



City of Ozark, Missouri

Department of Public Works

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6/28/2013

Ms. Ruth A. Wallace
Municipal Stormwater Program Coordinator
PO Box 176
Jefferson City, Mo. 65102-0176

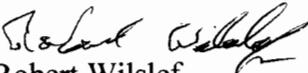
WATER PROTECTION FUND

Dear Ms. Wallace,

Attached is the City of Ozark's Stormwater Management Program, (SWMP), report for the Small Municipal Separate Storm Sewer System, (MS4), renewal.

If you have any comments or questions, please let us know.

Sincerely,


Robert Wilslef
Public Works Department
Engineering and Environmental Resources

Enclosures;

City of Ozark's Stormwater Management Program, (SWMP), report for the Small Municipal Separate Storm Sewer System, (MS4).



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CITY OF OZARK, MISSOURI

WATER PROTECTION PROGRAM

SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

STORMWATER MANAGEMENT PROGRAM

A. INTRODUCTION

The City of Ozark's MS4 program has been established since 2008. During that period Ozark's staff has gained experience with the reporting requirements and has attended various training in the MS4 program. It is the responsibility of the City of Ozark to develop this Stormwater Management Program. The City of Ozark intends to comply with all aspects of the Phase II stormwater regulations.

In recent years, the City of Ozark has been a rapidly growing community with a present population of approximately 18,000 residents.

Ozark is in a humid climate with mild winters and hot summers. The average July high is close to 90 degrees and the average January low is approximately 20 degrees. The average annual rainfall is approximately 40" with the average annual snowfall below 10".

Ozark is located in Christian County and situated on the upland Springfield Plateau with elevations ranging from approximately 1100' to 1400' mean sea level. The rolling landscape contains some steep slopes to the river drainage. The main stormwater drainage is to the Finley River. Ozark is located in a karst area containing numerous sinkholes with the greatest number located northeast and south of the center city.

Drainage features in Ozark include detention/retention ponds and underground storm sewers systems. Some older areas of the city rely on surface drainage.

We currently have several programs which provide many aspects of the six required program areas. We routinely review our programs for necessary improvements to ensure compliance and to identify areas where programs should be refined. Any new regulations or requirements would require the approval of the Ozark Board of Aldermen.

B. CONTACT LIST

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Derek Lee, P.E., Stormwater Engineer (417) 886-9100 dlee@leeengineering.biz

C. SIX REQUIRED PROGRAM AREAS

4.2.1 Public Education and Outreach

The City of Ozark's staff has been active in public education and outreach activities with the goal of increasing citizen awareness of stormwater/pollution issues. The issues include, but are not limited to proper handling/disposal of solid/hazardous wastes, proper handling/application of lawn fertilizers/pesticides, the elimination of illegal dumping into storm drains and etc.

The Public Works department staffs a booth at the annual Ozark Expo for the purpose of providing public education on stormwater issues/projects, illicit discharges, fat/oil/grease discharge, (FOG), pollution issues and related subjects. This Ozark Expo is one of the main vehicles utilized to inform the public of storm water/pollution issues

Ozark continues to help fund and support the James River Basin Partnership (JRBP). The mission of this organization is to inform the public of water resources and how to protect them. The Public Works Director for the City of Ozark is presently the President of the Executive Board for the JRBP.

The largest public education and outreach event with JRBP is the River Rescue. Ozark staff members provide technical support and assistance to the JRBP during the river rescue. The public receives hands on education and outreach before and during the river rescue. After the rescue, Ozark assists in sponsoring the Dam Jam with hundreds in attendance. The Dam Jam is a multi-band concert with food and drinks available. Proceeds go to improve and protect our water resources. At the Dam Jam, educational booths are set up showing river clean up and pollution clean up efforts that are sponsored by the JRBP.

Ozark provides class room training to school age children yearly through the JRBP's Watershed Festivals. The Director of Public Works donates time to provide this education.

The City of Ozark has formed a Stream Team Volunteer Water Quality Monitoring group. This group is utilized to educate school age children and their teachers on watershed education and biological monitoring. The goal of the Stream Team is to provide ongoing monitoring of water quality in our watersheds as well as public awareness/involvement.

In addition to the public training, Ozark's staff receives training in order to better educate the public. Ozark's staff attends training opportunities as available. Ozark's staff also attends Missouri MS4 Stormwater Conferences as feasible.

Members of Ozark's staff and the Ozark's stormwater engineer normally attend the Missouri Floodplain and Stormwater Managers Association Conference at Tan-Tar-A Resort in Osage Beach. This conference provides guidance concerning the MS4 program and any changes Ozark may be required to implement in the future.

The City of Ozark has developed brochures related to MS4 issues and made them available on the City's website and from the brochure racks at City Hall and the Public Works Field Office.

Measurable goals

Ozark will host and sponsor educational training conferences as possible with a minimum goal of two training sessions annually. Ozark will continue to annually help fund the JRBP and co-sponsor the river rescue as well as participate in the dam/jam. Ozark will utilize the city's Stream Team and other resources to provide a minimum of one education/outreach session for school age children and their teachers annually. Public Works will annually staff a booth at the Ozark Expo to provide public information on stormwater/pollution issues. The city's web site will be reviewed annually to update stormwater/pollution information. Existing brochures/handouts will be updated and additional brochures/handouts will be developed as required.

4.2.2 Public Involvement/Participation

Developments in Ozark are administered under the provisions of the Planning and Development Department and the Public Works Department. Subdivision of land requires approval of a preliminary and a final plat. For approval of a preliminary plat, a public hearing before the Planning & Zoning Commissioners is required and public notice is given as required by State statute. Final plats are approved by the Ozark City Council. Ozark's expenditures for stormwater management activities are included in the annual budget adopted by the Ozark City Council. The budget is reviewed in public hearings before the Ozark City Council which are open to public comments. Copies of the council meeting minutes are available to the public at Ozark's City Hall.

The City of Ozark's Stream Team is part of a larger group effort to involve school age children and their teachers in sampling water quality, tree plantings, willow staking on the river banks and etc.

The before mentioned river rescue is an avenue for Ozark to involve the public in stormwater cleanup efforts. The Dam Jam provides more public participation for children and adults who were not able to float the river.

Pre-Construction meetings are required prior to the beginning of any construction projects that involves land disturbance. Erosion control, water quality and maintaining best management practices are addressed at these meetings. Ozark also provides Low Impact Design (LID) information to architects and engineers as alternatives to typical construction practices. Ozark city staff is committed to providing LID alternatives such as additional riparian corridor width in lieu of detention where detention would only provide marginal downstream improvement. The City of Ozark has also offered higher density developments in exchange for additional water quality protection.

Measurable goals

Public hearings will be conducted on all plats and budgetary items. Ozark will continue to conduct preconstruction meetings for all construction activities concerning land disturbance. Ozark will continue to annually co-sponsor the river rescue as well as participate in the dam/jam. Ozark will utilize the city's Stream Team and other resources to provide a minimum of one public participation session for school age children and their teachers annually.

4.2.3 Illicit Discharge Detection and Elimination

The Municipal Code for the City of Ozark prohibits the discharging of any item which would pollute or obstruct a stormwater system. It also prohibits the pollution of any water way by substances harmful to humans.

Ozark had established an illicit discharge ordinance in 2009. The ordinance provides a plan for illicit discharge inspections and provides for notices of violations if required. The ordinance has been enforced on multiple occasions as illicit discharge monitoring has occurred. Ozark has continued to inspect for illicit discharges and prepares reports of the findings. Ozark continues to visually inspect drainage ways within the city limits.

Ozark has purchased the necessary equipment/supplies and is in the process of developing a smoke testing program for the existing sanitary sewer system.

Ozark continues to refine the stormwater sewer map for stormwater infrastructure

Ozark has continued to refine its illicit discharge program. Illicit discharge monitoring is occurring and ongoing.

All new stormwater covers installed within the city are required to have a fish logo and "Dump No Waste – Drains to River" wording.

Measurable goals

All new connections to the city's sanitary sewer system will be inspected by city staff. Number of failing on-site wastewater systems properly repaired or connected to the city's system will be noted.

Quantity of existing stormwater system inspected for illicit discharges will be recorded.

Quantity of existing sanitary sewer system smoke tested will be recorded.

4.2.4 Construction Site Storm Water Runoff Control

Ozark has had a city application for land disturbance since July 2005 and therefore has been regulating erosion control for some time. The application and process for land disturbance continues to be refined since that date. Erosion control has been a part of the city's design standards since 2006. Ozark had passed an erosion control ordinance in October 2011 to further enforce the issue of land disturbance. Ozark has received training and developed extensive experience on inspection of erosion control methods at construction sites. Ozark has also developed checklists for recording preconstruction conferences as well as forms for the security deposit requirement program and application forms for renewal and termination of Land Disturbance Permits. A Land Disturbance Inspection Checklist was also developed in 2012.

The City of Ozark has worked diligently with owners of subdivisions to ensure that all previously disturbed areas are properly re-vegetated and that erosion issues are resolved. This effort has been highly successful in re-establishing vegetation on previously disturbed undeveloped areas.

Measurable goals

A city's land disturbance permit, SWPPP and security deposit will be required for all projects exceeding one acre in land disturbance.

A preconstruction conference will be required on all projects involving land disturbance. Continue to inspect disturbed construction sites and installed Best Management Practices, (BMP's), to minimize erosion and discharge of silt/sediment.

4.2.5 Post Construction Storm Water Management in New Development and Redevelopment

The approved City of Ozark's 2006 stormwater design standards addressed the Post-Construction Storm Water Management in New Development and Redevelopment. The City of Ozark took the initiative to establish water quality requirements even before the 2008 MS4 permit was established. Both structural and nonstructural BMP's were addressed. The 2010 design standards are available on the City's website. The changes from the 2006 to the 2010 stormwater design standards are minor and do not relate to MS4 regulations. The design standards require water quality Best Management Practices (BMP) for all sites. This is unique in that surrounding communities only require water quality BMPs for sites over one acre. Over the last five years, water quality swales, filter strips, bio-swales, water quality basins, pervious pavement, and stream buffers have been effectively used to provide water quality in Ozark. Through peak flow reduction and water quality, the City of Ozark requires all developments to reasonably mimic preconstruction runoff activities in new developments. Additional information such as LID designs on Ozark's Post-Construction SWMP can be found in the September 16, 2008, SWMP pages 12-15. A breakdown of specific sections within the 2010 design standards provided in the stormwater regulations is provided below:

Part III limits stormwater discharge velocity in pipes and requires energy dissipation.
Part IV reduces developed stormwater discharge flows to pre-developed discharge flows.
Part V requires water quality protection for stormwater discharges.
Part VI protects sensitive areas such as springs and sinkholes from stormwater discharges.
Part VII limits sediment discharge during construction activities.

The design standards also require a 25' stream buffer for all new sites. This applies to all recognized waters of the state which typically corresponds to all blue lined streams. Stream buffers are recognized as the best means to protect our receiving streams. Stream buffers filter pollutants prior to discharging into the stream. But more importantly they eliminate the practice of placing improvements directly into waterways/intermittent streams. In the past, standard engineering practice called for placing these intermittent streams into pipes and filling the low areas. This scenario is no longer allowed in Ozark.

The City of Ozark requires all new developments to have pre-design meetings/assessments for proposed developments. All plans are reviewed by in-house staff and Lee Engineering (professional engineer who specializes in stormwater). The reviews ensure the permanent stormwater features for site plans are designed to treat stormwater prior to discharging into streams. Hydrology reports which show detailed calculations of all stormwater/water quality features are available upon request.

The effectiveness of specific BMPs to treat the specific contaminants that the City of Ozark is currently testing can be found in the EPA document: EPA/600/R-03/103 September 2002 "Considerations in the Design of Treatment Best Management Practices (BMPs) to Improve Water Quality" by the National Risk Management Research Laboratory Office of Research and Development U.S. Environmental Protection Agency Cincinnati, OH. This can be found online at <http://www.epa.gov/nrmrl/pubs/600r03103/600r03103.pdf>. This document provides specific pollutants which increase due to impervious area on Table 1-2, page 23. However, there is no universal agreement on the effectiveness of BMPs as stated on page 38. Specific BMPs effectiveness to reduce specific pollutants is provided in Table 3-4 found on Page 66 of the report. Finally, the report lists 18 pages of references to books and studies on the subject. Ozark will use this publication to address how BMPs will treat specific pollutants.

Stormwater Improvement Projects: Within the previous three years the City of Ozark has funded nearly \$500,000 in stormwater improvement projects encompassing approximately 500 acres of drainage areas. This included four stormwater improvement projects each of which provided enhanced water quality as well as stormwater runoff control. It also includes an additional two stormwater improvement projects that are in progress which will also provide water quality and stormwater runoff control. Two stormwater improvement projects are also presently in the planning stage for accomplishment in 2013 and 2014.

The City of Ozark requires all redevelopment projects to provide water quality improvement. The City of Ozark's Design Standards exceed the requirements in the areas of stream buffers and requires smaller projects to provide water quality as described in the paragraphs above.

Measurable goals

Number of developments requiring stormwater reviews: Goal = 100%

Number of developments requiring erosion control plan reviews: Goal = 100%

Number of new developments providing permanent water quality controls: Goal = 100%

Number of stormwater improvement projects incorporating water quality into the design.

4.2.6 Pollution Prevention/Good Housekeeping for Municipal Operations

Ozark performs annual inspections of all city owned sites/facilities to determine any deficiencies in the good house-keeping provisions of MS4. A checklist for inspection of city sites has been developed.

A policy and inspection checklist for maintenance and inspection of detention/retention ponds has been developed. An informational handout on detention/retention ponds has also been developed. All city detention sites/facilities are inspected for MS4 deficiencies

The importance of spill control and reporting is emphasized at Public Works meetings. Additional more in-depth sessions will be provided at future meetings.

A new vacuum truck was recently procured. When it becomes fully operational, a schedule will be developed for sediment removal from city sites/infrastructure.

Ozark has performed field inspections to determine deficiencies in the good house-keeping provisions of MS4 for all city sites/facilities. All previous deficiencies from previous inspections have been corrected and all city sites are re-inspected annually.

Measurable goals

Tons of salt used for snow melt;

Man-hours devoted to city-wide spring cleanup;

Quantity of debris/silt collected with the street sweeper and the vacuum truck;

Hours that the community service workers are scheduled to pick up roadside trash;

Record annual field inspections of city owned sites/facilities.

D MONITORING, RECORDKEEPING, AND REPORTING

The outfall monitoring program is provided by The Ozarks Environmental and Water Resources Institute (OEWRI).

Records of all permits, inspection reports and land disturbance permit documents are kept on file in the offices of the Public Works Department and the Planning/Development Department.

An annual report will be prepared and submitted to the Department of Natural Resources.

E. PROPOSED SCHEDULE FOR MEETING PERMIT REQUIREMENTS

In the foregoing sections we have outlined the activities undertaken in order to comply with the terms of the general permit. These are summarized.

A schedule of the measurable goals for the SWMP is provided below:

<i>ACTIVITY</i>	<i>COMPLETION DATE</i>
<i>Participate in educational conferences, Provide involvement and funding for the James River Basin Partnership educational/outreach programs. Utilize the Stream Team for public education and outreach. Staff a booth at the Ozark Expo. Update the web site and the brochures/handouts as required.</i>	<i>Annually</i>
<i>Conduct public hearings on all plats and MS4 budget items. Require pre-construction meetings for projects involving land disturbance. Co-sponsor the river rescue. Involve the city's Stream Team in public participation.</i>	<i>On-going</i>
<i>Inspect all new connections to the city's sanitary sewer system. Record all repaired on-site wastewater system and connections to the city system. Inspect the existing stormwater system for illicit discharges. Schedule smoke-testing of the existing sanitary sewer system.</i>	<i>On-going</i>
<i>Record and monitor all land disturbance permits and SWPPP. Require security deposits with the land disturbance permit. Require preconstruction conferences for land disturbance projects. Inspect all disturbed construction sites and the related BMP's.</i>	<i>On-going</i>
<i>Provide 100% stormwater reviews and erosion control plans for developments. Require 100% water quality for developments. Continue to design and construct stormwater improvement projects incorporating water quality into the design.</i>	<i>On-going</i>
<i>Record tons of salt used for snow melt and quantity of debris/silt collected from the city streets. Record the man-hours devoted to clean up. Continue to perform/record field inspections of city owned sites for the good housekeeping provisions of MS4.</i>	<i>Annually</i>
<i>Maintain records for the OEWRI monitoring, permits, inspection reports and land disturbance documents.</i>	<i>On-going</i>
<i>Prepare and submit annual MS4 stormwater report.</i>	<i>Annually</i>

