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MDEQ



*Small Municipal Separate Storm Sewer System  
(MS4) General Permit  
January 2017*

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**Public Education/Outreach**

The city of Pearl has identified four main areas to focus its public education/outreach efforts during this permit period. The areas were selected after evaluating the main pollutants the city has dealt with over the past permit period. The main pollutants over the past permit period were silt/sediment from construction sites, and sediment. The areas identified to be addressed are public awareness of the storm water management plan, storm drain marking in new construction, and storm water complaint response. Each of these items has been addressed by a BMP and the rationale is explained following each BMP table.

<b>BMP 1. Annual presentation of Storm Water Management Plan (SWMP) to Pearl Board of Alderman including updates on current storm water program items for public during a Board of Alderman Meeting and provide SWMP for public review and input</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
<b>Create annual presentation, promote public meeting, and provide SWMP and presentation on website.</b>	<b>Year 1</b>	<b>Annual presentation and post SWMP to website.</b>	<b>Number of presentations given.</b>
	<b>Year 2</b>	<b>Annual presentation</b>	
	<b>Year 3 &amp; Beyond</b>	<b>Annual presentation</b>	

BMP 1 addresses public awareness of the Storm Water Management Plan. The main goal of this BMP is making the public and current elected officials aware of the Storm Water Management Plan and what that plan does. The past few years have revealed that many citizens are unaware of the city's efforts to improve both storm water quality and management. It has also become apparent that many of the city officials outside of Community Development and Public Works are unaware of the storm water program and efforts. This BMP will give staff the opportunity to present the plan and status annually during a public meeting. At that same time staff will be able to highlight successes and issues that need to be addressed related to the plan. Additionally, the Storm Water Management Plan will be published on the city website. Public input will be welcomed during each presentation and on the website during the entire permit period.

BMP 2. The City will make annual visits to restaurants to determine if cooking oil is being disposed of properly			
Measurable Goals	Schedule		Evaluation Criteria
Identify personnel to create campaign. Develop campaign material. Distribute campaign materials via water bills, website, newsletters, and social media directed at residential home owners.	Year 1	Create campaign materials, establish website resource	1) Campaign created. 2) Number of water bill inserts sent out. 3) Number of newsletters sent out. 4) Number of social media pushes. 5) Number of website updates.
	Year 2	Distribute materials quarterly through multiple channels (water bill, newsletter, web, social media).	
	Year 3 & Beyond	Continue distribution of campaign, update campaign materials as need.	

BMP 2 addresses prevention of storm water pollution and sedimentation associated with improper disposal of cooking oil. The City will make annual visits to restaurants to determine if cooking oil is being disposed of properly and oil separators at truck fueling areas are being maintained. In addition, local governmental websites will also contain similar information. Topics may include water conservation practices, lawn and garden activities, proper disposal of household hazardous waste and trash management, and ways to become involved in the storm water program. Education material will be provided at workshops.

BMP 3. Require all new construction storm water drain inlets to be stenciled with drains to waterway marking prior to installation.			
Measurable Goals	Schedule		Evaluation Criteria
Require all new construction storm water drain inlets to be stenciled with drains to waterway marking prior to installation and	Year 1	Update ordinance to require marking prior to installation and implement during review.	All new construction inlets are marked.
	Year 2	Implement requirement during construction plan review.	

update ordinance to reflect the same.	Year 3 & Beyond	Implement requirement during construction plan review.	
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The third area of focus is the marking of storm drains to let the public know that the drains go directly to the city's waterways. While the focus is on the marking of existing drains in the public involvement section, as a policy the city will require all new construction drains to be marked prior to installation. In a community that grows as fast as Pearl, new subdivisions are a regular part of the storm water management program. The markings serve a great reminder to the public where the drain goes.

BMP 4. Encourage Public to Report Any Illicit Discharges, Illegal Dumping, Unlawful Use of Storm Drains and Use of Pollutants.			
Measurable Goals	Schedule		Evaluation Criteria
City personnel will respond to all complaints received and a report will be completed outlining the complaint and action needed.	Year 1	Train inspectors and respond to complaints.	1) Number of inspectors available.  2) Number of training opportunities.
	Year 2	Train inspectors and respond to complaints.	
	Year 3 & Beyond	Train inspectors and respond to complaints.	

The fourth area of focus is on complaint response. In the past few years the number of complaints received regarding erosion control, storm water runoff, and drainage concerns have increased drastically. Some of this increase is directly tied to education efforts that have empowered citizens to recognize issues. Building inspectors are trained and will continue to be trained to respond to these complaints, meet with those involved and assist them in coming up with a best management practice or practices needed to solve the problem.

Responsible Persons: The Public Education and Outreach program will be the responsibility of the Director of Community Development and his/her designees.

**Public Participation/Involvement**

The public participation and involvement program is a key component of the overall plan. The city of Pearl is focused on increasing public knowledge and support in the development process to minimize potential future challenges. The city is focusing on public participation/involvement efforts in three main areas; elected officials and public knowledge, citizens reporting, and drain marking outreach with civic groups, scouts, and others.

<b>BMP 1. Annual presentation of Storm Water Management Plan (SWMP) to Pearl Board of Alderman including updates on current storm water program items for public during a Board of Alderman Meeting and provide SWMP for public review on website.</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
<b>Create annual presentation, promote public meeting, and provide SWMP and presentation on website.</b>	<b>Year 1</b>	<b>Annual presentation and post SWMP to website.</b>	<b>Number of presentations given.</b>
	<b>Year 2</b>	<b>Annual presentation</b>	
	<b>Year 3 &amp; Beyond</b>	<b>Annual presentation</b>	

BMP 1 addresses the city’s desire to increase knowledge and support of the storm water program. The city believes that educating both public officials and the general public about the storm water program, current storm water issues, and the development process will minimize future challenges. The SWMP will be presented annually and as storm water issues occur throughout the permit period special issue specific presentations will be made. This information will be provided via the city website also.

BMP 2. Encourage Public to Report Any Illicit Discharges, Illegal Dumping, Unlawful Use of Storm Drains and Use of Pollutants.			
Measurable Goals	Schedule		Evaluation Criteria
City personnel will respond to all complaints received and a report will be completed outlining the complaint and action needed.	Year 1	Train inspectors and respond to complaints.	1) Number of inspectors available. 2) Number of training opportunities.
	Year 2	Train inspectors and respond to complaints.	
	Year 3 & Beyond	Train inspectors and respond to complaints.	

BMP 2 focuses on citizen involvement in reporting storm water related complaints. The city's main tool in identifying illicit discharge, dumping, and storm water issues is it's citizens. The city will make is easy for citizens to report storm water issues by phone, in person, or via website. An inspector will be made available to respond all complaints. The inspector will outline the complaint and actions needed to correct. The inspector will be available to meet with the violator to assist with BMP selection if appropriate. The inspector is also equipped to issue tickets and bring violators to court.

BMP 3. Marking of storm drains and stream clean up.			
Measurable Goals	Schedule		Evaluation Criteria
Volunteers and city personnel will gather at regular scheduled intervals to mark storm drains, clean and monitor streams and waterways.	Year 1	Continue annual installation of inlet markers.	Number of inlet markers installed.
	Year 2	Continue annual installation of inlet markers.	
	Year 3 & Beyond	Continue annual installation of inlet markers.	

BMP 3 focuses on the main public involvement portion of the program. The storm drain marking program was a very successful part of the prior permit program. It is the main way the general public is communicated the importance of protecting the drainage system from pollutants. Drain marking will be completed by civic groups, scouts, and others. These groups will be encouraged to "adopt" areas to implement the drain marking program. The markings serve a great reminder to the public that the drain is part of a bigger system.

Responsible Persons: The Post Construction Storm water program will be the responsibility of the Director of Public Works and his/her designees.



**Illicit Discharge Detection/Elimination**

The city of Pearl’s illicit discharge detection and elimination efforts will address non-storm water flows that discharge into receiving streams. The city of Pearl will implement BMPs that will involve citizens and city personnel in identifying and eliminating illicit discharges.

The City will also focus on the prevention of new illicit discharges to the storm water system by enforcing city ordinances and educating the public and city personnel. The BMP’s selected build on each other over the permit period to enable the city to more systemically and thoroughly screen for illicit discharge and prevent illicit discharge in new construction.

<b>BMP 1. Develop a storm sewer map to identify outfall locations along major drainage channels in the city of Pearl</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
<b>Maintain a map that depicts storm sewer outfall locations</b>	<b>Year 1</b>	<b>GPS outfall locations</b>	<b>Map identifies all outfall locations along major tributaries</b>
	<b>Year 2</b>	<b>Review and update map as needed.</b>	
	<b>Year 3 &amp; Beyond</b>	<b>Review and update map as needed.</b>	

The purpose of BMP 1 is to develop a map that can be utilized to coordinate the annual dry weather sampling activities. The storm sewer map will be used to identify priority areas for eliminating areas of illicit discharge. This will be accomplished by using the map to locate priority areas for tracing back to the location of an illicit discharge. The map will also be used to identify drainage channels that receive storm water from storm water outfalls.

BMP2. Review and revise as necessary, current ordinances regarding illicit discharge and elimination including sanitary and storm sewer installation ordinances.			
Measurable Goals	Schedule		Evaluation Criteria
<p>Review and revise as necessary, current ordinances regarding illicit discharge connections</p> <p>Review and revise as necessary, current ordinances regarding the installation of sanitary sewer and storm sewer installations</p>	Year 1	Review and revise ordinance as necessary.	<p>1) Number of records kept on file regarding complaints received for illicit discharge or illegal dumping and any corrective actions.</p> <p>2) Number of site plans reviewed and utility infrastructure inspections conducted during development and any corrective action taken.</p>
	Year 2	Continue enforcing ordinances that prohibit non-storm water discharges and take corrective action to eliminate areas of illicit discharge or illegal dumping and continue conducting site plan review and construction site inspections to ensure proper sewer and storm drain connections	
	Year 3 & Beyond	Continue enforcing ordinances that prohibit non-storm water discharges and take corrective action to eliminate areas of illicit discharge or illegal dumping and continue conducting site plan review and construction site inspections to ensure proper sewer and storm drain connections	

The purpose of BMP2 is to enforce city ordinances to eliminate illicit discharges and illegal dumping and reduce the occurrence of future illicit discharge or illegal dumping issues. All citizens, commercial, and industrial locations in the city of Pearl will be required to abide by the city's Illicit Discharge and Connection ordinance. The city will also enforce its Development Ordinance to ensure that sanitary sewer and storm sewer infrastructure are properly installed and connected.

<b>BMP 3. Train employees to identify and eliminate illicit discharges</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
Continue to train employees on illicit discharges.	Year 1	Create training program on the identification of illicit discharges at city and public facilities and proper response procedures.	Conduct illicit discharge detection and elimination training every 2 years for city employees
	Year 2	Train city employees on the identification of illicit discharges at city and public facilities and proper response procedures	
	Year 3 & Beyond	Train city employees on the identification of illicit discharges at city and public facilities and proper response procedures every two years.	

The purpose of BMP 3 is to implement a program to educate city employees on how to identify illicit discharges and how to properly respond to an identified illicit discharge. It is also an effort to implement procedures to conduct visual inspections and dry weather field screening at identified storm water outfalls to evaluate and assess areas for illicit discharge and begin the process of elimination.

BMP 4. Conduct dry weather screening of outfall locations to identify illicit discharges.			
Measurable Goals	Schedule		Evaluation Criteria
Conduct dry weather screening surveys of identified outfall locations	Year 1	Conduct annually dry weather screening surveys of 20% of identified outfall locations and monitor for illicit discharges when performing ditch cleaning activities.	Conduct dry weather field screening activities and visual inspections annually.
	Year 2	Conduct annually dry weather screening surveys of 20% of identified outfall locations and monitor for illicit discharges when performing ditch cleaning activities.	
	Year 3 & Beyond	Conduct annually dry weather screening surveys of 20% of identified outfall locations and monitor for illicit discharges when performing ditch cleaning activities.	

The purpose of BMP 4 is to utilize the map created in BMP to systematically coordinate the annual dry weather sampling activities. The storm sewer map will be used to identify priority areas for eliminating areas of illicit discharge. The map will also be used to identify drainage channels that receive storm water from storm water outfall. Over the permit period it is the city's plan to screen 20% of identified outfall locations per year at a minimum. Additional screening will become part of normal construction inspection and city maintenance activities.

Responsible Persons: The Post Construction Storm water program will be the responsibility of the Director of Public Works and his/her designees.

**Construction Site Runoff Control**

The city of Pearl recognizes that construction sites can generate a significant amount of silts and sediments in a short period of time. During the prior permit period the city developed and enforced a Storm Water Management Program and an Erosion and Sediment Control Plan to reduce construction pollutants in its storm water runoff. During the prior period the city introduced Land Disturbance permits for all developers and contractors disturbing one acre or more. As part of the policies introduced during the prior permit all contractors are required to use BMP's to control construction site runoff.

The main focus areas during this permit period are continued training of staff, contractors and developers, implementation of the erosion control policy agreement, and mandatory construction site inspections within 48 hours of permitting. All policies put in place during the prior permit will be continued. The new BMP's added will further strengthen the city's construction site run off control program.

BMP 1. Continued training of city personnel, contractors and developers about the proper selection, installation, inspection and maintenance of BMP's, will help to ensure compliance with Erosion and Sediment Control requirements.			
Measurable Goals	Schedule		Evaluation Criteria
Create annual presentation on the city's erosion control requirements and proper BMP selection, installation, and maintenance.	Year 1	Create annual presentation and materials.	Number of presentations given.
	Year 2	Annual presentation	
	Year 3 & Beyond	Annual presentation	

BMP 1 addresses all city personnel, contractors, and developers that have dealings with storm water related issues. Each of these groups will receive training on the city's storm water program specific to proper BMP selection, installation, and maintenance. This training will be held annually. All active contractors and developers will be invited to attend a training specific to contractors and developers conducted by the Community Development and Public Works Departments along with the City Engineer. The city personnel will also go through an annual training session specific to their role in the storm water program.

<b>BMP 2. Developers and contractors will be required to review the city's erosion policy in summary handout form prior to permit issuance and sign erosion control agreement.</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
<b>Staff will go over the city's erosion control policy agreement handout with all contractors and developers prior to permit issuance. The policy is signed by the applicant acknowledging agreement and</b>	<b>Year 1</b>	<b>Erosion control policy agreement is presented to each applicant and signed.</b>	<b>Number of policy agreements signed.</b>
	<b>Year 2</b>	<b>Erosion control policy agreement is presented to each applicant and signed.</b>	
	<b>Year 3 &amp; Beyond</b>	<b>Erosion control policy agreement is presented to each applicant and signed.</b>	

BMP 2 introduces a new level of accountability to the permitting process. Contractors and developers will be presented the city's erosion control policy agreement upon issuance of any permit. They will have an opportunity to review the agreement and be asked to sign acknowledging that they understand the required BMPs and maintenance. The agreement is a tool for both education and prosecution of violators. Once a contractor or developer violates the city's erosion control policy they cannot claim they were not given an opportunity to learn about the proper BMPs for construction sites.

**BMP 3. An initial construction site inspection will be done within 5 business days hours of permit issuance. Construction sites will be inspected for BMP use along with all other**

Measurable Goals	Schedule		Evaluation Criteria
<p><b>Inspectors will be on a construction site within 5 business days of permit issuance to complete a BMP installation inspection. Inspectors will monitor BMP use during all other regular inspections.</b></p>	<p><b>Year 1</b></p>	<p><b>BMP installation inspection scheduled within 5 business days and monitors throughout construction.</b></p>	<p><b>Number of erosion control inspections.</b></p>
	<p><b>Year 2</b></p>	<p><b>BMP installation inspection scheduled within 5 business days and monitors throughout construction.</b></p>	
	<p><b>Year 3 &amp; Beyond</b></p>	<p><b>BMP installation inspection scheduled within 48 hours and monitors throughout construction.</b></p>	

BMP 3 introduces another improvement to the prior permit period's required inspections. Inspectors are automatically scheduled to perform an erosion control inspection within 48 hours after a permit is pulled. This gives the inspector the chance to interact with the contractor early in the project to make sure BMPs are properly implemented. New builders that are not familiar to the city's erosion control policy must pass the initial erosion control inspection to receive a full building permit. Inspectors also continue monitoring BMP maintenance during every regular building inspection that occurs during the life of a permit.

**Responsible Persons:** The Post Construction Storm water program will be the responsibility of the Director of Community Development and his/her designees.

**Post Construction Runoff Control**

The city of Pearl has identified three main areas to initially focus on for post construction runoff control. These areas were selected after reviewing the city's current policies which are in place and what is required to meet new EPA requirements. The areas were also selected after evaluating the city's goals in terms of post construction storm water control. Each of these items have been addresses by a BMP and the rationale is explained following each BMP table.

<b>BMP 1. Identify existing sites utilizing structural BMP's in place throughout the City and verify proper maintenance and implementation of these BMP's.</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
Identify existing sites which utilized structural BMP's within the City and create a database for monitoring and inspection	Year 1	Create database and identify existing sites which utilize structural	Number of sites identified each year
	Year 2	Modify database as necessary to include new structural BMP's on projects.	
	Year 3 & Beyond	Modify database as necessary to include new structural BMP's on projects.	



BMP 1 addresses the need for the identification of existing sites which have permanent BMP's in place for future monitoring and inspection of these BMP's for post construction storm water and runoff control. The city currently has a policy in place where all developments one acre in size and larger or part of a larger overall development are required to design and construct detention structures and/or ponds in order to alleviate any increase in runoff due to the development. These detention ponds need to be identified along with any other structural BMP's which may be in place in order to conduct future inspections of these BMP's to ensure proper maintenance and operation of the structural BMP.

<b>BMP 2. City will conduct periodic inspections during the year of existing BMP's in order to verify proper maintenance and operation of the BMP.</b>			
<b>Measurable Goals</b>	<b>Schedule</b>		<b>Evaluation Criteria</b>
Identify personnel to perform inspections existing post development BMP's. Personnel shall make inspections periodically throughout the year.	Year 1	Identify individual personnel to perform inspections.	Inspect 25% of structural BMP's each year.
	Year 2	Inspectors perform inspections of post development BMP's.	
	Year 3 & Beyond	Inspectors perform inspections of post development BMP's.	

BMP 2 addresses oversight of the city in the inspection of existing post construction structural BMP's. The City is currently experiencing some complaints and concern regarding aging structural BMP's and long term maintenance. The city's existing ordinance gives the authority for city inspection of existing BMPs and gives a mechanism to enforce maintenance. This mechanism has not been used during prior permit period but will be activated during this permit period.

**BMP3. The City shall review and amend as necessary its current ordinances and policies in regards to post- construction runoff and erosion and sediment controls. The ordinance shall include measures which provide the city a means of enforcement for post construction measures.**

Measurable Goals	Schedule		Evaluation Criteria
<p>Review and amend the current ordinance to require the minimum post construction structural BMP's and amend as necessary the ordinance to provide a regulatory means for the City to ensure that owners are maintaining their BMP's.</p>	Year 1	Review current ordinances that pertain to post construction BMP's and revise the ordinance as necessary to require post development not exceed	<p>Ordinances are either updated or deemed adequate to enforce BMP maintenance long term.</p>
	Year 2	Continue to update ordinance as necessary.	
	Year 3	Continue to update ordinance as necessary.	
	Year 4	Continue to update ordinance as necessary.	

The third area of focus for BMP 3 is the review and the revision of the city's current ordinance as it pertains to post construction storm water and the policies that relate to the management of this as well. The city currently requires that developers of subdivision acknowledge ownership of detention ponds and other common areas which may or may not be used as post construction BMP's for storm water control. These areas are typically owned by the developer until such time as he turns it over to the home owner associations. A similar method process will be reviewed for commercial developments as well and the city will be reviewing the ordinance in order to have a regulatory mechanism in place to ensure that these owners maintain their structural BMP's post construction.

**Responsible Persons:** The Post Construction Storm water program will be the responsibility of the Director of Public Works and his/her designees.

**Pollution Prevention/GoodHousekeeping.**

The City of Pearl Pollution Prevention/Good Housekeeping measure for municipal operations goal is to reduce pollutant runoff from municipal operations. To achieve this goal particular attention needs to be paid to vehicle and equipment maintenance practices in the city shop's. Further attention will also need to be paid to management of the city's own structural and non-structural BMPs. Additionally, the city's current Street Sweeping program is a great tool to maintain good housekeeping along the city's streets.

BMP 1. Routine Vehicle and Equipment Maintenance			
Measurable Goals	Schedule		Evaluation Criteria
Implement a vehicle maintenance program that requires all city vehicles to be services on a routine basis.	Year 1	Continue to have city vehicles and equipment inspected and fluids changed on a routine basis	Number of vehicles inspections and oil changes completed
	Year 2	Continue to have city vehicles and equipment inspected and fluids changed on a routine basis	
	Year 3 & Beyond	Annual presentation Continue to have city vehicles and equipment inspected and fluids changed on a routine basis	

The purpose of BMP 1 is to ensure that all city equipment and city vehicles are properly maintained to reduce the amount of fluid leaks from any city owned vehicles or equipment.

BMP 2. Training of City Personnel			
Measurable Goals	Schedule		Evaluation Criteria
Develop pollution prevention workshop	Year 1	Present storm water pollution prevention workshop.	Reduction of fertilizer and pesticide use and reduction of water use.
	Year 2	Present storm water pollution prevention workshop.	
	Year 3 & Beyond	Present storm water pollution prevention workshop.	

Once per year, hold an additional workshop for new employees and crew managers. Achieve a 30% reduction in fertilizer and pesticide use and a 20% reduction in water use after year 3 of the permit term. Topics will also include fleet and building maintenance, new construction, storm water system maintenance and other land disturbances. This will be done through the utilization of materials available from the Environmental Protection Agency (EPA), the state or other organizations.

Because of the use of substantial quantities of water and artificial chemicals, there are elevated levels of nutrients and toxics in receiving waters. By emphasizing the benefits of recycling organic matter, reducing the use and planning the timing of application of chemicals and water, etc., grounds and maintenance crews can become better aware of ways they can help reduce these pollutants.

BMP 3. Implementation of storm water controls at city owned facilities to reduce storm water runoff pollutants			
Measurable Goals	Schedule		Evaluation Criteria
Conduct municipal facility storm water inspections	Year 1	1) Conduct storm water inspections at municipal facilities. 2) Implement Storm Water Pollution Prevention Plans for municipal facilities.	1) Conduct storm water inspections at City facilities and maintain inspection reports for each inspection.
	Year 2	1) Conduct storm water inspections at municipal facilities. 2) Review and update Storm Water Pollution Prevention Plans for municipal facilities as needed.	
	Year 3 & Beyond	1) Conduct storm water inspections at municipal facilities 2) Review and update Storm Water Pollution Prevention Plans for municipal facilities as needed	

BMP 3 brings the storm water plan full to circle by holding the city accountable for its own storm water management practices at city facilities. This BMP builds on the education and involvement of the elected officials and allows the city to have conversation and take action toward being a good example of proper storm water management activities.

Responsible Persons: The Pollution Prevention/Good House Keeping program will be the responsibility of the Director of Public Works and his/her designees.

BMP 3 brings the storm water plan full to circle by holding the city accountable for its own storm water management practices at city facilities. This BMP builds on the education and involvement of the elected officials and allows the city to have conversation.





