeping For Municipal Operations

Develop and implement a program with the goal of preventing or reducing pollutant runoff from municipal operations.

It is anticipated that this plan will be updated on an annual basis. The proposed updates will be made public prior to the annual update being presented to the City Council in February of each year. Through the SWPPP, City staff, City Council and the public will be actively engaged in on-going processes, to address water quality needs in the community and receiving waters.

Plan updates will be made on the following basis:

1. Modifications may be required by the Commissioner of the MPCA based on the following factors:
  - a. Discharges from the city are impacting the quality of the receiving water.
  - b. More stringent requirements are necessary to comply with State or Federal regulations, such as pending issuance of additional TMDL requirements for downstream receiving waters.
  - c. Additional conditions are deemed necessary to comply with the goals and requirements of the Clean Water Act.
2. Reasonable modifications may be made by the general public in the following formats:
  - a. Oral requests given at the annual update to the City Council.
  - b. Written requests submitted to City Staff will be reviewed and presented to the City Council.
3. Modifications may be made by the City without prior approval of the Commissioner of the MPCA, provided it is in accordance with the following:
  - a. New BMPs are added and none are subtracted from the SWPPP.
  - b. BMPs that have failed, or have burdensome maintenance, are replaced with alternate BMPs that address the same or similar concerns.
  - c. The Commissioner of the MPCA is notified of the modification in the annual report.
4. The Commissioner ordered modifications will be made in writing. The City the

opportunity to propose alternative program modifications, and comply with other requirements of law to meet objectives of the requested modification.

#### Stormwater Pollution Prevention Program Monitoring, Record Keeping, and Reporting

1. The SWPPP should be evaluated annually for compliance and progress towards achieving the identified measurable goals.
2. Records required under the NPDES permit must be retained for a minimum of 3 years beyond the term of the permit and submitted to the Commissioner of the MPCA upon request. The actual records will be entered and maintained in a computerized database that can coordinate with the MPCA. The SWPPP and required records will be available for public review.
3. An annual report must be submitted to the MPCA by June 30<sup>th</sup> each year of the term of the permit and shall include the following:
  - a. Evaluation of compliance with identified measurable goals.
  - b. Results of information collected and analyzed.
  - c. Upcoming years' planned stormwater activities.
  - d. Modifications to BMPs or measurable goals.
  - e. Notice that another entity will satisfy a portion of the permit obligations.

\*\*\*\* End of Executive Summary \*\*\*\*

# *Storm Water Pollution Prevention Plan*

## **1. Introduction**

### **A. Storm Water Pollution Prevention Plan (SWPPP) Purpose**

The City must develop, implement and enforce a plan that is designed to minimize the discharge of pollutants from its storm sewer system in order to protect the water quality of the receiving waters in accordance with the Federal Clean Water Act (CWA) and its recent amendments.

This Storm Water Pollution Prevention Plan is a local plan that has been prepared with the purpose of meeting the requirements of the federal NPDES Phase II permit as outlined in the Minnesota Pollution Control Agency (MPCA) general permit and the most recent modifications to the Federal Clean Waters Act (CWA).

The purpose of this SWPPP is to maintain water quality standards where there is compliance and to help bring waters that do not meet water quality standards into containment or compliance by minimizing the discharge of pollutants to the Maximum Extent Practicable (MEP). To meet this goal, the City's storm sewer system must be managed, operated and maintained in such a way that minimizes the discharge of pollutants.

### **B. SWPPP Technique**

Best Management Practices (BMPs); including education, maintenance, pollution control techniques, system designs and engineering methods are to be used to meet the minimum requirements of the NPDES Phase II permit.

Best Management Practices fall into two categories:

- Structural, including detention ponds, infiltration designs, etc. and
- Non-structural, including operational practices like street sweeping, educational programs, etc.

When implementing the required BMPs, the City should consider the sources of the targeted pollutants, the potential pollution creating activities in the various watersheds, and the sensitivity of the receiving waters.

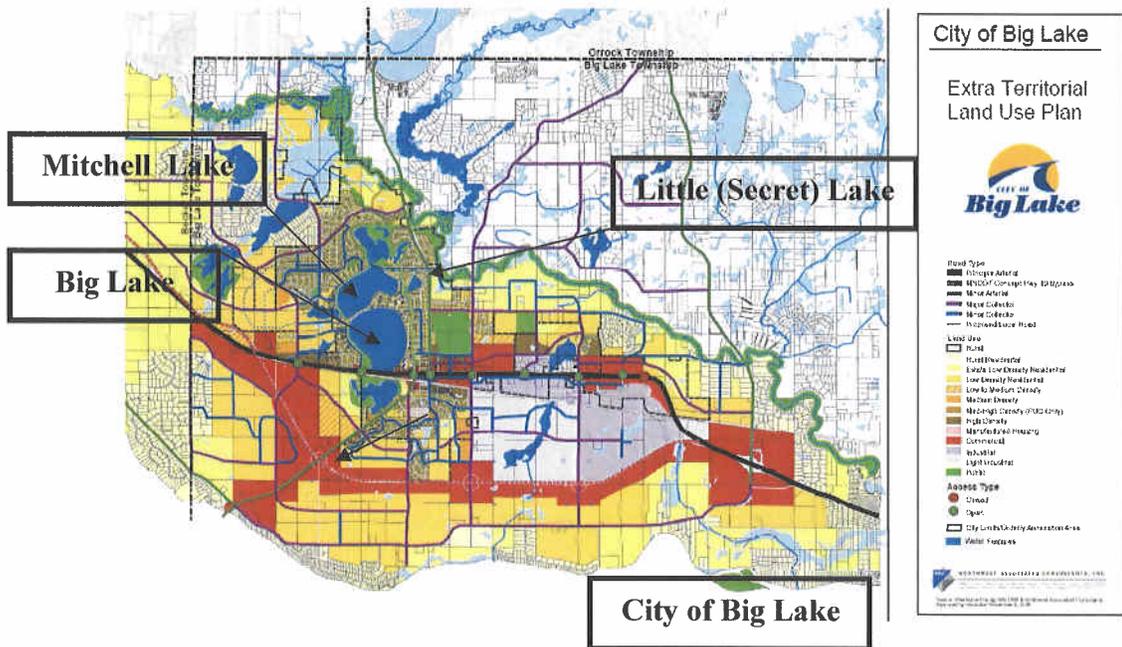
C. SWPPP Legal Significance

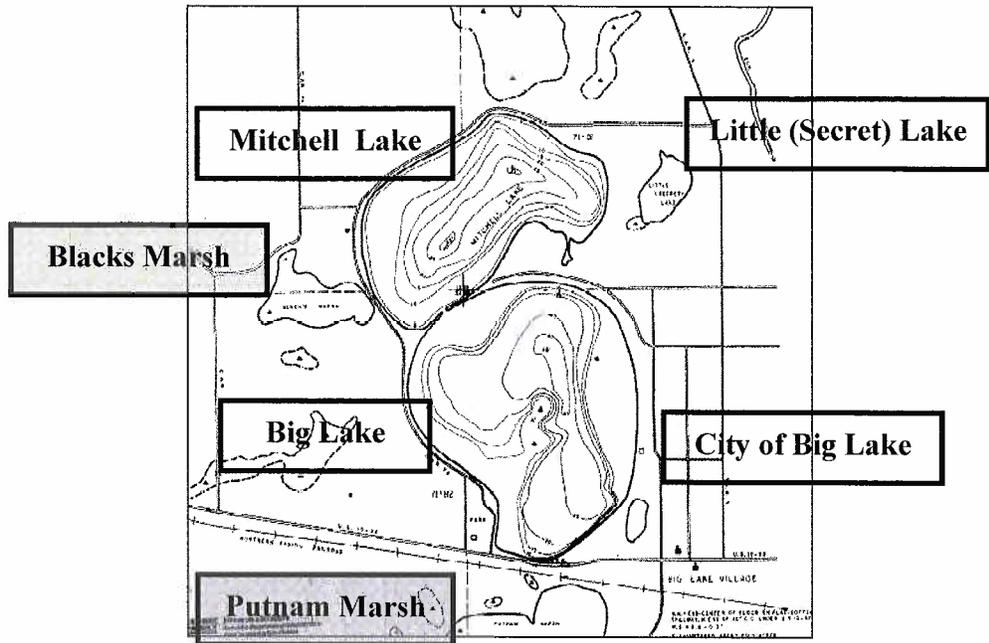
This SWPPP shall become an enforceable part of the NPDES Phase II permit upon submittal to the Minnesota Pollution Control Agency (MPCA). Modifications as required by the agency and/or approved requests by the City shall also become enforceable provisions.

The City must submit an annual report on the implementation of this SWPPP on or before June 30 of each year beginning in 2007.

2. Location

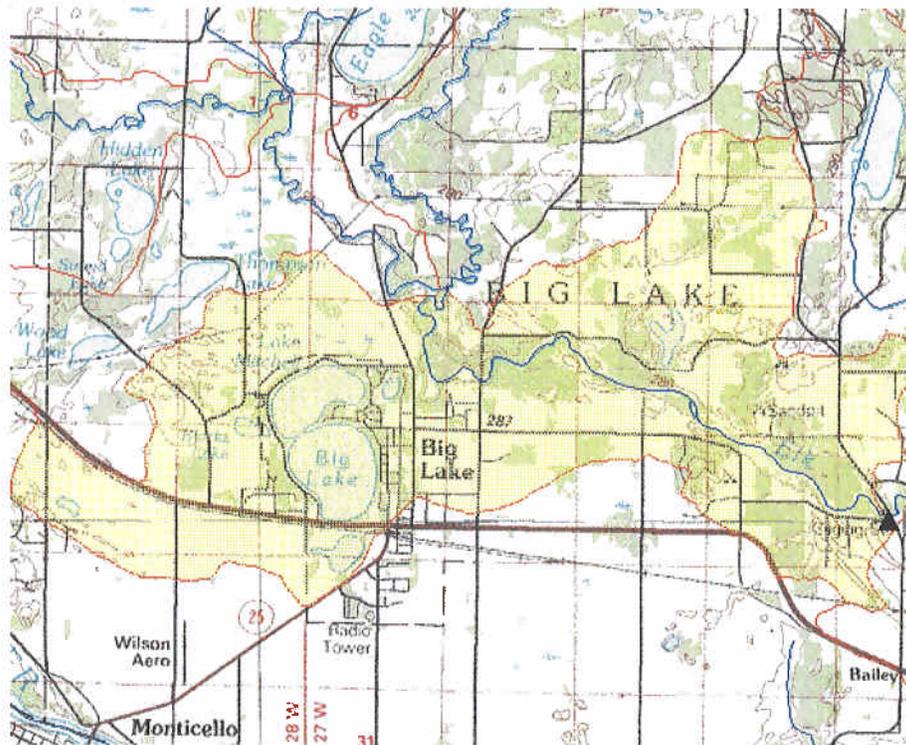
The City of Big Lake surrounds several water bodies including 5 DNR classified lakes and at least 2 named marshes as shown below.





Stormwater discharge from the city directly and indirectly reaches the Elk River, which is tributary to the Mississippi River.

**Minor Watershed 1704600**



**SELECTED MINOR (Highlighted in Yellow)**

<u>Minor7</u>	<u>Drainage Area (Sq. mi)</u>
1704600	12.43

**Cumulative Drainage Area Totals to Outlet of Selected Minor**

<u>Drainage Area of Selected Minor (Sq. Mi.)</u>	<u>Drainage Area of Upstream Minor (Sq. Mi.)</u>	<u>Drainage Area of Upstream Major (Sq. Mi.)</u>	<u>Total Drainage Area to the Outlet of the Selected (Sq. Mi.)</u>
12.43	546.48	0	558.91

**3. Methods**

This document describes the City’s 5-year plan to meet each of the six Minimum Control Measures (MCM) described by the permit. The tasks described are not one-time efforts. The tasks will continue throughout the permit period and beyond to maintain water quality. They are:

- **No. 1 - Public Education And Outreach On Storm Water Impacts**

Distribute educational materials and respond to requests to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.

The public education program will individually address each of the six minimum measures.

The City will hold at least one public meeting per year presenting the SWPPP annual report.

This SWPPP will describe how the education program may be coordinated with and makes use of other entities in the area including community groups, nonprofit organizations, lake associations, watershed districts, various levels of other governmental bodies, etc.

In so doing, the City will identify:

- i. The audiences involved.
- ii. The educational goals for each audience in terms of increased awareness, understanding, acquired skills and/or changes in behavior.
- iii. Activities used to reach the educational goals for each audience.
- iv. Activity implementation plans, including responsible

department in charge, entities responsible for given activities, and schedules.

- v. Available performance measures that can be used to determine success in reaching educational goals.

Additionally, this SWPPP describes how the education program may be coordinated with other storm water education programs being conducted in the area.

The City has identified the following audiences to provide educational material:

<b>Audience</b>	<b>Goals</b> To increase public awareness on the following:	<b>Activity</b>	<b>Implementation</b>	<b>Performance Measures</b>
General Public	Fertilizer and lawn care techniques	Flier information / web site	Spring, summer mailers	Flier to include comment opportunities on the City's Web site.
	Removal of snow debris	Flier information / web site	Winter, spring mailers	
Waterfront Properties	Shore land protection techniques	Flier information / web site	Spring, summer mailers	Flier to include comment opportunities on the City Web site.
Building Contractors	Erosion control and waste management	Flier information / web site	Attach to Building Permits	Building inspector log of compliance.
General Site & Utility Contractors	Erosion control and waste management	Flier information / web site	Incorporate into development agreement	Establish inspection procedures by appropriate departments
Developers,	Erosion control and waste management	Flier information / web site	Incorporate into development agreement	Engineering inspector log of compliance.
Businesses and individuals found to have illicit discharges	Assist owners in mitigating their discharge.	Flier information / web site	Incorporate into enforcement actions	Building inspector log of compliance.

The City plans to document and maintain a running log of all email, web site responses and building inspector notes to measure the performance of the educational techniques.

- **No. 2 - Public Participation And Involvement**

Provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public meetings.

The annual City Council Update shall afford interested persons a reasonable opportunity to make written or oral statements concerning the SWPPP.

The City will consider all relevant written materials submitted by interested persons concerning the SWPPP.

The permit requires that the City hold at least one public meeting per year addressing the annual report on this Storm Water Pollution Prevention Program. This meeting will be held in conjunction with the February City Council Update. The meeting must be held prior to submitting the annual report to the MPCA.

- **No. 3 - Illicit Discharge Elimination**

Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system. The City has and will maintain a system map and will inform the community about the hazards associated with illegal discharges and improper disposal of waste.

The City will develop, implement and enforce a program to detect and eliminate illicit discharges.

The City will select and implement a program of appropriate BMPs and measurable goals relative to the elimination of any discovered illicit discharges.

The City has and will maintain a storm sewer system map showing:

- i. Ponds, streams, lakes and wetlands within the City.
- ii. Structural pollution control devices (i.e., grit chambers, separators, etc.).
- iii. All pipes and conveyances.
- iv. Outfalls and/or discharges.

The City has an existing ordinance prohibiting non-storm water discharges into the City storm sewer system.

The City has and will monitor its Right of Way Ordinance that defines private utilities responsibilities to appropriately repair areas disturbed by their activities and that provides for appropriate enforcement procedures and actions.

The City will inform and educate its employees, local businesses, and the general public of the hazards associated with illegal discharges and improper disposal of wastes.

The City will identify potential pollution sources.

The City will develop a program to detect and address non-storm water discharges, including illegal dumping into the storm sewer system.

The City will review the following list of potential illicit discharges and determine which ones are significant discharges and address BMPs to mitigate the pollutant source:

- Diverted stream flows, rising ground waters, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, swimming pool discharges, discharges or flows from fire fighting activities.

#### **No. 4 - Construction Site Stormwater Runoff Control**

The City will adopt an erosion and sediment control ordinance that requires the implementation of erosion and sediment control measures. The ordinance shall include sanctions to ensure compliance.

The City will institute a procedure for site plan review that incorporates procedures for evaluating water quality impacts.

The City will also institute site inspection and enforcement measures, including sanctions when necessary.

The City will require permittees to control waste, such as discarded building materials, concrete truck washout, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

The City will establish procedures for receipt and consideration of reports of non-compliance or other information on construction related issues submitted by the public.

- **No. 5 - Post-Construction Stormwater Management in New Development and Redevelopment**

The City will develop, implement and enforce an ordinance to address storm water runoff from new development and redevelopment projects that disturb more than one acre or the size. This includes projects that are less than one acre in size but are part

of a larger common plan of development (i.e., individual house building permits in a new subdivision will also be required to ensure that controls are in place that would prevent or minimize water quality impacts).

The program will include a set of appropriate BMPs and measurable goals, including the following minimum items:

- i. Developing and implementing strategies that include structural and non-structural BMPs.
- ii. Ensure adequate long-term operation and maintenance of the BMPs installed.

The City has an ordinance that meets the permit requirements.

The City will also provide educational material to developers describing the impact of new developments on the water quality of its runoff. This information will identify a multitude of BMPs the City recommends for both structural and non-structural practices.

- **No. 6 - Pollution Control And Good Housekeeping For Municipal Operations**

Develop and implement a program with the goal of preventing or reducing pollutant runoff from municipal operations.

The City has and will continue to develop an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from its municipal operations. The program will include employee training to prevent and reduce storm water pollution from activities such as park maintenance, vehicle maintenance, building maintenance, and storm water system maintenance.

The City will also:

- i. Operate and maintain its storm sewer system in a manner that minimizes the discharge of pollutants.
- ii. Annually inspect and maintain its pollution control devices and summarize the results in the annual report.
- iii. Annually inspect all of its storm water panels and at least 20 percent of the system outfalls; then summarize the results in the annual report.
- iv. Maintain records of all annual reports.

The City has and will monitor its Right of Way Ordinance that defines private utilities' responsibilities to appropriately repair areas

disturbed by their activities and that provide for appropriate enforcement procedures and actions.

For each of the six minimum control measures, the City will list the applicable BMPs chosen, designate the department in charge of the responsibility, and implement a schedule of measurable goals determining the success or benefits of the BMPs.

The City will establish record keeping procedures that include:

- a. Inspections shall be summarized in the annual report and shall include inspection dates and the completion of major additional protection measures.
- b. Records shall be kept of inspection results, date, weather conditions, sediment storage remaining, and any maintenance recommended and performed.
- c. Repair, replace or conduct maintenance measures to ensure proper operation of the inspected items. These measures should be completed as they are discovered.
- d. If maintenance or sediment removal is required as a result of each of the first two annual inspections, the inspection frequency shall be increased to at least two times per year to ensure that the pollution removal properties of the inspected structure is maximized. If no maintenance is required after two years of inspections, the inspection frequency may be reduced to once every two years.

The City will provide materials and training courses designed to educate and train its maintenance personnel in the BMPs that will limit pollutants from entering the storm sewer system relative to mowing operations, park management, roadway maintenance and street sweeping. This education may include:

- a. Obtaining available tapes and brochures that are available from the MPCA, EPA, other jurisdictions regarding City maintenance practices. The information shall be reviewed by all City maintenance personnel.
- b. Internal training of City maintenance personnel in the inspection, maintenance and proper documentation of the City's outfalls and pollution control devices.

The City will review its mapped system storm sewer system and:

- a. Coordinate a schedule to systematically review at least 20 percent of its outfalls on an annual basis.
- b. Coordinate and schedule the inspection of all of grit

removal systems annually.

- c. Keep records of all inspections and maintenance efforts.
- d. Increase or decrease the inspections based on the frequency of needed maintenance.
- e. Submit inspection and maintenance records with the annual report.

- For each Minimum Control Measure (MCM), a list of appropriate Best Management Practices (BMP's) have been reviewed and chosen by City staff because they have been deemed the most appropriate and cost effective method for meeting the requirements outlined in the general permit. The list is attached in the Appendix.

#### **4. Municipal Departments With Stormwater Responsibilities (2.1)**

During the first year, it will be necessary for the City to identify each internal department with any responsibility related to stormwater. The following are departments that will be responsible for each task:

- A. Administration & Finance**
  - Responsibilities include the collection of fees and disbursement of funds
  - General facility maintenance coordination
  - Human Resources – supply adequately trained individuals to the various departments
- B. Engineering and Building Inspections**
  - Permits – review and inspection responsibilities for both infrastructure improvements and building permits
  - Community development - sets and enforces development standards for the community. Administers development agreements.
  - Provide inspection and enforcement services over private utility operations within the city.
- C. Public Works**
  - Street maintenance
  - Storm Sewer maintenance
  - Park maintenance

#### **5. Outside Agencies With Stormwater Responsibilities (2.2)**

The City will attempt to contact and involve several outside agencies in the

implementation of the SWPPP. Organizations to be contacted may include the following:

- A. The Elk River Watershed Association is a Joint Powers Board of Sherburne and Benton Counties and Sherburne and Benton Soil and Water Conservation Districts.
- B. Sherburne County Soil and Water Conservation District.
- C. Sherburne County for coordinating maintenance and a implementation of the Sherburne County Water Plan
- D. The Big Lake School District for educational opportunities and maintenance of school stormwater facilities.
- E. Big Lake townships
- F. Minnesota Pollution Control Agency

## 6. **Planning Tools & Resources (2.3)**

The City has available a host of tools and resources with which to organize and implement this plan. During the first year individual resources will have to be evaluated for their contribution and potential for meeting the ultimate goal in a time effective manor. In subsequent years other resources will be added to the list as they become available. Some tools include:

- Big Lake Well Head Protection Plan
- Sherburne County Comprehensive Local Water Plan 1998-2007
- The City maintains a computerized mapping system of the underground stormwater system.

## 7. **Mapping per Appendix C of the General Permit (2.4)**

The first major task will be the mapping of the stormwater system including all discharges, conveyance structures, ponds, streams, lakes, rivers, wetlands, storm sewer outfalls greater than 24 inches in diameter, and structural pollution control devices that comprise the overall conveyance system for the City. The City is fortunate that it already has a computerized mapping system that will meet all the requirements of the new permitting.

This requirement also includes identifying certain waters of the state that demand special attention either to install protections to prevent degradation of high quality waters or to initiate higher treatment to help remedy already impaired waters.

These include:

Mapping of all impervious areas is required when any of the following conditions are met:

- *Discharges to Waters With Prohibited Discharges*



### Scientific and Natural Area

No Features found within 2000 feet of site boundary.

### Impaired Stream

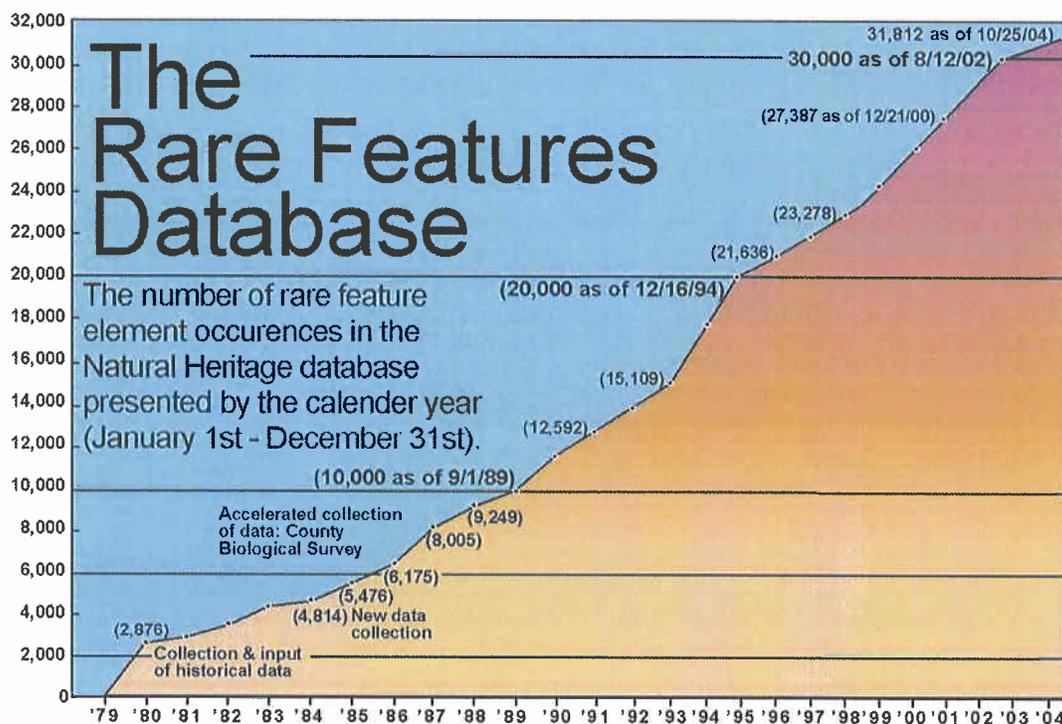
Rec	Assessment Unit ID	Stream Name	Pollutant(s) Need TMDL Plan	Pollutants with Approved TMDL Plan	BMP Link
1	07010203-548	Elk River	Hg		<a href="#">tmdl</a>
2	07010203-506	Elk River	B-I, Hg, T		<a href="#">tmdl</a>

### Impaired Lake

No Features found within 2000 feet of site boundary.

#### B. Threatened or Endangered Species or Their Habitat

The avoidance of impacts to threatened or endangered species can only be achieved through education of what species are present and the habitat necessary to sustain them. Changes in the number of recognized species is illustrated below.



These changes only reflect numbers of species, but knowledge on the range and habitat are also being updated constantly. Inquiry to the DNR Natural Heritage Database will provide the City with the latest information necessary to appropriately mitigate any impacts. The DNR request site for this information is [http://files.dnr.state.mn.us/ecological\\_services/nhrp/nhis\\_data\\_request.pdf](http://files.dnr.state.mn.us/ecological_services/nhrp/nhis_data_request.pdf).

The City will secure a 2007 list of species that includes the section, township and range. Some investigation may be necessary on the desirable habitat of some

species. Areas that have necessary habitat should be mapped to assure avoidance. Once in every permit, the City should update the list and mapping.

**C. Historic Places Listings (2.4)**

The early history of communities was often centered near streams and rivers and therefore, many historic structures and places are in the vicinity of these stormwater routes.

The federal government already has the National Historic Preservation Act that protects historic places; therefore the NPDES requirements discussed here cannot infringe on those requirements. The impacts of each individual project must be compared to the National Register of Historic Places and any conflicts mitigated. If it is absolutely necessary to impact a historic place or district, the State of Minnesota mandates the preparation of an Environmental Assessment Worksheet (EAW) describing the impacts and the mitigation efforts before any permitting.

A full 2006 listing of the National Register of Historic Places for Big Lake is in the Appendix. Mapping will facilitate avoidance of Historic Places. The current listing is available online at

<http://www.nationalregisterofhistoricplaces.com/mn/Blue+Earth/state.html>.

**D. Source Water Protection Areas (2.4)**

For purposes of security, the precise locations of these areas are not illustrated here but they must be considered in selecting points of discharge and sites for BMP installation.

**E. GIS Coverage**

In conclusion, the entire city of Big Lake is within the coverage area designated by Appendix C of the General Permit and therefore will require the detailed mapping for impervious areas, etc.

**8. TMDL's (Total Maximum Daily Load) (2.5)**

Specific water resources are especially sensitive to certain pollutants and the responsibility to protect, preserve and maintain these resources should be borne by all of the upstream watersheds. This is accomplished by researching and determining the Total Maximum Daily Load (TMDL) that the water resource is capable of handling. TMDL's are associated with specific pollutants and/or water quality components.

At this time no approved TMDL's apply to Big Lake, however, in the future, the City will be charged with responsibilities to reduce its contribution to downstream pollution as TMDL's are approved. TMDL research and approvals in process that could affect the City include:

1. Elk River, Upper Mississippi River Basin - Impaired Invertebrate Biota and Turbidity – The target date for this implementation of this TMDL is 2016 – 2023.

2. Lake Pepin Area - Turbidity & Excessive Nutrients - The target date for implementation of this TMDL is 2009.

### **GENERAL STRATEGY FOR TMDL COMPLIANCE**

#### PROCESS;

In general, there are 4 strategies to approach meeting the requirements of each TMDL.

- 1 Retrofitting the existing stormwater system with appropriate BMP's
- 2 Requiring the installation of appropriate structural BMP's in areas where the land use is changing
- 3 Implementing non-structural BMP's designed for source control like recycling yard waste
- 4 Implementing non-structural BMP's designed to capture and treat existing pollutant loads

#### TRACK EFFORTS AND OUTCOMES

Tracking efforts and outcomes is required but each pollutant may require a somewhat different tracking system to appropriately monitor and document the various actions taken and any changes in the quality of the receiving water body. This may be accomplished by:

Monitoring The Receiving Body Of Water - This method might be useful if a single lake was categorized as impaired but with the drainage area served by Jewett's Creek, it is inappropriate.

Direct Monitoring of Individual Effluents - This is a more practical approach to meet water quality standards for Big Lake.

Computer Modeling the System - Software is available that calculates the effectiveness of specific BMP's on specific pollutants. This requires detailed information about land use, topography, zoning and the stormwater drainage system.

Simple BMP Tracking System - The additions and changes in BMP's are evaluated with stormwater standards for their effectiveness. When the required reduction meets the requirement, actual field monitoring will be performed to verify the prediction.

The specific monitoring protocol to be followed will depend on the TMDL requirements, the water body and the particular pollutant involved; but the Simple Tracking System will most likely be employed.

The City will review the MPCA guidance to be prepared to actively participate in the TMDL Studies and load reduction processes. The City will participate in stakeholder meetings associated with the MPCA's TMDL study and allocation process. Upon determination of the TMDL allocation and official publication/notification of the

approval of a TMDL, the City will assess, design and implement appropriate BMP's to achieve the assigned reductions within the assigned timeline.

The City will then adopt and appropriate amendment to the SWPPP and notify the MPCA. A separate general BMP has been assigned for this task for future TMDL's.

## 9. **BMP Evaluation Matrix (2.6)**

There are numerous methods used to improve the quality of stormwater leaving the urban drainage area and entering major or minor streams. Each one has its place based on:

- Effectiveness with targeted pollutant,
- Area available volume to be treated,
- Hydraulic head available,
- Initial cost,
- Operating cost,
- Maintenance cost,
- Acceptance by the public of any hazards, and
- Sophistication of operation

The table below is intended to assist in selecting appropriate BMP's.

The MPCA has adopted a stormwater manual that stipulates the percentage phosphorous reductions that certain BMP's can achieve. In it, the MPCA acknowledges that its values are likely to be more conservative than some national databases. Currently, the MPCA manual does not list acceptable values for turbidity or nitrogen; therefore the values included here are from one of the national databases.

The evaluation of BMP's must consider issues that are not related to the functionality of the systems. These values include maintenance, training required on the part of operators, potential hazards; nuisances and life expectancy before replacement.

Two effective BMP's that may be encouraged but not generally the direct responsibility of the City to operate, are rain barrels or rain gardens. The use of these methods is generally limited to the local property owners, however the construction of rain gardens in public parks and schoolyards could be encouraged.

**BMP Evaluation Matrix**  
**Estimated Removal Rates for Various BMP's**

	Bioretention		Filtration		Infiltration		Stormwater Ponds				Wetlands			Open Channel	Water Quality Swale
	Underdrain (BIO)	Infiltration (BIO)	Media Filters	Vegetative Filters (dry)	Infiltration Trench	Infiltration Basin	Dry ED	Flow-Through (Wet) Pond	Wet ED Pond	Micropond ED Pond	Shallow Wetland	Pond/Wetland	ED Shallow Wetland		
Average TP Removal Rate	50%	60%	50%	65%	65%	65%		50%	55%	40%	45%	55%	40%		
Maximum TP Removal Rate	65%	75%	60%	75%	90%	90%		70%	70%	75%	65%	75%	75%		
Average Soluble P Removal Rate	60%	70%	0%	70%	80%	80%		60%	70%	30%	50%	65%	30%		
Total Suspended Solids Removal			70-80%				25-70%	55-90%	50-75%		30-80%	55-85%		(50)-30%	60-80%
Total Nitrogen Removal			35-45%				25-40%	20-40%	30-45%		10-55%	10-20%	0-60%	(25)-10%	
Nitrate Removal			(50)-20%				(5)-40%	10-65%	20-65%		40-80%	(45)-40%	20-75%	(25)-10%	(10)-70%

\* Shaded values are from the Minnesota Stormwater Manual.

Un-shaded values are from the *National Pollutant Removal Performance Database* 1997 ed. TheMPCA may not accept these numbers.

## **10. Storm Water Modeling (2.7)**

The anticipated TMDL year-round reduction in nutrient load for Lake Pepin is 25%. This will apply to both the wastewater treatment plant and stormwater discharges. The City is required to demonstrate that the efforts that it is pursuing by installing BMP's capable of attaining the 25% reduction in phosphorous.

There are a number of sophisticated computer software programs that are capable of predicting the effectiveness of a specific stormwater phosphorous removal strategy.

The City of Big Lake will consider selecting a software model for this process.

## **11. Low Impact Development (LID) (2.8)**

Low impact development (LID) is a significant reversal from the development concepts that most communities have subscribed to. Rather than simply equating "low density" with "low impact", it directly examines the impacts on stormwater quantity and quality of stormwater runoff with the densities achieved in certain development patterns. In general, the conclusion is that the higher the density; the less impact per unit. Therefore, movement toward this concept is encouraged with the MS4 requirements.

Low impact development is a relatively new concept to the people of this area and it will take time before the developers and the public at large embraces it. The City may need to consider and implement changes in its zoning and development ordinances to encourage this practice, if LID is desired.

## **12. Legal Tools (2.9)**

Many of the recommendations of this plan will require authority granted by City Council through ordinance.

The following summary is a list of features for inclusion in city ordinances that should be adopted to address and control stormwater in the community:

- The City of Big Lake has a formal plat review process. As part of the process each developer is required to enter into a development agreement with the City. As part of the development agreement the developer will be required to comply with the SWPPP.
- Review and monitor the City's Right of Way Ordinance that defines the requirements of private utilities' responsibilities to appropriately repair areas disturbed by their activities and provide for appropriate enforcement procedures and actions.
- Monitor the City's stormwater utility so it is capable of funding the necessary improvements.
- Define discharges that are inappropriate and illicit for discharge to the stormwater system.



- Prohibit non-storm water discharges into the City storm sewer system.
- Re-assess existing ordinances for coordination with the SWPPP.
- Require erosion and sediment controls as well as sanctions ensuring compliance for all construction projects one acre or larger.
- Review and require each construction project to follow its specific SWPPP.
- Develop an inspection program that outlines detection and analysis methods used to address non-storm water discharges, including illegal dumping into the storm sewer system.

### **13. Plat Review Process (2.10)**

Currently, all land development is defined by the platting process.

The City has chosen to become directly involved in developing some commercial, residential or industrial property either as a developer or providing design and financing for suitable improvements. Private parties initiate most development.

The City **has not** chosen to extend its planning authority beyond the existing city limits.

Confidential pre-planning meetings are encouraged between developers and City staff.

Land use and zoning are defined in the City Code.

It will be necessary for the City to review the platting process in light of this SWPPP.

The City has a great deal of latitude in its current platting and “Development Agreement” process. However, in order to assure that proper and sufficient BMP’s are incorporated into future developments, a thorough review of the platting process would be appropriate. A review committee, made up of planning and public works staff will review the development process and make recommendations to the City Council for appropriate ordinance revisions.

### **14. Funding Mechanisms (2.11)**

The funding of this process will be by the City of Big Lake storm water utility.

### **15. Schedule For Monitoring, Operating, And Maintaining BMP’s (2.12)**

The City has created a schedule for establishing, monitoring, operating, and maintaining BMPs.

The MPCA and University of Minnesota are currently developing guidance that establishes four levels of monitoring. This guidance will be useful to communities in deciding appropriate levels of monitoring for BMPs.

### **16. Inventory Technical Tools And Expertise (2.13)**

Individual departments in the City government that are in immediate contact with stormwater issues will be responsible to keep up with the technical tools that are available.

This can be accomplished by attendance at industry seminars and workshops, and review of industry publications.

If changes in technical tools become available that the City chooses to employ, assignment of responsibility will be made to a qualified individual. This will include adequate training with an immediate on-the-job opportunity to implement and practice the tool.

## **17. BMP's That Can Be Implemented Immediately (2.14)**

- A.** Structural (e.g. detention ponds, infiltration ponds, bio-filtration systems, etc.)
  - Identify and inspect all existing stormwater detention facilities – perform all necessary maintenance
- B.** Non-structural (e.g. street sweeping)
  - Continue the City's street sweeping program
  - Initiate the public information program.
  - Introduce City personnel to the need for and requirements of this program with departmental training meetings. This should include the identification of illicit discharges.
  - Train City personnel who issue building permits and conduct inspections in the requirements. This includes how to read, interpret and approve/deny SWPPP's submitted as part of a permit request.

## **18. Goals For Next Five Years:**

- A.** 2007:
  - One of the first tasks will be to assign the responsibility for creating a filing system and performing record keeping.
  - Place information on the City's website.
  - Contact local organizations to determine their educational roles with regard to the Big Lake area SWPPP and participate as needed.
  - Initiate annual public meetings prior to submittal of annual report. This activity will continue into the future.
  - Review current ordinance language, with regard to the implementation of the SWPPP.
  - Draft changes and/or new ordinances addressing the appropriate areas for improvement.
  - Examine mechanisms to fund the stormwater program.
  - Distribute fliers for construction site erosion control with issuance of a building

permit.

- Ensure compliance with existing construction permits.
- Educate employees in how to apply both the SWPPP.

**B. 2008:**

- Work with local organizations to facilitate new educational opportunities.
- Draft ordinances as regard for compliance with the SWPPP.
- Prepare illicit discharge inspection and assessment program.
- Distribute fliers for construction site erosion control with issuance of a building permit.
- Draft and adopt long-term operation and maintenance program for stormwater facilities.
- Train City personnel for implementation of the long-term operation and maintenance program.

**C. 2009:**

- Implement some of the new educational programs through cooperative efforts with local organizations
- Continue to promote and work with local organizations for new and existing educational programs.
- Adopt illicit discharge inspection and assessment program.
- Perform training sessions for City personnel and inspection staff.
- Post-educational information on web page.
- Incorporate changes into ordinances as directed by the City Council.
- Ensure compliance with all construction permits.
- Complete inspections and maintenance as outlined in the long-term operations and maintenance program for stormwater facilities.

**D. 2010 - 2011:**

- Conduct illicit discharge inspection and assessment as adopted.

**19. Plan Modifications**

**A. General**

It is anticipated that this plan will be updated on an annual basis. The proposed updates

will be made public prior to being presented to the City Council in February of each year. Updates will be made on the following basis:

1. Modifications may be required by the Commissioner of the MPCA based on the following factors:
  - a. Discharges from the MS4 are impacting the quality of the receiving water.
  - b. More stringent requirements are necessary to comply with State or Federal regulations.
  - c. Additional conditions are deemed necessary to comply with the requirements of the Clean Water Act.
  - d. Modification required by the MPCA will be made in writing.
2. Reasonable modifications may be made as requested by the general public in the following formats:
  - a. Oral requests given at the annual presentation of the SWPPP at the February City Council Meeting.
  - b. Written requests received at the City Hall will be evaluated and presented to the City Council.
3. Modifications may be made by the City without prior approval of the Commissioner, provided it is in accordance with the following:
  - a. A BMP is added and none are subtracted from the SWPPP.
  - b. A BMP that has failed is replaced with an alternate BMP that addresses the same or similar concerns.
  - c. The Commissioner of the MPCA will be notified of the modification in the annual report.

## **20. Monitoring, Record Keeping And Reporting**

### **A. General**

To meet the permit requirements, the City will evaluate program compliance, assess identified BMPs and identify progress towards achieving the measurable goals.

The City will keep records required by the NPDES permit for at least 3 years beyond the term of the permit. The records are available to the public during regular business hours.

### **B. Approach**

The status of program compliance, assessment of identified BMPs and progress of achieving the measurable goals will be documented in an annual report that is submitted to the MPCA by June 30 of each year. The report will include the following:

1. Evaluation and assessment of the SWPPP.
2. Results of information collected and analyzed regarding the effectiveness of the SWPPP.
3. A summary of next years storm water activities planned.
4. Any proposed changes to BMPs or measurable goals.

The City will retain a copy of the SWPPP and all supporting information at City Hall. The information may be viewed by interested persons during business hours. A copy of the SWPPP may be acquired from the City. In addition, the application and annual reports will be retained at City Hall for a period of at least 3 years beyond the date of permit expiration.

## **21. Summary**

Approach toward pollution prevention:

The City's general approach is to map all of its significant discharges into its rivers, lakes and wetlands and to utilize the Best Management Practice approach to limit pollutants and illicit discharges through its outfalls by both structural and non-structural methods. Engineered installations such as retention ponds, sedimentation basins and in-line sediment removal devices are generally considered to be structural methods. Educating the general public as well as the City's maintenance personnel in more pollution conscious methods of mowing, fertilizing and proper waste disposal are generally considered to be non-structural methods.

A principal feature of this SWPPP will be the encouragement of public participation and involvement. This can be accomplished by:

- All meetings will be held locally.
- Notice will be published prior to the meeting copied of the notice will be provided to the MPCA, county officials and all other persons who have indicated an interest in the SWPPP.
- The Notice will contain a concise description of the manner in which the meeting will be conducted.
- The Notice will indicate where a copy of this SWPPP is available for public review.
- The meeting will solicit public opinion on the adequacy of the SWPPP.
- Interested persons will be given an opportunity to make statements concerning the SWPPP.
- Written material submitted concerning the SWPPP will be considered.
- The City will consider the public input and make adjustments as deemed appropriate to the SWPPP.

- Complete minutes will be taken to document the meeting and any submitted written statements regarding the SWPPP.
- The comments may be answered immediately if deemed appropriate. If more review is necessary, comments will be addressed at the next regularly scheduled meeting. All submitted comments will be addressed. A file of all comments and their conditions of acceptance and/or rejection will be kept on file and open for public review. Accepted amendments will be made part of the annual revision to the SWPPP.

This plan is a starting point of this 5-year permit and will be modified throughout the next 5 years. The general public is welcome to review this plan and to submit recommendations for revision during the annual SWPPP meeting that will be scheduled before the City Council in February of each year. The Minnesota Pollution Control Agency is also anticipated to submit comments and recommendations for both mandatory and suggested plan revisions. These requested revisions will be made available to the general public for review and comment.

The City will document its relevant actions proving its efforts to comply with the conditions of the permit. The City will keep all documented actions, the current SWPPP and any requested revisions on file with the permit.

BMP's

# **Table of Best Management Practices (BMP's) Identified**

## **1-PUBLIC EDUCATION AND OUTREACH**

<b>1a-1 - Distribute Educational Materials.....</b>	<b>2</b>
<b>1b-1 - Implement an Education Program .....</b>	<b>3</b>
<b>1c-1 - Education Program: Public Education and Outreach .....</b>	<b>5</b>
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<b>1c-6 - Education Program: Pollution Prevention/Good Housekeeping for Municipal Operations...</b>	<b>11</b>
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<b>1e-1 - Annual Public Meeting.....</b>	<b>13</b>

# BMP Summary Sheet

MS4 Name: Big Lake

Minimum Control Measure: 1-PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1a-1

<b>*BMP Title:</b> 1a-1 - Distribute Educational Materials	
<b>*BMP Description:</b>	
<ul style="list-style-type: none"><li>● Create and/or select written educational materials that introduce storm water management issues to residential and non-residential system users.</li><li>● City Newsletter – 2/year</li></ul>	<ul style="list-style-type: none"><li>● City's web site</li><li>● Community access TV – Post SWPPP</li><li>● Approach County Newsletter for inclusion</li><li>● Approach SWCD for inclusion</li></ul>
Location(s) in SWPPP of detailed information relating to this BMP: <ul style="list-style-type: none"><li>● The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</li></ul>	
<b>*Measurable Goals:</b>	
<ul style="list-style-type: none"><li>● Number of community events attended</li></ul>	<ul style="list-style-type: none"><li>● Number of speaking events held</li><li>● Number of hits on City web site</li></ul>
<b>*Timeline/Implementation Schedule:</b>	
<ul style="list-style-type: none"><li>● 2007-8</li><li>● 2008</li><li>● 2009</li></ul>	<ul style="list-style-type: none"><li>Begin with attendance at community events and newsletter articles</li><li>Post materials and create links on City web site</li><li>Approach school district on including stormwater issues in course material</li></ul>
<b>Specific Components and Notes:</b>	
<b>*Responsible Party for this BMP:</b>	
Name: Mike Goebel	
Department: Public Works	
Phone: 763.263.2107	fax 763.263.0133
E-mail: mike@ci.big-lake.mn.us	

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

# BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1b-1

**\*BMP Title:** 1b-1 - Implement an Education Program

**\*BMP Description:**

- Annually, select a theme and sequence of educational materials to be included with newsletter or on the web site over the succeeding year. Materials should change seasonally to reflect what the near future holds.
- The City's decision makers (e.g., elected and appointed officials) will need to become apprised of all aspects of the storm water management program. Additionally, it is anticipated that various entities (such as, business groups, service clubs, youth groups, teachers, environmental organizations, and others) will request presentations about storm water issues.
- Work with watershed SWCD's and others to prepare and distribute or post on City's website educational brochures or articles, and other materials such as:
  - Elk River Watershed Map & Statistics
  - Watershed district organizations
  - Various other brochures and educational materials
- Maintain a continual awareness to find new sources of information and document all new worthwhile finds.
- Annually, review the new material against the current materials used and adjust accordingly.
- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Number of hits on City web site
- Number of new sources of information found

**\*Timeline/Implementation Schedule:**

- 2007 Establish ongoing annual review
- 2007-8 Begin with materials in utility bills, literature racks, attendance at community events
- 2008 Web accesses active
- 2009-10 Approach school district on including stormwater issues in course material
-

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-1

<b>*BMP Title:</b> 1c-1 - Education Program: Public Education and Outreach
<b>*Audience(s) Involved:</b> <ul style="list-style-type: none"><li>● Adults</li><li>● Children</li></ul>
<b>*Educational Goals for Each Audience:</b> <ul style="list-style-type: none"><li>● Adults - Capable of describing the tie between good or bad stormwater management and clean waters</li><li>● Children – Describe examples of poor stormwater management and list corrective options</li></ul>
<b>*Activities Used to Reach Educational Goals:</b> <ul style="list-style-type: none"><li>● Adults –Watershed clean up projects</li><li>● Children – School curriculum targeting stormwater issues</li></ul>
<b>*Activity Implementation Plan:</b> <ul style="list-style-type: none"><li>● 2008-09 Community access television publications</li><li>● 2009-10 Approach school system for inclusion in curriculum</li><li>● 2008-11 Annual review</li></ul>
<b>*Performance Measures:</b> <ul style="list-style-type: none"><li>● Use evaluation forms to solicit feedback</li><li>● Number of classes sessions that include stormwater presentation</li><li>● Number of students in attendance</li><li>● Gross hits on web site</li><li>● Number of times run on community access TV</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Scott Johnson Department: Administration Phone: 763.263.2107 fax 763.263.0133 E-mail: scott@ci.big-lake.mn.us</p>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-2

<b>*BMP Title:</b> 1c-2 - Education Program: Public Participation
<b>*Audience(s) Involved:</b> <ul style="list-style-type: none"><li>● Adults</li><li>● Children -</li></ul>
<b>*Educational Goals for Each Audience:</b> <ul style="list-style-type: none"><li>● Adults – Recognize improperly vegetated and maintained buffer strips</li><li>● Children - Recognize clean and dirty water-</li></ul>
<b>*Activities Used to Reach Educational Goals:</b> <ul style="list-style-type: none"><li>● Civic group presentations</li><li>● Trace the route of stormwater through your neighborhood to nearby bodies of water</li><li>● Learn how fertilizer, grass clippings, leaves and sediment affect water quality</li><li>● Construct a reporting form on the City's web site for people to report BMP's requiring maintenance.</li><li>● Leaf and grass clippings drop-offs</li></ul>
<b>*Activity Implementation Plan:</b> <ul style="list-style-type: none"><li>● 2007 Approach community groups, scout groups and elementary schools for opportunities to speak</li><li>● 2008-9 Approach the organizers of the Academic Challenge competition in the schools to include questions on stormwater and environment for school age children.</li><li>● 2009 Approach high school chemistry and biology instructors for opportunities to reach students</li></ul>
<b>*Performance Measures:</b> <ul style="list-style-type: none"><li>● Evaluation questionnaires to measure effectiveness</li><li>● Record number of presentations and field trips annually</li><li>● Number of attendees at each function</li><li>● Record the number and character of all calls and site reports from the general public</li></ul>

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-3

<b>*BMP Title:</b> 1c-3 - Education Program: Illicit Discharge Detection and Elimination
<b>*Audience(s) Involved:</b> <ul style="list-style-type: none"><li>● MS4 field staff –</li><li>● MS4 supervisory staff –</li><li>● Other MS4 staff -</li><li>● Public Interest Groups</li></ul>
<b>*Educational Goals for Each Audience:</b> <ul style="list-style-type: none"><li>● MS4 field staff – Recognize types of illicit discharge potentially present in this area, ability to properly document any observations, understand their reporting responsibilities, able to describe punitive measures taken previously</li><li>● MS4 supervisory staff – Capable of evaluating documentation of illicit discharges and assessing the situation and determining an appropriate response. Capable to verbally, with follow-up written instruction, to the offender solicit cooperation to rectify the situation. Able to describe punitive measures taken previously.</li><li>● Other staff - Recognize types of illicit discharge potentially present in this area and report it to MS4 staff</li><li>● Public groups - Recognize and be able to describe the types of illicit discharge; and the difference between illegal and illicit discharges</li></ul>
<b>*Activities Used to Reach Educational Goals:</b> <ul style="list-style-type: none"><li>● Provide training to City staff so that they can learn their various roles in stormwater management, including:<ul style="list-style-type: none"><li>● Implementers of SWPPP &amp; BMPs,</li><li>● Observers and reporters of illicit discharges, illegal dumping, erosion control problems,</li></ul></li><li>● Brief other staff on what an Illicit Discharge looks like and who to report it to</li><li>● Presentations at community groups and on the city's web site</li></ul>
<b>*Activity Implementation Plan:</b> <ul style="list-style-type: none"><li>● 2007-8 Initiate seasonal required training on potential illicit discharges during the upcoming season – All MS4 staff</li><li>● 2007-8 Annual formal training session for key staff members</li><li>● 2007-11 Attend local and regional training when presented</li></ul>
<b>*Performance Measures:</b> <ul style="list-style-type: none"><li>● Record number, types and locations of illicit discharges</li><li>● Keep records of training sessions attended by staff</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Mike Goebel Department: Public Works Phone: 763.263.2107 fax 763.263.0133 E-mail: mike@ci.big-lake.mn.us</p>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-4

<b>*BMP Title:</b> 1c-4 - Education Program: Construction Site Run-off Control		
<b>*Audience(s) Involved:</b>		
<ul style="list-style-type: none"> <li>● Local building construction companies –</li> <li>● Local developers –</li> </ul>	<ul style="list-style-type: none"> <li>● Building inspectors</li> <li>● Conduct precon meetings</li> <li>● Erosion Control Permit</li> </ul>	
<b>*Educational Goals for Each Audience:</b>		
<ul style="list-style-type: none"> <li>● Local building construction companies – Describe the effectiveness of the precon Erosion Control permit and the buiding permit details required, recognize damaged BMP's, capable of effectively reading the site SWPPP, understanding the reporting requirements of individual SWPPP's, describe the potential penalties</li> <li>● Local developers – Capable of describing to homebuyers the responsibilities of compliance with requirements of the STORM WATER POLLUTION PREVENTION PLAN including limitations on future grading.</li> <li>● Building inspectors – ability to enforce the rules of the individual SWPPP</li> </ul>		
<b>*Activities Used to Reach Educational Goals:</b>		
<ul style="list-style-type: none"> <li>● Present seminars at the beginning of each construction season; publicize them to all firms requesting building permits or marketing properties in the past.</li> <li>● Provide materials with each exterior building permit request</li> <li>● Pre-Construction meetings</li> <li>● Erosion control permit applications</li> </ul>		
<b>*Activity Implementation Plan:</b>		
<ul style="list-style-type: none"> <li>● 2007-8 Provide materials with building permits</li> <li>● 2008-11 Hold annual seminars for building contractors and developers to explain expectations</li> <li>● 2007-8 Educate building and utility inspectors on evaluating the operation of structural BMP's – reminder training to be held each spring</li> </ul>		
<b>*Performance Measures:</b>		
<ul style="list-style-type: none"> <li>● Number of attendees at annual training seminars</li> <li>● Number of building permits with materials attached were issued to contractors versus do-it-yourself individuals</li> <li>● Number of MPCA permit transfers occuring annually</li> </ul>		
<b>*Responsible Party for this BMP:</b>		
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Department: Engineering	Public Works	Building Inspector
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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-5

<b>*BMP Title:</b> 1c-5 - Education Program: Post-Construction Stormwater Management in New Development and Redevelopment
<b>*Audience(s) Involved:</b> <ul style="list-style-type: none"><li>● Realtors –</li><li>● Landscape firms –</li><li>● Nurseries –</li><li>● City newsletter -</li></ul>
<b>*Educational Goals for Each Audience:</b> <ul style="list-style-type: none"><li>● Realtors – Capablility to describe to homebuyers the responsibilities of compliance with requirements of the Storm Water Pollution Prevention Plan including limitations on future grading.</li><li>● Landscape firms – Ability to find, read and describe to customers the limitations on grading in developments as described in the Storm Water Pollution Prevention Plan</li><li>● Nurseries – Capablility to critically listen to customer's desires and interpret them for compliance with MS4</li></ul>
<b>*Activities Used to Reach Educational Goals:</b> <ul style="list-style-type: none"><li>● In public hearings on redevelopment before the Planning Commission include description of stormwater maintenance and limits of alteration</li><li>● Present seminars at the beginning of each construction season to the target audiences</li></ul>
<b>*Activity Implementation Plan:</b> <ul style="list-style-type: none"><li>● 2007-8 Initiate spring seminar for landscape firms and nurseries on the requirements and limits of MS4 compliance</li><li>● 2007-11 Seek speaking opportunities with realtor association to describe the procedures that must be met</li></ul>
<b>*Performance Measures:</b> <ul style="list-style-type: none"><li>● Number of meetings and attendance held with citizen groups, developers, landscape firms and staff training</li><li>● Number of grading inspections conducted with issuance of occupancy permit request</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Mike Goebel Department: Public Works Phone: 763.263.2107 fax 763.263.0133 E-mail: mike@ci.big-lake.mn.us</p>

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1c-6

<b>*BMP Title:</b> 1c-6 - Education Program: Pollution Prevention/Good Housekeeping for Municipal Operations
<b>*Audience(s) Involved:</b> <ul style="list-style-type: none"><li>● MS4 field staff –</li><li>● MS4 supervisory staff –</li><li>● General Public through civic groups</li></ul>
<b>*Educational Goals for Each Audience:</b> <ul style="list-style-type: none"><li>● MS4 field staff – Capable of recognizing improperly operating BMP's, ability to describe corrective measures, capable of implementing the corrective measures</li><li>● MS4 supervisory staff – Capable of recognizing improperly operating BMP's, ability to describe corrective measures, identify all materials necessary to correct the situation; knowledge of where those materials are available, capable of communicating with field staff the required corrective plan</li><li>● General Public - Capable of recognizing poor housekeeping practices in municipal operations and comfortable to report them to the MS4</li></ul>
<b>*Activities Used to Reach Educational Goals:</b> <ul style="list-style-type: none"><li>● With MS4 field staff, develop a list of activities commonly seen locally that could contribute to pollution and methods used to control them</li><li>● At beginning of each season hold training meeting to educate all MS4 personnel in the proper use and functioning of the various BMP's</li><li>● Invite vendors of structural BMP products to present training to the MS4 staff</li><li>● Add comments to other public presentations that request public involvement in assisting the MS4 to scrutinize its own operations</li></ul>
<b>*Activity Implementation Plan:</b> <ul style="list-style-type: none"><li>● 2007 Prepare training materials</li><li>● 2008 Begin seasonal training on activities inclined to release pollution during the coming season</li><li>● 2009-10 Begin inviting vendors to present products</li></ul>
<b>*Performance Measures:</b> <ul style="list-style-type: none"><li>● Attendance list at all training sessions and logged in the employee's personnel file</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Mike Goebel Department: Public Works Phone: 763.263.2107 fax 763.263.0133 E-mail: mike@ci.big-lake.mn.us</p>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1d-1

<b>*BMP Title:</b> 1d-1 - Coordination of Education Program	
<b>*BMP Description:</b>	
<ul style="list-style-type: none"> <li>● Identify local MS4's (Big Lake Twp, SWCD, etc.) in the area and identify all resources to publicize information in each one's area. Contact each of them in an effort to eliminate any duplication that could confuse the public.</li> <li>● Hold discussions with local water resources educators to discuss the delivery of storm water educational BMPs, inventory local existing programs, develop educational priorities and implementation opportunities for consideration during the development of the 2007-2011 Education Plan; develop agreements with willing partners.</li> <li>● Time appropriate messages</li> </ul>	
Location(s) in SWPPP of detailed information relating to this BMP:	
<ul style="list-style-type: none"> <li>● The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</li> </ul>	
<b>*Measurable Goals:</b>	
<ul style="list-style-type: none"> <li>● Number of meeting invitations; attendance; program inventory; priority list</li> <li>● Number of agreements; 2007-2011 Education Plan.</li> </ul>	
<b>*Timeline/Implementation Schedule:</b>	
<ul style="list-style-type: none"> <li>● 2007</li> <li>● 2007-8</li> <li>● 2008</li> </ul>	<ul style="list-style-type: none"> <li>Identify other MS4 communities in the vicinity</li> <li>Inquire of other MS4's which media outlets they may use in their implementation</li> <li>Select best presenters from each MS4 for each audience and coordinate</li> </ul>
<b>Specific Components and Notes:</b>	
<ul style="list-style-type: none"> <li>● Attempt to focus on sharing the responsibilities to staff community events to reduce total cost. Also, the internal staff communication could be helpful</li> </ul>	
<b>*Responsible Party for this BMP:</b>	
<p>Name: Brad DeWolf</p> <p>Department: Engineering</p> <p>Phone: 612-756-1032</p> <p>E-mail: bradde@bolton-menk.com</p>	<p>Scott Johnson</p> <p>Administration</p> <p>763.263.2107                      fax 763.263.0133</p> <p>scott@ci.big-lake.mn.us</p>

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** PUBLIC EDUCATION AND OUTREACH

**Unique BMP Identification Number:** 1e-1

<b>*BMP Title:</b> 1e-1 - Annual Public Meeting
<b>*BMP Description:</b> <ul style="list-style-type: none"><li>● Complete meeting notice to public, MPCA, county officials and all other persons who have indicated interest in the SWPPP.</li><li>● Issue press release of upcoming meeting with an approximate agenda</li><li>● Place notices in city newsletter and utility bill stuffers</li><li>● Document attendance at public hearing.</li><li>● Document public input with regard to the adequacy of the SWPPP, whether written or oral opinion.</li><li>● Adjust SWPPP according to comments and as directed by the Council</li></ul> Location(s) in SWPPP of detailed information relating to this BMP: <ul style="list-style-type: none"><li>● The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</li></ul>
<b>*Measurable Goals:</b> <ul style="list-style-type: none"><li>● Number of attendees</li><li>● Promptness of start and end</li><li>● Number of comments from the public</li></ul>
<b>*Timeline/Implementation Schedule:</b> <ul style="list-style-type: none"><li>● 2007 Begin annual meetings - Meeting scheduled annually sometime in January or February throughout the term of the permit.</li></ul>
<b>Specific Components and Notes:</b> <ul style="list-style-type: none"><li>● The public notice will be completed a minimum of 30 days prior to the second Council in February.</li><li>● Adjust SWPPP according to comments and as directed by the City Council</li><li>● The hearing will be held prior to the regularly scheduled council meeting.</li><li>● The notice will contain the following information: reference to the SWPPP, date, time and location of the public hearing, concise description of the manner in which the public hearing is to be conducted and where a copy of the SWPPP is available for the public to review.</li><li>● The meeting will solicit public opinion with regard to the adequacy of the SWPPP.</li><li>● Interested persons will be given a reasonable opportunity to make oral statements regarding the SWPPP.</li><li>● All timely and relevant comments will be considered in adjusting the SWPPP.</li><li>● Adjustments will be made to the SWPPP according to the public comment and as directed by the Council.</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Brad DeWolf Department: Engineering Phone: 612-756-1032 E-mail: bradde@bolton-menk.com</p>

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

# **Table of Best Management Practices (BMP's) Identified**

## **2-PUBLIC PARTICIPATION/INVOLVEMENT**

<b>2a-1 - Comply with Public Notice Requirements .....</b>	<b>2</b>
<b>2b-1 - Solicit Public Input and Opinion on the Adequacy of the SWPPP.....</b>	<b>3</b>
<b>2c-1 - Consider Public Input .....</b>	<b>4</b>

# BMP Summary Sheet

MS4 Name: Big Lake

Minimum Control Measure: 2-PUBLIC PARTICIPATION/INVOLVEMENT

Unique BMP Identification Number: 2a-1

**\*BMP Title:** 2a-1 - Comply with Public Notice Requirements

**\*BMP Description:**

- Document with proof of publication from the newspaper of record that Public Notices were published
- In addition to the legal notice, document issuance of all press releases associated with MS4 compliance

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Affidavit of proof of publication available for public review
- Number of times per year are formal Notices are published on any MS4 issue

**\*Timeline/Implementation Schedule:**

- 2007-11 Continuing throughout permit period

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 2-PUBLIC PARTICIPATION/INVOLVEMENT

**Unique BMP Identification Number:** 2b-1

**\*BMP Title:** 2b-1 - Solicit Public Input and Opinion on the Adequacy of the SWPPP

**\*BMP Description:**

- Include in the annual hearing notice, language that invites public participation and input on the adequacy of the SWPPP
- All external communication and publicity should include contact name of the MS4 staff person responsible, MS4 mailing address, and MS4 general e-mail address. The email address should be the MS4's general address where the communication can be inventoried and assigned.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Count of each type of communication received.
- Measure the percentage of materials without the appropriate contact information. May indicate a need to adjust communication
- Number of each material sent in response to inquiries

**\*Timeline/Implementation Schedule:**

- 2007-11 Continuing throughout permit period

**Specific Components and Notes:**

- Follow-up tracking of assignments is required.

**\*Responsible Party for this BMP:**

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# BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 2-PUBLIC PARTICIPATION/INVOLVEMENT

**Unique BMP Identification Number:** 2c-1

**\*BMP Title:** 2c-1 - Consider Public Input

**\*BMP Description:**

- Maintain a file of all comments received throughout the year with documentation to indicate final resolution.
- Request all materials be submitted in writing for the annual meeting
- Prepare a summary of input received throughout the year.
- As discussion proceeds and corrective actions are described, assign a specific individual to follow-up on specific issues.
- One month after the annual meeting, require reports from the assigned individuals. Report resolution back to the source and the Council

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Number of comments received
- Send follow-up cards to each commentor for their satisfaction with the response

**\*Timeline/Implementation Schedule:**

- 2008-9 and continuing for permit period

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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**Table of Best Management Practices (BMP's) Identified**  
**3-ILLICIT DISCHARGE DETECTION AND ELIMINATION**

<b>3a-1 - Storm Sewer System Map.....</b>	<b>2</b>
<b>3a-2 - Define Drainage Areas .....</b>	<b>3</b>
<b>3b-1 - Regulatory Control Program .....</b>	<b>4</b>
<b>3c-1 - Illicit Discharge Detection and Elimination Plan .....</b>	<b>5</b>
<b>3d-1 - Public and Employee Illicit Discharge Information Program .....</b>	<b>6</b>
<b>3e-1 - Identification of Non Stormwater Discharges and Flows .....</b>	<b>7</b>

## BMP Summary Sheet

MS4 Name: Big Lake

Minimum Control Measure: 3-ILLCIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3a-1

**\*BMP Title:** 3a-1 - Storm Sewer System Map

**\*BMP Description:**

- Maintain an accurate storm sewer map
- Although it may not be feasible to immediately eliminate every existing illicit discharge, all discharge points should be noted with description, to assist in prioritization of elimination efforts.
- Once each year the trunk maps will be collected and updates will be made to the map. Map books should then be re-printed and distributed.
- Incorporate the mapping system into the SWPPP.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Inventory at beginning of each quarter the number of MS4 maintenance vehicles with the 11 X 17 books
- Maintain a log of frequency of updating the maps

**\*Timeline/Implementation Schedule:**

- 2008 Begin capturing the rims, inverts and GPS locations
- 2007 Continue printing the 11 x 17 books for maintenance vehicles
- 2007 Continue retrieving the books and updating the maps annually

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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# BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 3-Illicit Discharge Detection And Elimination

**Unique BMP Identification Number:** 3a-2

**\*BMP Title:** 3a-2 - Define Drainage Areas

**\*BMP Description:**

- Superimpose or develop full contours on the stormwater utility map
- Define all points of discharge on the map
- Outline the tributary area for each outlet.
- Identify sub areas with their development pattern as of 2000, 2007 and 2025. Also, identify area of impervious, landscaped, undeveloped and wetland in each area
- Illustrate all existing BMP's and types along the routes within the drainage area. Determine the area served by each individual BMP. Note if the BMP was installed prior to 2000.
- Place all information gathered in a database.
- Require developers to submit drainage calculations

Location(s) in SWPPP of detailed information relating to this BMP:

The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

% of city identified with sub areas	
% of city with identified stormwater routes	
% of city included in the database	

**\*Timeline/Implementation Schedule:**

2007-8 Begin calculating sub areas and determining the amount of impervious cover  
2008-9 Entry into database

**Specific Components and Notes:**

- As development /re-development occurs or large area re-zoning s are approved the map and all areas must be adjusted.

**\*Responsible Party for this BMP:**

Name: Brad DeWolf  
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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

**Unique BMP Identification Number:** 3b-1

**\*BMP Title:** 3b-1 - Regulatory Control Program

**\*BMP Description:**

- An Illicit Discharge Ordinance will be drafted, and recommended for implementation.
- Review current ordinance language.
- Draft and recommend adoption of City ordinance, including policies for enforcement and penalties
- Educate the staff and public on the requirements of the ordinance
- Through inspections, enforce the ordinance, including penalties

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Draft City ordinance. & Complete public hearing notice.
- Document attendance at public hearing.
- Document public input with regard to the adequacy of the ordinance, whether written or oral opinion.
- Adjust the ordinance according to comments and as directed by the Council
- Adopt illicit discharge ordinance.
- Track fines levied by implementation of ordinance.

**\*Timeline/Implementation Schedule:**

- 2007-8 Information gathering on model and existing ordinances.
- 2008-9 Drafting of illicit discharge ordinance.
- 2008-9 Public hearing for public input on illicit discharge ordinance.
- 2009 Adoption of the illicit discharge ordinance.
- 2010-11 Monitoring of fines levied by implementation of illicit discharge ordinance.

**Specific Components and Notes:**

- In the first two years of permit coverage, an illicit discharge ordinance will be drafted. A public notice will be completed a minimum of 30 days prior to the scheduled public hearing. The public hearing will solicit public opinion with regard to the adequacy of the ordinance. Interested persons will be given a reasonable opportunity to make oral statements regarding the ordinance. All timely and relevant comments will be considered in adjusting the ordinance. Adjustments will be made to the ordinance according to the public comment and as directed by the Council.

**\*Responsible Party for this BMP:**

Name:	Brad DeWolf	Mike Goebel	Scott Johnson
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# BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 3-ILLCIT DISCHARGE DETECTION AND ELIMINATION

**Unique BMP Identification Number:** 3c-1

**\*BMP Title:** 3c-1 - Illicit Discharge Detection and Elimination Plan

**\*BMP Description:**

- Develop map of the storm sewer system with rims, inverts and GPS locations on each structure.
- Identify - policies (MS4, watershed district, state and regional) that already exist
- Identify criminal code (state of Minnesota) that exists
- Adopt necessary rules to fill-in any gaps that exist in existing codes and rules
- Develop field procedures for identifying and eliminating illicit connections
- Develop administrative procedures for notifying violators and enforcing compliance
- Continue the City's twice per year inspections

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Identify illicit discharge issues and concerns.
- Quantify illicit discharge types, locations, etc.
- Develop and implement an illicit discharge inspection and assessment program.
- Incorporate the illicit discharge inspection program into the SWPPP.
- Perform inspections as outlined in illicit discharge inspection program.

**\*Timeline/Implementation Schedule:**

- 2007-8 Information gathering on model and existing ordinances.
- 2008-9 Drafting of illicit discharge ordinance.
- 2008-9 Public hearing for public input on illicit discharge ordinance.
- 2009 Adoption of the illicit discharge ordinance.
- 2010-11 Monitoring of fines levied by implementation of illicit discharge ordinance.

**Specific Components and Notes:**

- In the first two years of permit coverage, an illicit discharge inspection and assessment program will be drafted.
- Adjustments will be made to the inspection program according to the public comment and as directed by the Council.

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

MS4 Name: Big Lake

Minimum Control Measure: 3-ILLCIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3d-1

**\*BMP Title:** 3d-1 - Public and Employee Illicit Discharge Information Program

**\*BMP Description:**

- Training will be held for City personnel and inspection staff for implementation of the illicit discharge inspection and assessment program.
- Brochures specifically describing illicit discharges will be added to other materials for distribution to the general public
- Newsletters

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Maintain a list of individuals attending training.
- Document any responses to the inspection and assessment program.
- Modify illicit discharge inspection program accordingly to comments received.

**\*Timeline/Implementation Schedule:**

- 2007-8 and continuing through the permit period.
- Training will be conducted with the appropriate staff.

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 3-ILLCIT DISCHARGE DETECTION AND ELIMINATION

**Unique BMP Identification Number:** 3e-1

**\*BMP Title:** 3e-1 - Identification of Non Stormwater Discharges and Flows

**\*BMP Description:**

- Prepare a list of typical “non-stormwater discharges” from local experience.
- Examine the topographic maps of the city and identify stormwater routes of collection
- Identify potential intercepts between discharge points and stormwater routes
- During periods of reasonable rainfall, walk 20% of the collection routes each year to identify discharges
- In late winter, survey the community for storage piles of snow. Notify property owner of responsibility to clean up any debris collected with the snow immediately after snow melt.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Track number of illicit discharges identified as well as the actions taken and final resolution
- 20% of stormwater collection routes walked per year.
- Number of sites with snow storage piles identified and notified

**\*Timeline/Implementation Schedule:**

- 2008-9 Begin surveying commercial areas of the city for snow pile storage and notify property owners
- 2009-10 Extend the survey and notification to multifamily areas

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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**Table of Best Management Practices (BMP's) Identified**  
**4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL**

<b>4a-1 - Ordinance or other Regulatory Mechanism .....</b>	<b>2</b>
<b>4b-1 - Construction Site Implementation of Erosion and Sediment Control BMPs.....</b>	<b>4</b>
<b>4c-1 - Waste Controls for Construction Site Operators .....</b>	<b>6</b>
<b>4d-1 -Impaired Waters Review Process .....</b>	<b>7</b>
<b>4e-1 - Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance...</b>	<b>9</b>
<b>4f-1 - Establishment of Procedures for Site Inspections and Enforcement .....</b>	<b>10</b>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

**Unique BMP Identification Number:** 4a-1

**\*BMP Title:** 4a-1 - Ordinance or other Regulatory Mechanism

**\*BMP Description:**

- Identify - policies (MS4, watershed district, state and regional) that already exist
- Review current ordinance language.
  
- Draft City ordinance to adopt development standards. The City will ensure that the ordinance will include the following:
  1. Requirements for Site Plan submittal by site operators to the City which includes erosion and sediment control BMP's
  2. Site plan review and approval by the City of Big Lake prior to construction activity.
  3. Requirements and design standards for temporary erosion and sediment controls during construction activities
  4. Requirements for record keeping of rainfall amounts and inspections by site operators.
  5. Regular inspections by site operators
  6. Requirements and criteria for dewatering and basin draining
  7. Requirements and criteria for BMP maintenance
  8. Requirements concerning waste controls for hazardous waste
  9. Requirements concerning waste controls for solid waste
  10. Requirements and design standards for permanent erosion and sediment controls following the completion of construction activities, and
  11. Permanent stormwater management system review and approval by the City of Big Lake.
  
- Complete public hearing notice.
- Document attendance at public hearing.
- Document public input with regard to the adequacy of the ordinance, whether written or oral opinion.
- Adjust the ordinance according to comments and as directed by the City Council.
- Adopt construction site storm water runoff control ordinance

Location(s) in SWPPP of detailed information relating to this BMP:

The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- Conformance with the timetable for this BMP
- Enactment of policies at the department level
- Criminal enforcement for ordinance violations

**\*Timeline/Implementation Schedule:**

- 2007-8 Information gathering on model and existing ordinances.
- 2008-9 Drafting of construction site storm water runoff control ordinance.
  
- 2008 Public hearing for public input on construction site storm water runoff control ordinance.
  
- 2008-9 Adoption of the construction site storm water runoff control ordinance
- 2010-11 Implementation of penalties

**Specific Components and Notes:**

- In the first two years of permit coverage, a construction site storm water runoff control ordinance will be drafted.
  
- A public notice will be completed a minimum of 30 days prior to the scheduled public hearing.
- The public hearing will solicit public opinion with regard to the adequacy of the ordinance.
  
- Interested persons will be given a reasonable opportunity to make oral statements regarding the ordinance.
  
- All timely and relevant comments will be considered in adjusting the ordinance.
  
- Adjustments will be made to the ordinance according to the public comment and as directed by the Council. The ordinance will also outline sanctions to ensure compliance by including an enforcement component. Compliance tools could potentially include, but are not limited to the following:
  1. Verbal warnings
  2. Written warnings
  3. Stop-work orders
  4. Fines,
  5. Forfeit of security bond money, and/or
  6. Withholding of Certificate of Occupancy.

**\*Responsible Party for this BMP:**

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# BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

**Unique BMP Identification Number:** 4b-1

**\*BMP Title:** 4b-1 - Construction Site Implementation of Erosion and Sediment Control BMPs

**\*BMP Description:**

● The Public Works/Engineering Departments will form a BMP Review Board. Of all the BMPs available in the literature, it will identify the ten (10) found to be the most effective in keeping erosion under control and containing sediment on the construction site and off the streets in similar communities. These ten (10) BMPs will be outlined in an Erosion and Sediment Control Handbook (and are highlighted in the City's stormwater ordinance) that the City will give to all builders, contractors, and developers.

● The second week in February, the City will host a BMP Workshop for all local builders, contractors, and developers. The ten (10) BMPs selected by the BMP Review Board will be explained in detail with data from the literature denoting the efficacy of each BMP.

- The second week in May, the City hosts a Field Day when the staff from the Public Works/Engineering Departments demonstrate the proper way to install the ten (10) BMPs.
- Proper maintenance of the BMPs is also discussed at this event.
- Draft development standards

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.

**\*Measurable Goals:**

- # of permits issued
- # of pre-con meetings held

**\*Timeline/Implementation Schedule:**

● During the year following the completion of the stormwater ordinance and the selection of the ten (10) BMPs, start the implementation of these BMPs.

- 2007-8 Plan review must include evaluating BMP 's specified in SWPPP for the project
- 2008 Attempt the formation of coordination team.
- 2007-11 Annual BMP Workshop.
- 2008-11 Add five (5) new BMPs that the BMP Review Board feels are justifiable.

**Specific Components and Notes:**

- Make certain that the BMPs selected by the BMP Review Board are consistent with the requirements of the Phase II General Stormwater Permit for Construction Activity.
- Attendance at the BMP Workshops.

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

**Unique BMP Identification Number:** 4c-1

<b>*BMP Title:</b> 4c-1 - Waste Controls for Construction Site Operators		
<b>*BMP Description:</b>		
<ul style="list-style-type: none"> <li>● Verify that ordinances in place appropriately address construction site operators</li> <li>● Carefully examine site specific BMP's for adequate waste control management</li> <li>● Assess construction site material storage and waste management problems and identify definitions and criteria needed to promote proper construction site materials storage and compliance</li> <li>● Provide training to contractors and suppliers in the proper use and storage of potentially hazardous and non-hazardous MS4 regulated materials</li> </ul>		
<p>Location(s) in SWPPP of detailed information relating to this BMP:</p> <ul style="list-style-type: none"> <li>● The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</li> </ul>		
<b>*Measurable Goals:</b>		
<ul style="list-style-type: none"> <li>● List all key construction site material storage and waste management issues encountered</li> <li>● Incorporate into development standards and construction specs</li> <li>● Number of copies distributed</li> <li>● Provide copies of the guide to contractors &amp; developers who attend the February and May workshops</li> </ul>		
<b>*Timeline/Implementation Schedule:</b>		
<ul style="list-style-type: none"> <li>● 2007-8 Identify hazardous materials and storage issues</li> <li>● 2008-9 Develop pocket guide and other education tools</li> <li>● 2009-11 Present information annually to contractors and suppliers</li> </ul>		
<b>Specific Components and Notes:</b>		
<ul style="list-style-type: none"> <li>●</li> </ul>		
<b>*Responsible Party for this BMP:</b>		
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E-mail:	sam@ci.big-lake.mn.us	mike@ci.big-lake.mn.us
		Brad DeWolf Engineering 612-756-1032 bradde@bolton-menk.com

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Permit Condition:** 4d Section 303(d) listings

**Unique BMP Identification Number:** 4d – 1

**BMP Title:** 4d-1 -Impaired Waters Review Process

### **BMP Description:**

Big Lake will review all discharges from our MS4 system to impaired waters, as defined by the current USEPA approved 303(d) list.

In this review, Big Lake will:

- Identify the impaired waters that are likely to be impacted by its storm water discharge.
- Use a combination of storm sewer maps and field surveys to identify all potential stormwater discharges to impaired waters
- Delineate the watershed area(s) that contribute to the above discharge(s)
- Evaluate the hydrology, land use and other characteristics of the watershed area(s) that may impact the impaired water as a result of a stormwater discharge from our MS4

Based on the review above, we will determine if any changes to the existing stormwater system or BMPs are needed to minimize the impact of discharges from our MS4 to the impaired water(s). If such modifications are deemed necessary, Big Lake will modify its SWPPP and submit those modifications to the MPCA with the current year's annual report. In our review, we will consider timing and long and short term costs. All assumptions, reasoning, and justification used to reach a conclusion on whether or not SWPPP revisions are necessary will be documented in the decision making process and records of this determination kept along with all records associated with the MS4 permit. A narrative summary of this review will then be prepared, and identify any associated SWPPP revisions that were made.

### **Measurable Goals:**

- The City will determine if any processes are in place and actions have already been accomplished that will help meet these permit conditions, including any TMDL stakeholder meetings.
- The City will prepare a written inventory of all impaired waters within Big Lake, as well as those outside city limits that are likely to be impacted as a result of receiving stormwater discharge from Big Lake. This includes compiling detailed information relative to the storm water discharges impaired waters receive from the Big Lake as is available.
- The City will prepare a map that includes all impaired waters that its storm water discharge may impact, all discharge points that may impact these waters, and the delineated watershed limits that may contribute to the impairment.
- The City will prepare a written overview of the conclusions reached through this review, including the decision making process used to determine what SWPPP revisions may be needed.
- The City will prepare a projected schedule and timeline to incorporate any necessary changes into the SWPPP.

### **Timeline/Implementation Schedule:**

Currently the Elk River is on the 303d list for aquatic life and aquatic consumption and Mississippi Rivers for aquatic life, aquatic consumption and aquatic recreation. The City will attend TMDL Stakeholders meetings set up by the MPCA to determine the cause of the pollution, determine the threshold allowable pollutant loading and to allocate that load limits correcting each impairment. The stakeholder meetings will be coordinated and scheduled by MPCA.

If Big Lake is allocated a TMDL for a pollutant causing the impairment, the City will evaluate its probable

contaminant sources and install additional BMPs to limit the source pollution in keeping with the TMDL allocation.

By 2012, the City of Big Lake will develop a storm water management plan which will:

1. List and map all impaired waters within or downstream of the Municipal Storm Sewer System.
2. Delineate all major and minor watershed areas contributing to waters of the State, including impaired waters.
3. Complete an Evaluation of hydrology, land use, etc
4. Recommend further ordinances and BMPs to regulate the runoff associated with its growth municipal operations.

Annually, the City will include an overview of the impaired waters review and any changes to the SWPPP that have been deemed necessary through updated 303d and TMDL process.

**Specific Components and Notes:**

This process is to be reassessed annually over the course of the permit cycle. As new 303(d) lists with additional impaired waters listed are published in the future, Big Lake will review changes to the list and conduct the necessary review of additional listed waters likely to be impacted by the MS4's stormwater discharges.

When an USEPA approved TMDL is finalized, Big Lake intends to fully comply with all limits and requirements set forth in the TMDL in accordance with the schedule(s) outlined in the TMDL and the MS4 Permit.

**Responsible Party for this BMP:**

Name: Brad DeWolf

Department: Engineering

Phone: 612-756-1032

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

**Unique BMP Identification Number:** 4e-1

**\*BMP Title:** 4e-1 - Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance

**\*BMP Description:**

- Establish the procedure to receive and process noncompliance reports. Procedure shall include
  - Immediate response to the source of the report
  - Maintain a log of all reports, the assignment, estimated completion date, the current status
  - Maintain a 'clean' copy on file; photocopy working copies
  - Response of findings and resolution to the source of the report
- Items may be referred to administration, field staff, council or outside consultants for recommendations and/or resolution

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Number of items received - annually
- Number of items open at end of each quarter
- Time required to bring non-compliance issues into compliance

**\*Timeline/Implementation Schedule:**

- 2007-8 Identify all actions that could result in noncompliance
- 2008-9 Draft procedure for non-compliance issue resolution
- 2009-10 Initiate non-compliance procedures and enforcement

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

**Unique BMP Identification Number:** 4f-1

**\*BMP Title:** 4f-1 - Establishment of Procedures for Site Inspections and Enforcement

**\*BMP Description:**

- Construction sites 1 acre or larger, or with the potential to pollute storm water, will be required to have stormwater pollution prevention plans in place prior to commencement of earth-disturbing activities.
- Establish procedures and time frames for conducting site inspections
- Initiate site inspection and enforcement programs
- Provide training for building code enforcement officials

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- All sites 1 acre or larger will have issued permits and SWPP Plans in place; smaller sites will be evaluated by the responsible party to determine if a SWPPP and state permit will be required
- All sites will:
  - Be visited at least once by MS4 personnel near the beginning of work and once as the work is completed.
  - Have to abide by erosion and sediment control guidelines

**\*Timeline/Implementation Schedule:**

- 2007 Provide training for building code officials
- 2007-8 Begin implementing the SWPPP requirement for all sites over 1 acre
- 2009-10 Initiate inspection and enforcement program

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## **Table of Best Management Practices (BMP's) Identified**

### **5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT**

<b>5a-1 - Development and Implementation of Structural and/or Non-structural BMPs.....</b>	<b>2</b>
<b>5a-4 - Review and Adjust Existing Ordinances and Development Standards.....</b>	<b>3</b>
<b>5b-1 - Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment..</b>	<b>4</b>
<b>5b-2 - Verify enforcement options with private utilities.....</b>	<b>6</b>
<b>5c-1 - Long-term Operation and Maintenance of BMPs.....</b>	<b>7</b>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

**Unique BMP Identification Number:** 5a-1

**\*BMP Title:** 5a-1 - Development and Implementation of Structural and/or Non-structural BMPs

**\*BMP Description:**

- Assign the responsibility for stormwater management to a specific position in MS4 organization
- Enact ordinance prohibiting the modification, removal or disabling any BMP without format written authority from the MS4
- Review stormwater utility fee to insure that sufficient funds are being collected to fund the MS4 requirements

Location(s) in SWPPP of detailed information relating to this BMP:

The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Number of revised and new ordinances adopted
- Stormwater utility fund operating in the black

**\*Timeline/Implementation Schedule:**

- 2007-8 Assign the responsibility
- 2008-9 Enact ordinance prohibiting the modification
- 2009-10 Review and amend development standards
- 2009-11 Review and adjust stormwater utility fees

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

**Unique BMP Identification Number:** 5b-1

**\*BMP Title:** 5b-1 - Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment

**\*BMP Description:**

- Adopt ordinance with provisions to regulate runoff from development and redevelopment
- Review existing BMP's and evaluate their effectiveness
- Develop a regulatory program to penalize those who remove alter or modify BMP's which diminish their effectiveness

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Review current ordinance language.
- Draft City ordinance.
- Complete public hearing notice.
- Document attendance at public hearing.
- Document public input with regard to the adequacy of the ordinance, whether written or oral opinion.
- Adjust the ordinance according to comments and as directed by the City Council.
- Adopt post construction storm water management ordinance.
- Track implemented BMPs as outlined by ordinance
- Number of BMP's allowed for the character of development / redevelopment

**\*Timeline/Implementation Schedule:**

- 2007-8 Information gathering on model and existing ordinances.
- 2007-8 Draft of post construction storm water management ordinance.
- 2007-8 Public hearing for public input on post construction storm water management ordinance.
- 2008 BY JUNE 30, 2008, adoption of the post construction storm water management ordinance.
- 2009-11 Monitoring of fines levied by implementation of post construction storm water management ordinance.

**Specific Components and Notes:**

- In the first two years of permit coverage, a post construction storm water management ordinance will be drafted.
- A public notice will be completed a minimum of 30 days prior to the scheduled public hearing.
- The public hearing will solicit public opinion with regard to the adequacy of the ordinance.
- Interested persons will be given a reasonable opportunity to make oral statements regarding the ordinance.
- All timely and relevant comments will be considered in adjusting the ordinance.
- Adjustments will be made to the ordinance according to the public comment and as directed by the Council.

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 5-Post-Construction Stormwater Management In  
New Development And Redevelopment

**Unique BMP Identification Number:** 5b-2

<b>*BMP Title:</b>	5b-2 - Verify enforcement options with private utilities <i>This BMP was added by the MS4..</i>				
<b>*BMP Description:</b>	<p>One element of development disturbance is that contributed during the installation of private utilities. Often this is performed after the developer's contractor is complete. The City will monitor the compliance of the private utility companies with our Right of Way Ordinance and adjust the ordinance as required.</p> <p>Location(s) in SWPPP of detailed information relating to this BMP: The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</p>				
<b>*Measurable Goals:</b>	<ul style="list-style-type: none"> <li>● Review compliance with ROW Ordinance.</li> </ul>				
<b>*Timeline/Implementation Schedule:</b>	<ul style="list-style-type: none"> <li>● Review complete by 2008</li> </ul>				
<b>Specific Components and Notes:</b>	<ul style="list-style-type: none"> <li>● ROW Ordinance</li> </ul>				
<b>*Responsible Party for this BMP:</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border-right: 1px solid black; padding-right: 10px;">                 Name: Brad DeWolf                  Department: Engineering                  Phone: 612-756-1032                  E-mail: bradde@bolton-menk.com             </td> <td style="width: 33%; border-right: 1px solid black; padding-right: 10px;">                 Mike Goebel                  Public Works                  763.263.2107                  763.263.0133 fax                  mike@ci.big-lake.mn.us             </td> <td style="width: 33%; padding-left: 10px;">                 Scott Johnson                  Administration                  763.263.2107                  763.263.0133 fax                  scott@ci.big-lake.mn.us             </td> </tr> </table>		Name: Brad DeWolf Department: Engineering Phone: 612-756-1032 E-mail: bradde@bolton-menk.com	Mike Goebel Public Works 763.263.2107 763.263.0133 fax mike@ci.big-lake.mn.us	Scott Johnson Administration 763.263.2107 763.263.0133 fax scott@ci.big-lake.mn.us
Name: Brad DeWolf Department: Engineering Phone: 612-756-1032 E-mail: bradde@bolton-menk.com	Mike Goebel Public Works 763.263.2107 763.263.0133 fax mike@ci.big-lake.mn.us	Scott Johnson Administration 763.263.2107 763.263.0133 fax scott@ci.big-lake.mn.us			

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

**Unique BMP Identification Number:** 5c-1

<b>*BMP Title:</b> 5c-1 - Long-term Operation and Maintenance of BMPs
<b>*BMP Description:</b> <ul style="list-style-type: none"><li>● Create a database with sites of all BMP's listed with dates of inspections, evaluations, and digital photos</li><li>● Assign responsibility to maintain the database to specific position in the organization - include it in their job description</li></ul> Location(s) in SWPPP of detailed information relating to this BMP: <ul style="list-style-type: none"><li>● The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP</li></ul>
<b>*Measurable Goals:</b> <ul style="list-style-type: none"><li>● Inventory structural runoff controls</li><li>● Establish and implement a preventive maintenance schedule for all structures</li><li>● Inspect permanent storm water control structures annually</li></ul>
<b>*Timeline/Implementation Schedule:</b> <ul style="list-style-type: none"><li>● 2007-11 Inventory existing runoff controls</li></ul>
<b>Specific Components and Notes:</b> <ul style="list-style-type: none"><li>● Develop a program for inspection and maintenance of storm water control structures</li><li>● Responsibilities for maintenance of database should not be a rotating task or a non-priority</li></ul>
<b>*Responsible Party for this BMP:</b> <p>Name: Mike Goebel Department: Public Works Phone: 763.263.2107 fax 763.263.0133 E-mail: mike@ci.big-lake.mn.us</p>

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**Table of Best Management Practices (BMP's) Identified**  
**6-POLLUTION PREVENTION/GOOD HOUSEKEEPING**

<b>6a-1 - Municipal Operations and Maintenance Program .....</b>	<b>2</b>
<b>6a-2 - Street Sweeping** .....</b>	<b>3</b>
<b>6a-3 - Examine mechanisms to fund the stormwater program.....</b>	<b>4</b>
<b>6b-2 - Annual Inspection of All Structural Pollution Control Devices.....</b>	<b>5</b>
<b>6b-3 - Inspection of a Minimum of 20 percent of the MS4 Outfalls, Sediment Basins and Ponds Each Year on a Rotating Basis.....</b>	<b>6</b>
<b>6b-4 - Annual Inspection of All Exposed Stockpile, Storage and Material Handling Areas.....</b>	<b>7</b>
<b>6b-5 - Inspection Follow-up Including the Determination of Whether Repair, Replacement, or Maintenance Measures are Necessary and the Implementation of the Corrective Measures .....</b>	<b>8</b>
<b>6b-6 - Record Reporting and Retention of All Inspections and Responses to the Inspections .....</b>	<b>9</b>
<b>6b-7 - Evaluation of Inspection Frequency .....</b>	<b>10</b>
<b>6c-1 - Compliance with Approved Current and Future TMDL's .....</b>	<b>11</b>
<b>6c-2 - Minimize or Avoid Impacts on Current and Future Source Water Protection Zones (a.k.a. Wellhead Protection). <i>This BMP was added by the MS4.</i> .....</b>	<b>12</b>

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6a-1

**\*BMP Title:** 6a-1 - Municipal Operations and Maintenance Program

**\*BMP Description:**

- A long-term operation and maintenance program will be developed and implemented to minimize the discharge of pollutants from the MS4 outfalls.
- Establish a clear line of authority and responsibility for compliance with this SWPPP. If possible, make it a separate responsibility from other maintenance tasks of city equipment and infra structure.
- Train maintenance personnel on importance of performing good housekeeping as a part of every day's activities
- Build salt maintenance facility

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Keep records of all inspections and maintenance measures.
- Submit inspection and maintenance records with annual report.

**\*Timeline/Implementation Schedule:**

- 2007-8 Review models of long-term operation and maintenance programs from other MS4's
- 2008-9 Draft long-term operation and maintenance program
- 2008-9 Adopt long-term operation and maintenance program
- 2009-11 Perform inspections and maintenance as outlined.
- 2010 Build salt maintenance facility

**Specific Components and Notes:**

- Acquire a consistent inspection, maintenance and documentation through training.
- Maintain a log of all training received by MS4 personnel
- Include a discussion of training needs and accomplishments in annual reviews
- Submit inspection maintenance documentation annually with SWPPP annual report

**\*Responsible Party for this BMP:**

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Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6a-2

**\*BMP Title:** 6a-2 - Street Sweeping

**\*BMP Description:**

- Minimum twice per year sweep all streets
- Target specific areas for more frequent street sweeping. Also indicate the reason for selecting the specific target area and how the frequency differs.
- Require street sweeping as a condition on all soil disturbing building permits issued.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Total length of pavement swept.
- Number of building permits issued with required street sweeping
- Number of tons of material removed each sweeping scheduled

**\*Timeline/Implementation Schedule:**

- 2007-8 Develop a street sweeping plan and schedule
- 2008-9 Implement the plan
- 2008-9 Develop the building permit sweeping requirements
- 2009-10 Implement the building permit requirements

**Specific Components and Notes:**

- Frequency of street sweeping events, including the time(s) of year that it will be conducted
- Type of street sweeping equipment used:
- Target areas for more frequent street sweeping, if applicable. Also indicate the reason for selecting the specific target area and how the frequency differs. Sweep the roads around the lakes 3 times per year
- Overview of street sweeping waste management plan

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6a-3

<p><b>*BMP Title:</b> 6a-3 - Examine mechanisms to fund the stormwater program. <i>This BMP was added by the MS4.</i></p>														
<p><b>*BMP Description:</b></p> <ul style="list-style-type: none"> <li>• Continue operating the City's stormwater utility</li> </ul> <p>Location(s) in SWPPP of detailed information relating to this BMP: The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP.</p>														
<p><b>*Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• Recommendations received by mid year 2007</li> <li>• Implementation of recommendations by January, 2008</li> </ul>														
<p><b>*Timeline/Implementation Schedule:</b></p> <ul style="list-style-type: none"> <li>• Committee formed by January 2007</li> </ul>														
<p><b>Specific Components and Notes:</b></p>														
<p><b>*Responsible Party for this BMP:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;">Name: Brad DeWolf</td> <td style="width: 33%; padding: 5px;">Scott Johnson</td> <td style="width: 33%; padding: 5px;">Mike Goebel</td> </tr> <tr> <td style="padding: 5px;">Department: Engineering</td> <td style="padding: 5px;">Administration</td> <td style="padding: 5px;">Public Works</td> </tr> <tr> <td style="padding: 5px;">Phone: 612-756-1032</td> <td style="padding: 5px;">763.263.2107 763.263.0133 fax</td> <td style="padding: 5px;">763.263.2107 763.263.0133 fax</td> </tr> <tr> <td style="padding: 5px;">E-mail: bradde@bolton-menk.com</td> <td style="padding: 5px;">scott@ci.big-lake.mn.us</td> <td style="padding: 5px;">mike@ci.big-lake.mn.us</td> </tr> </table>			Name: Brad DeWolf	Scott Johnson	Mike Goebel	Department: Engineering	Administration	Public Works	Phone: 612-756-1032	763.263.2107 763.263.0133 fax	763.263.2107 763.263.0133 fax	E-mail: bradde@bolton-menk.com	scott@ci.big-lake.mn.us	mike@ci.big-lake.mn.us
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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-2

**\*BMP Title:** 6b-2 - Annual Inspection of All Structural Pollution Control Devices

**\*BMP Description:**

- In the spring inspect all structural BMPs, including, as appropriate:
  - Storage practices such as wet ponds and extended-detention outlet structures
  - Filtration practices such as grassed swales, bioretention cells, sand filters, and filter strips
  - Infiltration practices such as infiltration basins and trenches
- Initiate appropriate maintenance efforts to restore the effectiveness of the structures
- Once every ten years measure and document the volume of sediment build up in detention and retention ponds
- Inspection will include photographs to illustrate the condition of the device

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Report inspection each structural BMP
- Ratio of each type requiring maintenance

**\*Timeline/Implementation Schedule:**

- 2007-11 Maintain annual inspections

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-3

**\*BMP Title:** 6b-3 - Inspection of a Minimum of 20 percent of the MS4 Outfalls, Sediment Basins and Ponds Each Year on a Rotating Basis

**\*BMP Description:**

- In the spring inspect 20% of all outfalls
- Initiate appropriate maintenance
- All inspections include digital photographs to be included in the database

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Number of outfalls inspected each year
- Completion of updating the database

**\*Timeline/Implementation Schedule:**

- 2007 Identify locations of all outfalls requiring inspection & develop a schedule
- 2008-11 Conduct the inspections

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel

Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-4

**\*BMP Title:** 6b-4 - Annual Inspection of All Exposed Stockpile, Storage and Material Handling Areas

**\*BMP Description:**

- Create a procedure and an inventory to register and track stockpile sites, inspection results
- Add to exterior building permit request forms a question where soil materials will be stockpiled and the BMP to be used to prevent erosion

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Number of permanent and temporary stockpiles of record (registered and on building permits)
- Minimize the time required for inspection
- Actions recommended for non-compliance

**\*Timeline/Implementation Schedule:**

- 2009 Conduct an inspection of all sites as they register
- 2007 & ongoing Conduct routine annual inspections

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel

Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-5

**\*BMP Title:** 6b-5 - Inspection Follow-up Including the Determination of Whether Repair, Replacement, or Maintenance Measures are Necessary and the Implementation of the Corrective Measures

**\*BMP Description:**

- Maintain a log of all non-compliance occurrences, together with the final resolution of the situation, cost, time of year, contractor, and engineer if necessary. Each issue filed will be given a tracking number. All correspondence and communication will refer to that number. Each should include the individual it was assigned to with estimated completion date.
- Use the database to create tickler reports of incomplete or unresolved issues
- When the inspection reveals that an issue is resolved, mark it in the database and report to the reporting source, as appropriate

**Location(s) in SWPPP of detailed information relating to this BMP:**

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Number of unresolved situations
- Average turn around time for resolution
- Cost of compliance, if known.

**\*Timeline/Implementation Schedule:**

- 2009 Establish the database to log events.
- 2010 Implement inspection and resolution process
- 2010 & on going Continue using the database to track performance

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel

Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-6

**\*BMP Title:** 6b-6 - Record Reporting and Retention of All Inspections and Responses to the Inspections

**\*BMP Description:**

- Develop standardized forms for the inspectors to use
- A spreadsheet or database should be used to log all reports and communication (incoming and outgoing)

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Compliance with schedule for implementation
- Number of training opportunities utilized

**\*Timeline/Implementation Schedule:**

- 2007 Develop standardized forms
- 2007-8 Train inspectors
- 2008-11 Initiate and maintain recordkeeping program

**Specific Components and Notes:**

- Quantitative evaluations based on some measurable feature of the BMP or the breach should be employed

**\*Responsible Party for this BMP:**

Name: Mike Goebel

Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6b-7

**\*BMP Title:** 6b-7 - Evaluation of Inspection Frequency

**\*BMP Description:**

- The frequency of conducting inspections is somewhat dependent on the diligence of the various members of the community in practicing and maintaining the BMP's.
- At the time of a new inspection, the site should be scored for compliance with the BMP. If it found to be non-compliant, the extent of work required to bring it into compliance should be logged as a separate running total for each BMP. BMP's with higher running totals may warrant a more frequent inspection cycle - apparently that BMP is easy violated.
- If similar items fall out of compliance, greater attention should be placed on proper installation in the first place or some way of improved maintenance.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Total number of sites inspected on an annual basis
- Scoring totals for each BMP

**\*Timeline/Implementation Schedule:**

- 2007-8 Develop scoring criteria for BMP's and begin the evaluation
- 2009-10 Ongoing evaluation to continue. Make adjustments as necessary

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel

Department: Public Works

Phone: 763.263.2107 fax 763.263.0133

E-mail: mike@ci.big-lake.mn.us

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## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6c-1

**\*BMP Title:** 6c-1 - Compliance with Approved Current and Future TMDL's  
*This BMP was added by the MS4.*

**\*BMP Description:**

- Periodically, in the future Total Maximum Daily Loads (TMDL) will be approved that address specific pollutants along specific reaches of river. These studies will establish the TMDL for the stream and allocate the load among the various sources within the watershed. The TMDL research will also specify tasks required for each MS4 community.
- Upon receipt of instructions, the SWPPP will be modified accordingly.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Keep records of all guidance materials received and adjustments made.

**\*Timeline/Implementation Schedule:**

- 2007-11 Receipt of new approved TMDL's will occur throughout the permit period and changes will be necessary

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name:	Mike Goebel	Brad DeWolf	Scott Johnson
Department:	Public Works	Engineering	Administration
Phone:	763.263.2107 763.263.0133 fax	612-756-1032	763.263.2107 763.263.0133 fax
E-mail:	mike@ci.big-lake.mn.us	bradde@bolton-menk.com	scott@ci.big-lake.mn.us

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

## BMP Summary Sheet

**MS4 Name:** Big Lake

**Minimum Control Measure:** 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

**Unique BMP Identification Number:** 6c-2

**\*BMP Title:** 6c-2 - Minimize or Avoid Impacts on Current and Future Source Water Protection Zones (a.k.a. Wellhead Protection). *This BMP was added by the MS4.*

**\*BMP Description:**

- The City must maintain due vigilance over any public water supply in the vicinity with regard to the assignment or extension of any Source Water Protection Area.
- This involves all public water suppliers (PWS) including neighboring cities, mobile home parks, townships, etc.
- If a protection area is established; the City must examine its discharges in the area, including the downstream flow direction, and take the necessary actions to secure the water supply, when necessary.

Location(s) in SWPPP of detailed information relating to this BMP:

- The information included or referenced on this Summary Sheet is intended to meet all SWPPP requirements for this BMP

**\*Measurable Goals:**

- Keep records of all protection areas defined and adjustments made.
- Maintain a record of all changes made in the SWPPP.

**\*Timeline/Implementation Schedule:**

- 2007-11 Annually query neighboring public water supplies for the defined boundaries of their source water protection areas. Investigate the any conflicts and negotiate acceptable solutions.

**Specific Components and Notes:**

- 

**\*Responsible Party for this BMP:**

Name: Mike Goebel	Brad DeWolf	Scott Johnson
Department: Public Works	Engineering	Administration
Phone: 763.263.2107 763.263.0133 fax	612-756-1032	763.263.2107 763.263.0133 fax
E-mail: mike@ci.big-lake.mn.us	bradde@bolton-menk.com	scott@ci.big-lake.mn.us

*\*Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

**SWPPP IMPLEMENTATION SCHEDULE**  
**CITY OF BIG LAKE**

BMP	2007	2008	2009	2010	2011
<b>PUBLIC EDUCATION AND OUTREACH</b>					
1a-1 Distribute Educational Materials	2007-8 Begin attendance at community events and newsletter articles				
		2008 Post materials and create links on City web site			
			2009 Approach school district on including stormwater issues in course material		
1b-1 Implement an Education Program	2007 Establish ongoing annual review				
	2007-8 Begin with materials in utility bills, literature racks, attendance at community events				
		2008 Web accesses active			

**SWPPP IMPLEMENTATION SCHEDULE**

**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
1c-1 Education Program: Public Education and Outreach		2008-9 Community access television publications	2009-10 Approach school district on including stormwater issues in course material		
1c-2 Education Program: Public Participation	2007 Approach community groups, scout groups and elementary schools for opportunities to speak	2008-11 Annual review	2009-10 Approach school system for inclusion in curriculum		
		2008-9 Approach the organizers of the Academic Challenge competition in the schools to include questions on stormwater and environment for school age children			

**SWPPP IMPLEMENTATION SCHEDULE**

**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Ic-3 Education Program: Illicit Discharge Detection and Elimination	2007-8 Initiate seasonal required training on potential illicit discharges during the upcoming season – All MS4 staff		2009 Approach high school chemistry and biology instructors for opportunities to reach students		
	2007-8 Annual formal training session for key staff members				
	2007-11 Attend local and regional training when presented				
Ic-4 Education Program: Construction Site Run-off Control	2007-8 Provide materials with building permits	2008-11 Hold annual seminars for building contractors and developers to explain expectations			

**SWPPP IMPLEMENTATION SCHEDULE**  
**CITY OF BIG LAKE**

BMP	2007	2008	2009	2010	2011
	2007-8 Educate building and utility inspectors on evaluating the operation of structural BMP's – reminder training to be held each spring				
1c-5 Education Program: Post-Construction Stormwater Management in New Development and Redevelopment	2007-8 Initiate spring seminar for landscape firms and nurseries on the requirements and limits of MS4 compliance				
	2007-11 Seek speaking opportunities with realtor association to describe the procedures that must be met				
1c-6 Education Program: Pollution Prevention/Good Housekeeping for Municipal Operations	2007 Prepare training materials				

**SWPPP IMPLEMENTATION SCHEDULE**  
**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
		2008 Begin seasonal training on activities inclined to release pollution during the coming season			
			2009-10 Begin inviting vendors to present products		
<b>1d-1 Coordination of Education Program</b>	2007 Identify other MS4 communities in the vicinity 2007-8 Inquire of other MS4's which media outlets they may use in their implementation				
		2008 Select best presenters from each MS4 for each audience and coordinate			
<b>1e-1 Annual Public Meeting</b>	2007 Begin annual meetings - Meeting scheduled annually sometime in January or February throughout the term of the permit				

2-PUBLIC PARTICIPATION/INVOLVEMENT

# SWPPP IMPLEMENTATION SCHEDULE

## CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
2a-1 Comply with Public Notice Requirements	2007-11 Continuing throughout permit period				
2b-1 Solicit Public Input and Opinion on the Adequacy of the SWPPP h	2007-11 Continuing throughout permit period				
2c-1 Consider Public Input		2008-9 Continuing for permit period			
<b>SEWER DISCHARGE PERMIT DETERMINATION AND DETERMINATION</b>					
3a-1 Storm Sewer System Map	2007 Continue printing the 11 x 17 books for maintenance vehicles				
	2007 Continue retrieving the books and updating the maps annually				
		2008 Begin capturing the rims, inverts and GPS locations			
3a-2 Define Drainage Areas	2007-8 Begin calculating sub areas and determining the amount of impervious cover				
		2008-9 Entry into database			

**SWPPP IMPLEMENTATION SCHEDULE**

**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>3b-1 Regulatory Control Program</b>	2007-8 Information gathering on model and existing ordinances	2008 Drafting of illicit discharge ordinance 2008 Public hearing for public input on illicit discharge ordinance			
		2008 Adoption of the illicit discharge ordinance	2009-2011 Monitoring of fines levied by implementation of illicit discharge ordinance		
<b>3c-1 Illicit Discharge Detection and Elimination Plan</b>	2007-8 Information gathering on model and existing ordinances	2008-9 Drafting of illicit discharge ordinance 2008-9 Public hearing for public input on illicit discharge ordinance			
			2009 Adoption of the illicit discharge ordinance		

# SWPPP IMPLEMENTATION SCHEDULE

## CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
				2010-11 Monitoring of fines levied by implementation of illicit discharge ordinance	
3d-1 Public and Employee Illicit Discharge Information Program	2007-8+ Training will be conducted with the appropriate staff.				
3e-1 Identification of Non Stormwater Discharges and Flows		2008-9 Begin surveying commercial areas of the city for snow pile storage and notify property owners			
			2009-10 Extend the survey and notification to multifamily areas		
<b>4- CONSTRUCTION SITE STORMWATER RUNOFF CONTROL</b>					
4a-1 Ordinance or other Regulatory Mechanism	2007-8 Information gathering on model and existing ordinances				
		2008-9 Drafting of construction site storm water runoff control ordinance			
		2008 Public hearing for public input on construction site storm water runoff control ordinance			

## SWPPP IMPLEMENTATION SCHEDULE

### CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
		2008-9 Adoption of the construction site storm water runoff control ordinance			
		2008-11 Implementation of penalties			
4b-1 Construction Site Implementation of Erosion and Sediment Control BMPs	2007-8 Plan review must include evaluating BMP 's specified in SWPPP for the project				
		2008 Attempt the formation of the Coordination-Team			
	2007-11 Annual BMP Workshop				
		2008-11 Add five (5) new BMPs that the BMP Review Board feels are justifiable.			
4c-1 Waste Controls for Construction Site Operators	2007-8 Identify hazardous materials and storage issues				
		2008-9 Develop pocket guide and other education tools			

## SWPPP IMPLEMENTATION SCHEDULE

### CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
			2009-11 Present information annually to contractors and suppliers		
4d-1 Procedure for Site Plan Review	2007 Develop criteria and educate staff for site plan reviews				
	2007-8 For new development and municipal infrastructure				
		2008-9 For building permit site plan review			
4e-1 Establishment of Procedures for the Receipt and Consideration of Stormwater Noncompliance	2007-8 Identify all actions that could result in noncompliance				
		2008-9 Draft procedure for non-compliance issue resolution			
			2009-10 Initiate non-compliance procedures and enforcement		

## SWPPP IMPLEMENTATION SCHEDULE

### CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
4f-1 Establishment of Procedures for Site Inspections and Enforcement	2007 Provide training for building code officials				
	2007-8 Begin implementing the SWPPP requirement for all sites over 1 acre				
			2009-10 Initiate inspection and enforcement program		
<b>5101-CONSTRUCTION STORMWATER MANAGEMENT AND ENFORCEMENT</b>					
5a-1 Development and Implementation of Structural and/or Non-structural BMPs	2007-8 Assign the responsibility				
		2008-9 Enact ordinance prohibiting the modification			
			2009-10 Review and amend development standards		
			2009-11 Review and adjust stormwater utility fees		

**SWPPP IMPLEMENTATION SCHEDULE**  
**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
5a-4 Review and Adjust Existing Ordinances and Development Standards	2007 Identify all ordinances and policy manuals that require change	2008-9 Draft, pass and implement the changes necessary			
5b-1 Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment	2007-8 Information gathering on model and existing ordinances				
	2007-8 Draft of post construction storm water management ordinance				
	2007-8 Public hearing for public input on post construction storm water management ordinance				

## SWPPP IMPLEMENTATION SCHEDULE

### CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
		2008-11 Monitoring of fines levied by implementation of post construction storm water management ordinance			
5b-2 Verify enforcement options with private utilities		2008 Review complete			
5c-1 Long-term Operation and Maintenance of BMPs	2007-11 Inventory existing runoff controls				
<b>POLLUTION PREVENTION/GOOD HOUSEKEEPING</b>					
6a-1 Municipal Operations and Maintenance Program	2007-8 Review models of long-term operation and maintenance programs from other MS4's				
		2008-9 Draft long-term operation and maintenance program			
		2008-9 Adopt long-term operation and maintenance program			

## SWPPP IMPLEMENTATION SCHEDULE

### CITY OF BIG LAKE

BMP	2007	2008	2009	2010	2011
			2009-11 Perform inspections and maintenance as outlined		
				2010 Build salt maintenance facility	
6a-2 Street Sweeping	2007-8 Develop a street sweeping plan and schedule				
		2008-9 Implement the plan			
		2008-9 Develop the building permit sweeping requirements			
			2009-10 Implement the building permit requirements		
6a-3 Examine Mechanisms to Fund the Stormwater Program	2007 Committee formed by January				
6b-2 Annual Inspection of All Structural Pollution Control Devices	2007-11 Maintain annual inspections				

**SWPPP IMPLEMENTATION SCHEDULE**

**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
6b-3 Inspection of a Minimum of 20 percent of the MS4 Outfalls, Sediment Basins and Ponds Each Year on a Rotating Basis	2007 Identify locations of all outfalls requiring inspection & develop a schedule				
6b-4 Annual Inspection of All Exposed Stockpile, Storage and Material Handling Areas		2008-11 Conduct the inspections			
			2009 Conduct an inspection of all sites as they register		
				2010 & ongoing Conduct routine annual inspections	

**SWPPP IMPLEMENTATION SCHEDULE**  
**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
6b-5 Inspection Follow-up Including the Determination of Whether Repair, Replacement, or Maintenance Measures are Necessary and the Implementation of the Corrective Measures			2009 Establish the database to log events	2010 Implement inspection and resolution process 2010 & on going Continue using the database to track performance	
6b-6 Record Reporting and Retention of All Inspections and Responses to the Inspections	2007 Develop standardized forms 2007-8 Train inspectors	2008-11 Initiate and maintain record keeping program			

**SWPPP IMPLEMENTATION SCHEDULE**

**CITY OF BIG LAKE**

<b>BMP</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
6b-7 Evaluation of Inspection Frequency	2007-8 Develop scoring criteria for BMP's and begin the evaluation				
6c-1 Compliance with Approved Current and Future TMDL's	2007-11 Receipt of new approved TMDL's will occur throughout the permit period and changes will be necessary		2009-10 Ongoing evaluation to continue. Make adjustments as necessary		
6c-2 Minimize or Avoid Impacts on Current and Future Source Water Protection Zones	2007-11 Annually query neighboring public water supplies for the defined boundaries of their source water protection areas. Investigate any conflicts and negotiate acceptable solutions				



# ***APPENDICES***

***HISTORIC PLACES LIST***

***ACRONYMS***

***GLOSSARY***

***EDUCATIONAL PROGRAM TERMS***

*HISTORIC PLACES*

No entries exist in the National Register of Historic Places for Big Lake, Minnesota.

## ***ACRONYMS***

As the regulatory world develops, it becomes increasingly difficult to remember acronyms. The following list has been prepared as part of the League of Minnesota Cities (LMC) NPDES Guide Plan and contains acronyms used within the NPDES permit document, the LMC Guide Plan Material and this Storm Water Pollution Prevention Plan.

- BAT** .....Best Available Technology Economically Achievable (applies to non-conventional and toxic pollutants)
- BCT** .....Best Conventional Pollutant Control Technology (applies to conventional pollutants)
- BMP** .....Best Management Practice
- BPJ** .....Best Professional Judgment
- BPT** .....Best Practicable Control Technology Currently Available (generally applies to conventional pollutants and some metals)
- CFR** .....Code of Federal Regulations
- COD** .....Chemical Oxygen Demand
- CSO** .....Combined Sewer Overflow
- CWA** .....Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972)
- CZARA** ...Coastal Zone Act Reauthorization Amendments
- D.O.** .....Dissolved Oxygen
- DMR** .....Discharge Monitoring Report
- ELG** .....Effluent Limitations Guidelines
- EPA** .....Environmental Protection Agency
- FR** .....Federal Register
- GIS** .....Geographic Information Systems
- HAZMAT** Hazardous Material
- LMC** .....The League of Minnesota Cities
- MCD** .....Minor Civil Division
- MCM**.....Minimum Control Measure
- MEP** .....Maximum Extent Practicable
- MEPA** .....Minnesota Environmental Policy Act
- MPCA** .....Minnesota Pollution Control Agency
- MS4** .....Municipal Separate Storm Sewer System
- MSGP** .....Multi Sector General Permit

**NEPA** .....National Environmental Policy Act  
**NOI** .....Notice of Intent  
**NOT** .....Notice of Termination  
**NPDES** ....National Pollutant Discharge Elimination System  
**NPS** .....Non-point Source

**O&M** .....Operation and Maintenance  
**OW** .....Office of Water  
**OWM** .....Office of Wastewater Management  
**ORVW** ....Outstanding Resource Value Waters

**PA** .....Permitting Authority  
**POTW** ....Publicly Owned Treatment Works

**SIC** .....Standard Industrial Classification  
**SWPPP** ....Storm Water Pollution Prevention Program

**TMDL** .....Total Maximum Daily Load  
**TSS** .....Total Suspended Solids

**UA** .....Urbanized Area  
**USEPA** ....United States Environmental Protection Agency  
**USGS** .....United States Geological Survey

## ***GLOSSARY***

The following glossary has been prepared as part of the League of Minnesota Cities (LMC) NPDES Guide Plan and contains terms used within the NPDES permit document, the LMC Guide Plan Material, and this Storm Water Pollution Prevention Plan. Although some specific terms have been added from the Minnesota Pollution Control Agency (MPCA) pertaining to the general permit requirements, most came directly from the Environmental Pollution Control Agency (EPA) Compliance Assistance Guide.

**Best Available Treatment (BAT)/Best Control Technology (BCT):** A level of technology based on the very best (state of the art) control and treatment measures that have been developed or are capable of being developed and that are economically achievable within the appropriate industrial category.

**Best Management Practices (BMPs):** Activities or structural improvements that help reduce the quantity and improve the quality of storm water runoff. BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Clean Water Act (Water Quality Act):** (formerly the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972). Public law 92-500; 33 U.S.C. 1251 et seq.; legislation which provides statutory authority for the NPDES program. Also known as the Federal Water Pollution Control Act.

**Common Plan of Development or Sale:** Means a contiguous area where multiple separate and distinct construction activities are planned to occur at different times on different schedules under one plan, e.g., a housing development of five ¼ acre lots (40 CFR Sec. 122.26 (b)(15)(i)).

**Conveyance:** The process of water moving from one place to another.

**Discharge:** The volume of water (and suspended sediment if surface water) that passes a given location within a given period of time.

**Discharge Monitoring Report:** The required annual report to be submitted by an MS4.

**Discretionary MS4:** A small MS4 who is required to comply with the NPDES Phase II permit due to the permitting agency's (MPCA's) designated criteria.

**Dry Weather Flow:** Continued flow through the storm sewer system drains during dry weather conditions that usually indicate illicit connections into the storm sewer system.

**Erosion:** When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

**Excavation:** The process of removing earth, stone, or other materials from land.

**General Permit:** A permit issued under the NPDES program to cover a certain class or category of storm water discharges whose operations, emissions, discharges, or facilities are the same or substantially similar. These permits reduce the administrative burden of permitting storm water discharges.

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

**Illicit Connection:** All non storm water flow that contains pollutants as classified by the Minnesota Pollution Control Agency.

**Industrial Activity:** Any activity that is directly related to manufacturing, processing, or raw materials storage at an industrial plant.

**Large Municipal Separate Storm Sewer System (MS4):** An MS4 located in an incorporated place or county with a population of 250,000 or more, as determined by Appendix A Page A-3 Storm Water Phase II Compliance Assistance Guide the latest U.S. Census.

**Light Manufacturing Facilities:** Described under Category (xi) of the definition of "storm water discharges associated with industrial activity." [40 CFR 122.26(b)(14)(xi)] Under the Phase I NPDES Storm water Program, these facilities were eligible for exemption from storm water permitting requirements if certain areas and activities were not exposed to storm water. As a result of the Phase II Final Rule, these facilities must now certify to a condition of no exposure.

**Mandatory MS4:** A small MS4 who is required to comply with the NPDES Phase II permit due to the criteria set by the USEPA. Any publicly owned MS4 with a population greater than 10,000 located in an UA (Urbanized Area).

**Maximum Extent Practicable (MEP):** A standard for water quality protection that applies to all MS4 operators regulated under the NPDES Storm water Program. Since no precise definition of MEP exists, it allows for flexibility on the part of MS4 operators as they develop and implement their programs.

**Measurable Goals:** Goals required for the NPDES Phase II permit under each Minimum Control Measure and intended to gauge permit compliance and program effectiveness.

**Medium Municipal Separate Storm Sewer System (MS4):** MS4 located in an incorporated place or county with a population of 100,000 or more but less than 250,000, as determined by the latest U.S. Census.

**Minimum Control Measure:** If coverage is obtained under a general permit or an individual permit under the Phase II regulations, the operator of a regulated small MS4 is required to implement a storm water management program that includes, at a minimum, the six minimum control measures.

**Municipal Separate Storm Sewer System (MS4):** A publicly-owned conveyance or system of conveyances that discharges to waters of the U.S. or waters of the State, and is designed or used for collecting or conveying storm water, is not a combined sewer, and is not part of a publicly-owned treatment works (POTW).

**No exposure:** All industrial materials or activities that are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.

**Non-authorized States:** Any State that does not have the authority to regulate the NPDES Storm water Program.

**Non-point Source (NPS) Pollutants:** Pollutants from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water.

**Notice of Intent (NOI):** An application to notify the permitting authority of a facility's intention to be covered by a general permit; exempts a facility from having to submit an individual or group application.

**NPDES (National Pollutant Discharge Elimination System):** The name of the surface water quality program authorized by Congress as part of the 1987 Clean Water Act. This is EPA's program to control the discharge of pollutants to waters of the United States (see 40 CFR 122.2). In Minnesota, the MPCA is the permitting authority and also controls the discharge of pollutants to the waters of the State.

**O&M Expenditures:** The operating and maintenance costs associated with the continual workings of a project.

**Outfall:** The point where storm water discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

**Permitting Authority (PA):** The NPDES-authorized state agency or EPA regional office that administers the NPDES Storm water Program. PAs issue permits, provide compliance assistance, and inspect and enforce the program.

**Physically interconnected MS4:** This refers to an MS4 that is connected to a second MS4 in such a way that it allows for direct discharges into the second system.

**Point Source Pollutant:** Pollutants from a single, identifiable source such as a factory or refinery.

**Pollutant Loading:** The total quantity of pollutants in storm water runoff discharged to receiving waters.

**Regulated MS4:** Any MS4 covered by the NPDES Storm water Program (regulated small, medium, or large MS4s).

**Retrofit:** The modification of storm water management systems through the construction and/or enhancement of wet ponds, wetland plantings, or other BMPs designed to improve water quality.

**Runoff:** Surface water drainage or flood discharge that leaves an area as surface flow or as pipeline flow and can reach a channel or pipeline by either surface or sub-surface routes.

**Sanitary Sewer:** A system of underground pipes that carries sanitary waste or process wastewater to a treatment plant.

**Sediment:** Soil, sand, and minerals washed from land into water, usually after rain and snowmelt. Sediment can destroy fish-nesting areas and clog animal habitats. It can also cloud waters so that sunlight does not reach aquatic plants, predators cannot find prey, and water temperatures increase.

**Sheet flow:** The portion of precipitation that moves initially as diffuse overland flow in very shallow depths before eventually reaching a stream channel.

**Site Plan:** A graphical representation of a layout of buildings and facilities on a parcel of land.

**Site Runoff:** Any surface drainage or flood discharge that is released from a specified area.

**Small Municipal Separate Storm Sewer System (MS4):** Any MS4 that is not regulated under Phase I of the NPDES Storm water Program and Federally-owned MS4s.

**Stakeholder:** An entity that holds a special interest in an issue or program -- such as the storm water program -- since it is or may be affected by it.

**Standard Industrial Classification (SIC) Code:** A four-digit number, which is used to identify various types of industries.

**Storm Drain:** A slotted opening leading to an underground pipe or an open ditch intended to carry surface water runoff, such as a catch basin.

**Storm water Management:** Functions associated with planning, designing, constructing, maintaining, financing, and regulating the facilities (both constructed and natural) that collect, store, control, and/or convey storm water.

**Storm water Pollution Prevention Program (SWPPP):** A program to describe a process whereby an MS4 thoroughly evaluates potential pollutant sources and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in storm water runoff.

**Surface Water:** Water that remains on the surface of the ground, including rivers, lakes, reservoirs, streams, wetlands, impoundments, seas, estuaries, etc.

**Total Maximum Daily Load (TMDL):** The maximum amount of pollutants that can be released into a water body without adversely affecting the water quality.

**Tool Box:** A term to describe the activities and materials that EPA plans to perform/produce to facilitate implementation of the storm water program in an effective and cost-efficient manner. The eight components include: 1) fact sheets; 2) guidance documents; 3) menu of BMPs; 4) compliance assistance; 5) information clearing house; 6) training and outreach efforts; 7) technical research; and 8) support for demonstration projects.

**Urbanized Area (UA):** A Census Bureau determination of a central place (or places) and the adjacent densely settled surrounding territory that together have a minimum residential population of 50,000 people and a minimum average density of 1,000 people/square mile. This is a simplified definition of a UA, the full definition is very complex.

**Urban Runoff:** Storm water from urban areas, which tends to contain heavy concentrations of pollutants from urban activities.

**Watershed:** That geographical area which drains to a specified point on a watercourse, usually a confluence of streams or rivers (also known as drainage area, catchment, or river basin).

**Waters of the State:** All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

**Waters of the US:** All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide and all interstate waters including interstate wetlands. For a full description, visit the US Army Corps of Engineering website (40 CFR 122.2) at [www.usace.army.mil](http://www.usace.army.mil)

**Wet Weather Flows:** Flow that enters storm drains during rainstorms or wet weather events.

## ***EDUCATIONAL PROGRAM TERMS***

**Activity/Educational Activity:** Method used to produce changes in awareness, understanding, skills, and behavior in an audience.

**Activity Implementation Plan:** Provides details (e.g.: who, what, when) on how activities will be carried out.

**Audience/Target Audience:** Individuals or groups to whom education is directed. Audiences can often be divided into those who need to take action and those who can support action.

**Awareness:** Know that an issue or concern exists.

**Changes in Behavior:** Regular adoption of a preventive or corrective action.

**Educational Goal:** Information or an informed action that is desired for a given audience to know, be able to do, or actually be doing.

**Educational Program:** For this document, an overall educational effort which is made up of individual educational strategies.

**Educational Strategy:** For this document, an educational effort directed at a specific Minimum Control Measure.

**Measurable Goal:** Measuring educational goals can be difficult. How do you measure changes in knowledge of the public? A measurable goal is an educational goal that is practical for a Phase II program to measure.

**Skills/Abilities:** Using one's knowledge to effectively implement preventive or corrective actions.

**Understanding/Knowledge:** Understand the cause and effect of an issue or concern. Understand sufficiently to explain the issue or concern to others.