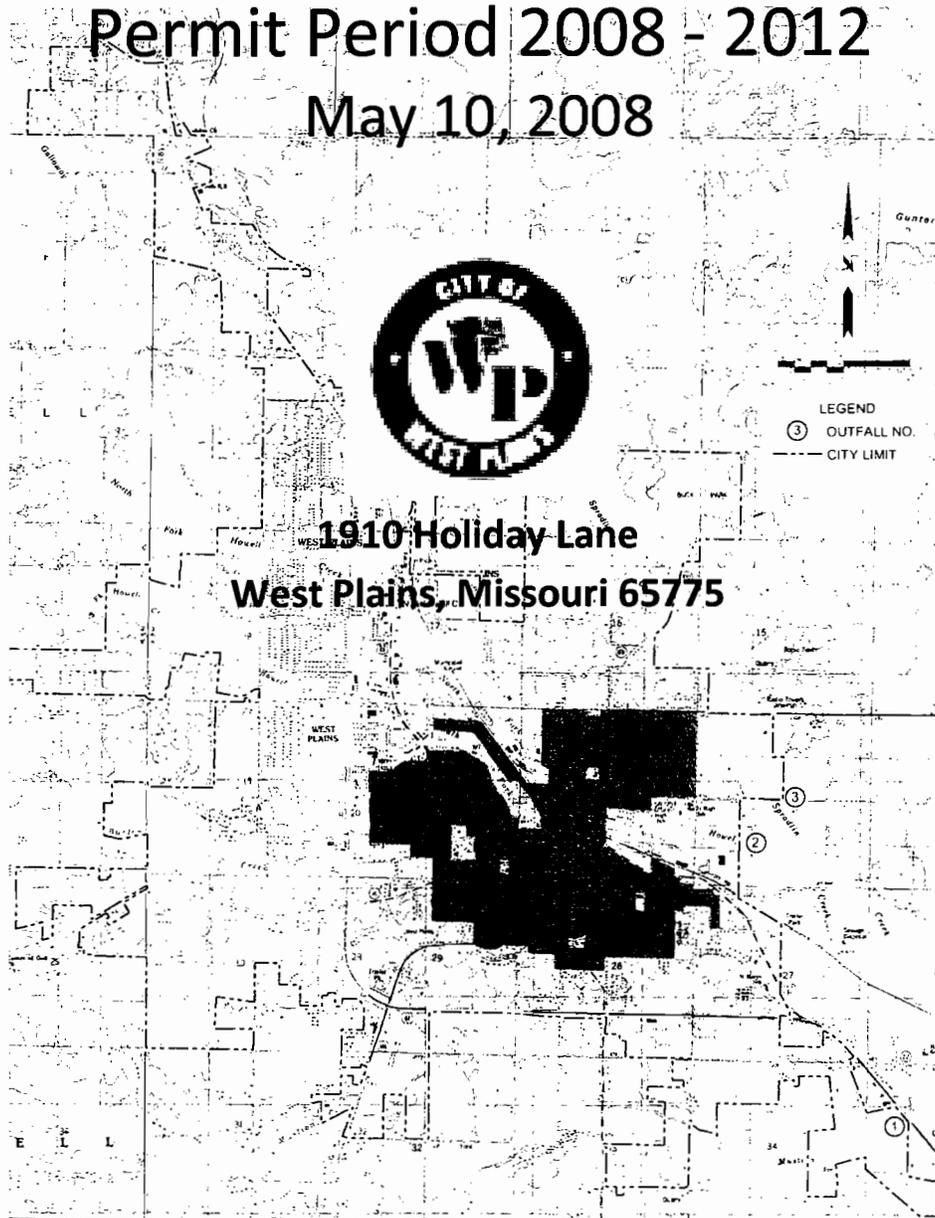


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Storm Water Management Program  
City of West Plains, Missouri  
Permit Period 2008 - 2012  
May 10, 2008



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## INTRODUCTION

The federal Clean Water Act requires that stormwater discharges from certain types of facilities be authorized under stormwater discharge permits. (See 40 CFR 122.26.) The goal of the stormwater permits program is to reduce the amount of pollutants entering streams, lakes and rivers as a result of runoff from residential, commercial and industrial areas. The original 1990 regulation (Phase I) covered municipal (i.e., publicly-owned) storm sewer systems for municipalities with populations equal to or greater than 100,000. The regulation was expanded in 1999 to include municipalities with population of 10,000 or more. This expansion of the program is referred to as Phase II.

The City of West Plains has approximately 6000 residential and commercial properties which are located in Howell Creek Watershed, as shown in Figure 1 on the following page. The boundaries of the city limits are shown in Figure 2. The City of West Plains has developed an innovative approach to creating a Stormwater Management Plan (SWMP). The need and justification for this program has increased in the past five years within the city limits of West Plains as the development of residential and commercial properties has grown tremendously during this time frame. The City believes that the steps required to achieve the desired goals are in this SWMP and are the measures needed to create a workable and achievable program. The City has proposed ordinances for describing the intent and enforcement, and manuals for procedures, guidance, and requirements. The titles of these manuals are: 1) Stormwater Management Manual which includes guidance and regulations cited in the ordinance, 2) IDDE: A Guidance Manual for Program Development and Technical Assessments, to provide guidance and procedures for Illicit discharge, and O&M Manual for municipal operations.

The City will diligently work on controlling quantity and quality of stormwater runoff through means of reviews, inspections and enforcements. The City will also plan to educate the public and invite the public to participate in informative events on stormwater. The goal of the City is to meet all six minimum control measures set forth by the State and Federal Government.

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## Chapter I - PUBLIC EDUCATION AND OUTREACH

### A. Benefits of a Public Education and Outreach Program

An informed and knowledgeable community is crucial to the success of any stormwater management program. Without a public knowledgeable about local water problems caused by urban runoff, it is difficult to obtain public support for local stormwater programs. This support ranges from individuals changing their daily actions to community support for all stormwater quantity and quality measures. As with all of the measures, the goal is to reduce the magnitude of a flood and the degradation of local water bodies and improve chemical, physical and biological quality of state waters. In order to achieve these benefits, public education programs shall be targeted to these outcomes:

- **To improve understanding** of the reasons why stormwater quantity and quality programs exist. Public understanding of local impacts is particularly important for municipal funding initiatives for the program or seeking volunteers to help implement programs.
- **To improve compliance** with the programs as the public becomes aware of community and individual responsibilities expected and required in order to protect or improve the stormwater runoff from the community.

### B. Program Implementation

The goal of the public education and outreach program is educating the public of the effects caused by the quantity and quality of stormwater. The City will seek assistance from the Environmental Protection Agency, the Missouri Department of Conservation and the Natural Resources Conservation Service in educating the public.

Public education and outreach on the need for stormwater management will be explained in six newspaper articles, one newsletter, five public presentations, and three call-in radio shows. During the presentations information will be given on how the public can have an actual role in assisting. After educating the public on the effects, the City will present its plan for meeting Federal/State regulations and how it intends to fund the program. The components of the public education and outreach program are shown below and are followed with the measurable goals.

- **Print Six articles in the newspaper entitled: "Impacts of Stormwater" to accomplish the following:**
  1. Present a brief summary of the impacts.
  2. Provide an invitation to attend the presentation.
- **Four Public presentations of "Impacts of Stormwater":**
  1. Present "Impacts of Stormwater".
  2. Information on how the public can become involved; for example, stream teams, stream cleanups, and drain stenciling.
- **Develop and distribute a City Newsletter: "A Citizen's Guide to Understanding Stormwater".**
  1. Includes the following information:
    - a. What is stormwater runoff?
    - b. Why is stormwater runoff a problem?
    - c. The effects of flooding and/or pollution.
    - d. Stormwater Pollution Solutions; new and existing developments.
    - e. Explain Federal/State regulations the City will implement.
    - f. Cite City's Stormwater Management Program Plan available on City's website.
    - g. Funding mechanism will be stormwater utility fee with examples of estimated cost.

- h. Explanation of stormwater credits.
    - i. Invitation to the public to a presentation on the subject which will allow for a question and answer session.
  - 2. Mail newsletter to all residences within the City Limits.
- **Public Presentation: “ A Citizen’s Guide to Understanding Stormwater” will include:**
  - 1. The same information as newsletter.
  - 2. Time for a question and answer session.
- **Three Call-in Radio Shows**
- **Elementary and Middle School Educational Programs**
  - 1. Conduct educational programs for the school systems.
  - 2. Provide information to take home to their parents.
- **Implement Stormwater Utility**

Additional public outreach and training are covered in illicit discharge detection and elimination program Minimum Control Measure #3 (MCM#3), construction site stormwater runoff control program (MCM#4), post-construction stormwater management program (MCM#5), and pollution prevention/good housekeeping for municipal operations (MCM#6).

**C. Measurable Goals**

| <b>MCM #1<br/>PUBLIC EDUCATION AND OUTREACH</b>                       | <b>SWMP Element Description</b>   | <b>Implementation Schedule</b>   |
|---|---|--|
| Six newspaper articles "Impacts of Stormwater"                        | Education and notice of presentation and summary of "Impacts of Stormwater" | June 2008 – Year 1<br>July 2008 – Year 1<br>August 2008 – Year 1<br>September 2008 – Year 1<br>October 2008 – Year 1<br>November 2008 – Year 1 |
| Presentation "Impacts of Stormwater"                                  | Information presentation and promotion of public involvement                | July 2008 – Year 1<br>September 2008 – Year 1  |
| Complete newsletter "A Citizen's Guide to Understanding Stormwater"   | Development of newsletter to inform residents                               | September 2008 - Year 1  |
| Distribute newsletter "A Citizen's Guide to Understanding Stormwater" | Mailing to all residents  | October 2008 – Year 1  |
| Presentation "A Citizen's Guide to Understanding Stormwater"          | Presentation and question/answer sessions                                   | October 2008 - Year 1  |
| Three Call-in Radio Shows   | Summary and question/answer sessions  | September 2008 – Year 1<br>October 2008 – Year 1<br>November 2008 – Year 1   |
| Elementary and Middle School presentations                            | "Impacts of Stormwater"   | September 2008 – Year 1  |
| Presentation and promotion of Stormwater Utility and Ordinance        | Stormwater Utility and Ordinance presentation                               | December 2008 – Year 1   |
| Implement Stormwater Utility and Ordinance                            |   | January 2009 – Year 2  |

## Chapter II – PUBLIC PARTICIPATION/INVOLVEMENT

### A. Benefits of a Public Participation and Involvement Program

The public can provide valuable input and assistance to a municipal Stormwater Management Program. Since the activities of the public within urban landscapes are what produce increased runoff and pollution of stormwater, and because the public funds municipalities/utilities, it is imperative that the public be given every opportunity to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a Stormwater Management Program because it allows for:

- **Broader public support** since citizens who participate in the development and decision-making process are involved, they are partially responsible for the program and thus, more likely to take an active role in its implementation.
- **A broader base of expertise and economic benefits**, since the community can be a valuable, free, intellectual resource; and thus can be utilized to promote and support the stormwater program.
- **Conduits to other programs** since citizens involved in the stormwater program process provide important connections and relationships with other community and government programs.

### B. Program Implementation

- **Community Clean-up Program**
  1. Develop clean-up teams of interested parties as a result of the presentation “Impacts of Stormwater”.
  2. Cite: <http://mdc.mo.gov/documents/fish/streams/litter.pdf>
  3. Recruit the public for an important role in removing trash and debris from the streams in the watershed.
  4. Document approximate length of stream clean-up.
  5. Map locations of clean-up for reporting records and for the volunteers.
  6. Document number of bags of litter filled.
- **Storm Drain Stenciling Program**
  1. Develop storm drain stenciling team(s) from interested parties as a result of the presentation “Impacts of Stormwater”.
  2. Cite: [http://mdc.mo.gov/documents/fish/streams/drain\\_stencil.pdf](http://mdc.mo.gov/documents/fish/streams/drain_stencil.pdf)
  3. Offer storm drain stenciling program to non-profit organizations, clubs, fraternities, sororities, and volunteers.
  4. Paint pre-existing inlets or stormwater boxes
  5. Use the same phrase on all stenciling projects so that the public can associate with the phrase used.
  6. Map the locations that need to be stenciled and offer specific areas for volunteers to document the amount of storm drains stenciled per “cycle” year.
- **Stream teams**
  1. Develop stream team(s) from interested parties as a result of the presentation “Impacts of Stormwater”.
  2. Cite: <http://www.mostreamteam.org/wqintro.asp>
  3. Cite: <http://www.mdc.mo.gov/documents/fish/streams/streamteam.pdf>
  4. Cite: [http://mdc.mo.gov/documents/fish/streams/now\\_what.pdf](http://mdc.mo.gov/documents/fish/streams/now_what.pdf)
  5. Use data as a water quality monitoring tool
  6. Cite: <http://www.mdc.mo.gov/documents/fish/streams/volunteer.pdf>

▪ **Implement Twenty-Four Hour Stormwater “Hotline” Service**

1. Develop “Hotline” for public/citizen complaints, questions, and concerns regarding all, but not limited to, the following:
  - a. Reporting of illicit discharges from residents, industries, etc.
  - b. Reporting of illegal dumping .
  - c. Reporting of public or private areas with large, medium, small amounts of litter.
  - d. Questions regarding public participation or involvement activities, construction site runoff, public education and outreach, municipal activities affecting stormwater, etc.
2. Document calls weekly/monthly regarding all “Hotline” activities.
3. Contact the individual citizens that have called the “Hotline” within 72 hours, unless it is an emergency, in which case contact the proper authorities.
4. Document all findings through the “Hotline” to determine if it is effective and if it is, in what way.
5. Report all findings and information collected from the “Hotline” in the Annual Report.

**C. Measurable Goals**

| <b>MCM #2<br/>PUBLIC PARTICIPATION/INVOLVEMENT</b> | <b>SWMP Element Description</b>                                    | <b>Implementation Schedule</b>  |
|--|--|---|
| Community Clean-up Program                         | Removing trash and debris  | September 2008 – Year 1<br>April 2009 – Year 2<br>April 2010 – Year 3<br>April 2011 – Year 4<br>April 2012 – Year 5 |
| Storm Drain Stenciling Program                     | Drain stenciling events  | June 2008 – Year 1<br>April 2009 – Year 2<br>April 2010 – Year 3<br>April 2011 – Year 4<br>April 2012 – Year 5      |
| Stream Team Development                            | Start up   | August 2008 – Year 1  |
| Stream Team Monitoring                             |  | September 2008 - Year 1<br>April 2009 – Year 2<br>April 2010 – Year 3<br>April 2011 – Year 4<br>April 2012 – Year 5 |
| “Hotline” Service                                  | Complaints, questions, and concerns with stormwater related issues | January 2009 – Year 2   |

## Chapter III – ILLICIT DISCHARGE DETECTION AND ELIMINATION

### A. Benefits of an Illicit Discharge Detection and Elimination Program

Illicit discharges can result in untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic life, wildlife, and human health.

### B. Program Implementation

Illicit discharges are defined as a measurable flow during dry weather containing pollutants and/or pathogens in or leaving a stormwater conveyance structure. A stormwater conveyance structure is defined as pipes, junction boxes, inlet boxes, and open channels used to transport stormwater. Measurable flow in or leaving a storm conveyance structure but containing no pollutants and/or pathogens is simply considered discharge. The goal of this plan is to remove discharge that is considered illicit. In order to have a successful program to remove illicit discharges the City will implement or continue the following measures.

- **Continue development of the Storm Sewer System Map by collecting information with (GIS) and (GPS) software and equipment.**
- **Development of a “Hotline” for residents to report illegal dumping, illicit discharges, odors, discolored water, and any other pollutant/pathogen 24 hours a day (Located in Chapter II Public Participation/Involvement).**
  1. Calls will be logged on a daily/monthly basis using a data filing system.
  2. Calls will be monitored within a 72 hour window unless an emergency, in which case they will make the report with 911/local emergency agencies.
  3. Reports will be filed on all calls. If illicit discharge is found, the proper procedures will be followed to eliminate the threat of spreading or contamination.
- **Adoption of IDDE: A Guidance Manual for Program Development and Technical Assessments, which will be the procedure manual for all of, but not limited to the following;**
  1. Procedures for locating priority areas including areas with higher probability of illicit connections or ambient sampling to locate impacted reaches
  2. Procedures for tracing the source of an illicit discharge, including the specific technique to detect the location of the source.
  3. Procedures for removing the source of the illicit discharge.
- **Enforcement of the removal of illicit discharges through an illicit discharge ordinance.**
- **Development of a program for storm drain stenciling (located in Chapter II Public Participation/ Involvement).**
- **Development of a household hazardous waste program through the recycling facility.**
- **Education of public employees and the public about the harm of illicit discharges (located in Chapter VI Pollution Prevention/Good Housekeeping).**
- **Development of a program to monitor and inspect public facilities and commercial/industrial properties for any type of illicit discharge and:**
  1. Document any specific complaints received.
  2. Document inspections and/or findings from each commercial/industrial property.
  3. Document number of illicit discharges detected.

4. Document number of illicit discharges eliminated.
- **Development of a program to inspect all major outfalls, medium outfalls (30" or larger), small outfalls (30" or smaller), and priority areas and:**
    1. Inspect/monitor sites on a regular basis (semi-annually).
    2. Document number of illicit discharges detected.
    3. Document number of illicit discharges eliminated.
    4. Document number of dye or smoke tests conducted.
  - **Development of a spill response plan for the City in cooperation with the Missouri Department of Natural Resources (MDNR) to:**
    1. Document any spills that have entered the stormwater conveyance system.
    2. Identify BMPs that can be used to insure that spills do not enter the stormwater conveyance system.

C. Measurable Goals

| MCM #3<br>ILLCIT DISCHARGE DETECTION AND<br>ELIMINATION  | SWMP Element Description  | Implementation Schedule  |
|--|---|--|
| Hazardous waste pickup program                           | Identifying products homeowners use that the current sanitary waste company will not pick up. After identifying these products the City will set a day each year in early spring to collect these products and dispose of them properly.  | First pickup<br>April 2010 – Year 3  |
| Newspaper article  | Write about the need for illicit discharge detection and elimination, Federal/State/City requirements, and information on the hazardous waste pickup program.   | January 2010 – Year 3  |
| Implement Illicit Discharge Ordinance                    | Enforcement mechanism   | Effective March 2010 – Year 3  |
| Storm sewer map  | City will continue to update the storm sewer system map.  | Inspection form completed on discharge points, open channels, and creeks:<br>25% August 2010 – Year 3<br>50% August 2011 – Year 4<br>100% August 2012 – Year 5 |
| Field data inspections                                   | Develop an inspection form and complete the form for stormwater discharge points, all open channels, and creeks within the City limits. The inspection form is used to identify illicit discharges during dry weather conditions. If illicit discharges are located, they may require testing to indicate source and verify that it is illicit. | Inspection form completed:<br>25% by August 2012 – Year 5  |
| Public facilities, commercial and industrial inspections | Develop an inspection form and complete the form for industrial and commercial properties, and identify any illicit discharges.   |  |

## **Chapter IV – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL**

### **A. Benefits of a Construction Site Stormwater Runoff Program**

Polluted stormwater runoff from construction sites often flows to storm sewer systems and ultimately is discharged into local rivers and streams. Sediment is usually the main pollutant of concern. Studies have shown sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and from 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting situation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters.

Additional pollutants are also often present in stormwater runoff from construction sites and may result in degradation of receiving water. Nutrients (nitrogen and phosphorous) are of specific concern and can cause significant impairment of stormwater quality. In addition, solid and sanitary wastes, pesticides, oil and grease, concrete truck washout, construction chemicals, construction debris and metals may be carried by stormwater and cause a negative impact on receiving waters.

### **B. Program Implementation**

The main audiences for this control measure are developers, contractors and residents of the City of West Plains. The main targeted pollutant is sediment. Construction debris, construction chemicals and concrete truck washout are targeted as well.

In order to meet the MDNR requirements the City is going to develop a program that covers land disturbance activities equal to or greater than one acre or are part of a larger common plan of development or sale that will disturb one (1) or more acres over the life of the project. Land disturbance is defined as any activity that results in the destruction of the root zone and/or an act that is reasonably certain to cause pollution to the waters of the state. The first step in most construction projects is moving earth. Moving earth can be as minor as stripping the top soil and be considered land disturbance. The key to implementing a successful program requires (1) the proper amount of funding, (2) educating the public on the need, (3) informing the land disturbers (contractors and developers) of the requirements and (4) enforcing the requirements.

Education about the requirements will be implemented and achieved through training for developers and contractors. The training will cover the City of West Plains and MDNR land disturbance requirements and will include the following:

1. Requirements for land disturbance.
2. The concept of a Stormwater Pollution Prevention Plan (SWPPP) and who can develop and prepare one.
3. Modifying a SWPPP; when and by who?
4. Installation practices for sediment and erosion BMPs (Best Management Practices).
5. Maintenance practices for sediment and erosion BMPs.
6. Spill prevention and control facilities for materials such as paint, solvents, petroleum products, chemicals, toxic or hazardous substances, and substances regulated under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Other considerations should include: control of concrete truck washouts, and assurance that on-site fueling facilities will adhere to applicable federal and state regulations concerning storage and dispensers.

The requirements include (1) submission of the Stormwater Pollution Prevention Plan (SWPPP), (2) providing a copy of the Missouri Department of Natural Resources (MDNR) land disturbance permit, and (3) submittal of the completed grading permit application with a city grading permit fee. The backbone of

the requirements is the SWPPP, the plan followed by the contractor to address stormwater pollution prevention. The submittal requirements of the SWPPP are as follows:

1. Name, address and telephone number of the site owner and the name, address and telephone number of the individual who will be in charge of construction/development activities at the site.
2. Name, address and telephone number of the Land Disturbance Quality Control Officer.
3. Site address or location description of the site.
4. A site map showing the outlines of the total project area, the areas to be disturbed, existing land uses, locations and names of surface water bodies, locations of flood plains, and locations of erosion and sediment Best Management Practices (BMPs). Location and elevation of buildings, walks, drives, street and roads should be shown. Existing and proposed contours shall be shown at two foot elevation intervals.
5. The site plan and SWPPP document must be signed and sealed by a Professional Engineer licensed in the State of Missouri. The site plan must include a statement: "I, signature of P.E., certify that the SWPPP has been developed to minimize erosion and reduce sediment from entering any state, city, or privately owned waters to maximum extent practicable. I have verified any special conditions for this site and have incorporated such into the SWPPP. I shall amend the SWPPP whenever current SWPPP does not meet state standards for stormwater outfall requirements, site conditions change BMP requirements, excessive amounts of erosion have occurred and/or noticeable sediment has left the site. I understand that the SWPPP is developed to protect the water quality to the maximum extent practicable, and this may require modification to the SWPPP during the duration of the project. If the owner of properties name or Land Disturbance Quality Control Officer name contacts me to update or change the SWPPP and I agree, then the SWPPP will be updated within 72 hours of noted need of change to the SWPPP. If I disagree with amending the SWPPP and the changes are not required by Federal, State, or City requirements, then it should be noted that I take liability for any degradation of water quality that may occur by not making the requested amendment to the SWPPP. If changes are made to the SWPPP, I will publish all changes to the SWPPP with an indicator to all parties as to which copy is current."
6. The site plan must include a statement: "I, property owners signature. assume and acknowledge any land clearing, construction, or development involving the movement of earth shall be in accordance with the Stormwater Pollution Prevention Plan. I will maintain a current copy of the SWPPP on the site in a location visible to anyone entering the site. This will allow City personnel to perform quality assurance inspections when no one representing the SWPPP is on site. I will also maintain all site inspections with the SWPPP on site. I understand that the SWPPP is developed to protect the water quality to the maximum extent practicable and this may require modification to the SWPPP during the duration of the project. If the representative of the City of West Plains, the Land Disturbance Quality Control Officer, or the designer of the SWPPP, notifies me that the SWPPP needs to be amended, I will notify the designer of the SWPPP to ensure recommendations are considered."
7. The site plan must include a statement: "I, signature of Land Disturbance Quality Control Officer. am the agent of owner of properties name to insure that this site is in accordance with the Stormwater Pollution Prevention Plan. I will perform site inspections at least once per week and no later than 72 hours after a significant rain. These site inspections will be recorded on a Land Disturbance Quality Control Inspection form located in the City of West Plains Stormwater Management Manual. The purpose of such inspections will be to ensure proper installation, operation and maintenance of BMPs and to determine the overall effectiveness of the SWPPP, and the need for any additional control measures. If changes to the SWPPP are required I will notify the owner of properties name and Name of P.E. within 24 hours."
8. A copy of design calculations used for selection of the BMPs is included in the site plan.
9. The anticipated sequence of construction and land disturbance activities, including installation of BMPs, removal of temporary BMPs, stripping and clearing, rough grading, construction utilities, infrastructure, buildings and final grading and landscaping. Sequencing shall identify the expected date(s) on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.

10. Seeding mixtures and rates, types of sod, method of seed-bed preparation, depth of topsoil in final grading (if used), expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures. Steeper sloped areas may require specialized seed and mulching practices. Details on erosion control should be given on steep sloped areas. Watering methods and schedules will be included in order to establish vegetation during dry periods.
11. Details on access to the construction site.
12. The location of temporary off-street parking, and wash-down area.
13. Methods of removing sediment from city streets tracked from the site due to vehicles leaving by a method that does not allow the sediment to get into the City's storm sewers.
14. Sources of off-site borrow material or spoil sites, and all information relative to haul routes, trucks and equipment.
15. A description of BMPs to be utilized to prevent other potential pollutants such as construction waste, toxic or hazards substances, petroleum products, pesticides, herbicides, site litter, sanitary wastes and other pollutants from entering the natural drainage ways during the period of construction and land disturbance. This should include spill prevention and control facilities for materials such as paint, solvents, petroleum products, chemicals, toxic or hazardous substances, and substances regulated under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Other considerations should include (1) control of concrete truck washouts, (2) assurance that on-site fueling facilities will adhere to applicable federal and state regulations.
16. Methods to be used for dust abatement during dry periods of the year.
17. The amount of impervious area after completion.

If the amount of impervious area on the site is equal to or greater than one-half (1/2) acre, the City's post-construction requirements will be required. These requirements are discussed in Chapter V Post-Construction Stormwater Management. Guidance to meet the land disturbance and post-construction requirements will be published in the City of West Plains Stormwater Management Manual and are summarized in Chapter V Post-Construction section of this plan.

Enforcement of the land disturbance requirements will be set out in the land disturbance ordinance. This ordinance will require one acre or more of land disturbance to meet the requirements above but also allow the City to require erosion and sediment control measures on sites that have less than one acre of land disturbance if the City deems it necessary.

It is important that the requirements be addressed but it is just as important to have legal procedures in place to insure that when the requirements are not met the City can take appropriate action. The ordinance will cite the City of West Plains Stormwater Management Manual for requirements and guidance. The next method of ensuring enforcement of the land disturbance requirements is performing site inspections. Requirements 5, 6, and 7 of the SWPPP (on page 10 of this document) put the responsibility of the SWPPP on the owner of the property and his agent(s). The City representatives will provide the quality assurance by performing site inspections to ensure the owner and his agents are fulfilling the requirements.

Funding of the land disturbance program will be covered by the City of West Plains grading permit fee and stormwater utility fee.

C. Measurable Goals

| MCM #4<br>CONSTRUCTION SITE STORMWATER<br>RUNOFF CONTROL   | SWMP Element Description  | Implementation Schedule  |
|--|---|--|
| Newspaper article  | Publish an article on the need for erosion and sediment control on construction sites, Federal/State/City requirements, and invitation to free training for contractors and developers                                  | January 2009 – Year 2  |
| Land Disturbance Training for Contractors, Developers, and Land Disturbance Quality Control Officers | Presentation/educational classes for contractors and developers. The objective will be to provide education on construction site runoff, construction site cleanliness, BMPs, City Ordinance, Permits, SWPPPs, and etc. | February 2009 – Year 2<br>May 2009 – Year 2<br>August 2009 – Year 2<br>March 2010 – Year 3<br>March 2011 – Year 4  |
| Land Disturbance Training for Engineers  | SWPPP development and modifications   | February 2009 – Year 2<br>May 2009 – Year 2<br>August 2009 – Year 2<br>March 2010 – Year 3<br>March 2011 – Year 4  |
| Implement Land Disturbance Ordinance   | Enforcement mechanism   | Effective March 2009 – Year 2  |
| Stormwater Management Manual   | Cited in Land Disturbance Ordinance for requirements and guidance for land disturbance activity equal to or greater than one acre.  | Effective March 2009 – Year 2  |
| Land Disturbance Quality Assurance Inspections   | The City's Engineer will inspect and enforce all sites that have applied and been accepted for a grading permit using the Quality Assurance Land Disturbance Form in the Stormwater Manual                              | Conduct inspections on 100% of all sites approved for a grading permit. Number of sites inspected will be documented in annual report.<br><br>March 2009 - ongoing |
| Review & Issuing Grading Permits   | The City Engineer will review and approve SWPPPs and issue grading permits for sites equal to or greater than 1 acre of land disturbance.   | Conduct reviews of 100% of all sites 1 acre or more. The sites reviewed will be documented in annual report.<br><br>March 2009-ongoing                             |
| Permit/Site Plan Tracking System for Land Disturbance  | The city will use GPS, GIS, and Site Access to track all permits and site plans. This will quantify for the City the number of plans or permits in effect.  | Create a program and track 100% of permits and site plans. Number of permits and site plans will be documented in annual report.<br><br>March 2009 - ongoing       |

## Chapter V – POST-CONSTRUCTION STORMWATER MANAGEMENT

### A. Benefits of a Post-Construction Stormwater Program

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and design for the control of pollutants, peak discharge, and volume in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

There are generally two forms of substantial impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff occurs over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving body of water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

### B. Program Implementation

The goal of this minimum control measure is to improve stormwater quality and reduce total stormwater amount by using structural and non-structural best management practices for proposed and existing commercial and industrial developments, and residential subdivision developments.

#### Proposed developments

The mechanism used to meet this goal for proposed developments will be the development, implementation, and enforcement of post-construction measures for developments equal or greater than one-half (1/2) or more acres of impervious area. The intent and enforcement will come in the form of a stormwater ordinance. This ordinance will cite the City of West Plains Stormwater Management Manual for requirements and guidance.

All developments one (1) or more acres of impervious area will undergo a review and approval process. This review will require the development of a Stormwater Management Concept Plan (SWMCP), which must be sealed by a licensed engineer in the state of Missouri. The submittal requirements of the SWMCP are as follows:

1. Name, address and telephone number of the site owner and the name, address and telephone number of the individual who will be in overall responsible charge of site design.
2. Site address or location description of the site.
3. A site map showing the boundaries of the total project area, the areas to be developed, existing land uses, locations and names of bodies of surface water, locations of flood plains, locations of all proposed Best Management Practices (BMPs), and location of all proposed impervious areas; existing contours of the site and adjoining strips of off-site property and proposed contours after completion of the proposed development. Existing and proposed contours shall be shown at two foot contours.
4. Post-developed stormwater flow rates with locations where the flow is leaving the site.
5. Pre-developed stormwater flow rates with locations where the flow is leaving the site.
6. Design calculations used for the selection of Best Management Practices (BMPs) shown on the site map. The designer should consider BMPs that improve stormwater quality and reduce total stormwater peak discharge and volume to the maximum extent practical for the site. These

methods should include options that reduce the total amount of impervious area, filtering, and infiltration of stormwater on the site.

*or disconnected/dispose*

The City of West Plains will require BMPs for developments to restrict post stormwater flow rate to pre-developed flow rates. This will assist in reducing downstream flooding and erosion; extended detention time of stormwater on site can reduce transportation of sediment and possibly other pollutants from the site. This will also reduce the possibility of future litigations with downstream homeowners who may be subject to flooding caused by increased stormwater flows.

*be designed & implemented to*

The SWMCP must include more extensive best management practices; for example, reduction of impervious areas, filtering methods, and infiltration on the site. Guidance and references will be shown in the Stormwater Management Manual under the post- construction section. The SWMCP phase of planning of the stormwater controls on the site will require interaction of the City of West Plains and the design engineer to develop a concept that will reduce the discharge of stormwater and potential pollutants from the site to the maximum extent practicable (MEP). When the City of West Plains approves the specific concept in the SWMCP, the design engineer is required to submit the Stormwater Management Design Plan (SWMDP) when the final plans of the site are complete.

*disconnection/dispose*

The SWMDP will include the final design calculations for all stormwater infrastructure and must also include the approved concept design from the SWMDP. The submittal requirements of the SWMCP are as follows:

*including construction as described in local chapter and the post BMPs*

1. Name, address and telephone number of the site owner and the name, address and telephone number of the individual who will be in overall responsible charge of site design.
2. Site address or location description of the site.
3. A final site map showing the boundaries of the total project area, the areas to be developed, existing land uses, locations and names of bodies of surface water, locations of flood plains, locations of all Best Management Practices (BMPs), and location of all proposed impervious areas. Existing contours of the site and adjoining strips of off-site property and proposed contours after completion of the proposed development shall be included. Existing and proposed contours shall be shown at two foot contours.
4. Post- developed stormwater flow rates with locations where the flow is leaving the site.
5. Pre- developed stormwater flow rates with locations where flow is leaving the site.
6. Final design calculations used for selection of Best Management Practices (BMPs) and all stormwater pipes and structures.
7. Specifications for all stormwater infrastructure including BMPs and stormwater conveyance systems.

*might show them in stream like buffer*

The final site plan, including calculations performed by the engineer, and specifications must be sealed by an engineer licensed in the state of Missouri. The requirements and guidance for SWMCP will be located in the City of West Plains Stormwater Management Manual. The City will provide training to the engineer on requirements and guidance (see measurable goals below). Review and inspection of the requirements for new developments one (1) acre or more of impervious area will be performed by the City's Engineer for the City of West Plains.

When the SWMDP is approved by the City a construction permit will be issued with an inspection sheet tailored to the site. The inspection sheet will have a checklist for the stormwater inspector to follow in order to approve the construction of stormwater infrastructure at key points during the construction process. This will ensure that the infrastructure shown in the SWMDP is in place. The owner will not receive an operating permit until all the requirements of the inspection sheet are met. The owner will be required to pay a fee for the construction permit to help fund the inspection during the construction of the stormwater infrastructure. This cost incurred by the City for review and approval of the SWMCP and SWMDP will be covered by the stormwater utility fee, which will be explained in more depth in Chapter VII of this document.

This fee will also fund annual City inspections of the stormwater infrastructure. The City will also archive and track annual inspection data using database and global information system (GIS). This inspection program will allow the City to collect data on performance and maintenance requirements of specific types of BMPs. These data can be used to update the guidance section of the Stormwater Management Manual and the development for maintenance requirements to be included in operating permits. If an annual inspection shows the BMPs are not operating as intended, and/or require maintenance, the owner will receive a notice from the City to fix the issues within a prescribed period of time. If the owner does not make the required improvements to allow the BMPs to work as intended, the operation permit will be lifted. The lifting of the operating permit will place the owner in violation per the ordinance and lose any stormwater utility fee credits.

Individual homeowners that have on-site BMPs and receive a stormwater utility fee credit will also have a required operating permit and will require annual inspections. If their annual inspections show the BMPs are not operating properly, or require maintenance, the City will handle the situation the same as other developments that operate BMPs.

Existing developments and homeowners

All impervious area in the city limits of West Plains will be subject to a stormwater utility fee, with the exception of City and State properties, and public streets. All land owners will be required to pay on impervious areas located on their individual properties. All concrete, asphalt, rooftop, gravel, or all other objects that are impervious will be subjected to the fee. The funding requirements of the fee are shown in Chapter VII of this Stormwater Management Plan. Existing developments and existing homeowners will have an incentive to incorporate BMPs to receive credits and reduce the fee. Any impervious area that is connected to a BMP will not be considered as impervious area. This will reduce their monthly utility fee.

Existing developments may install BMP's or reduce impervious area to reduce their monthly utility fee. Developments with (1/2) acre or more of impervious area will be subject to the same process as proposed developments, which will include retaining an engineer to develop a SWMCP and SWMDP and obtain a construction permit, and follow by obtaining an operating permit.

Existing homeowners who are considering implementing BMPs should follow the process and guidance document "Homeowners guide to implementing BMPs". This process requires working with the City but does not require retaining an engineer. After approval by the City, a construction permit, followed by an operating permit, will be issued by the City.

Other BMPs that do not reduce the amount of impervious area will be enforced by ordinances or the City will provide training and recommend that the homeowner implement them. The following BMPs will be enforced with ordinances: Animal waste ordinance, debris and yard waste, litter control, and disposal of waste.

The City will require pet owners to pick up and properly dispose of pet waste except on their own property. In parks, disposal of waste will be available on site by a pet waste scoop dispenser and signage to notify visitors of the requirement. Enforcement of waste on someone's own property by their animals will be voluntary unless smell or water quality issues require action by the City.

The City will develop a program to collect items not considered sanitary trash, like hazardous waste products.

The City will <sup>require</sup> recommend stream buffers and proper application rates for herbicides, pesticides and fertilizer.

*Handwritten notes:*  
- A diagonal line is drawn through the text "The City will recommend stream buffers...".  
- The word "require" is written above "recommend" with an arrow pointing to "require".  
- The word "recommend" is written above "recommend" with an arrow pointing to "recommend".  
- The words "split into 2 parts" are written vertically below the diagonal line.  
- The words "checklist", "BMP Guide", "training for staff", and "inspection sheet" are written in a list below the main text.  
- An arrow points from the right side of the page towards the handwritten notes.

C. Measurable Goals

| MCM #5<br>POST-CONSTRUCTION STORM<br>WATER MANAGEMENT | SWMP Element Description   | Implementation Schedule  |
|---|--|--|
| Newspaper article                                     | Article on the need for post-construction control, Federal/State/City requirements, possible fee reduction for homeowners, and invitation to free training for homeowners and engineers.   | January 2011 – Year 4  |
| Training for homeowners                               | Presentation/educational classes for homeowners handling and applying herbicides, pesticides and fertilizer. Ways to receive stormwater credits and reduce stormwater utility fee by using "Homeowners guide to implementing BMPs"         | February 2011 – Year 4<br>May 2011 – Year 4<br>August 2011 – Year 4  |
| Training for engineers                                | Presentation/educational classes for engineers. The objective will be to educate on post-BMPs, City's requirements   | January 2011 – Year 4<br>April 2011 – Year 4<br>June 2011 – Year 4   |
| Implement Animal Waste Ordinance                      | Enforcement mechanism  | Effective February 2011 – Year 4   |
| Implement Post-Construction Ordinance                 | Enforcement mechanism  | Effective February 2011 – Year 4   |
| Implement Stream Buffer Ordinance                     | Enforcement mechanism  | Effective February 2011 – Year 4   |
| Stormwater Management Manual                          | Cited in Post-Construction Ordinance for requirements and guidance for developments with an impervious area equal to or greater than one (1) acre.   | Effective February 2011 – Year 4   |
| Quality Assurance Inspections                         | The City Engineer will inspect construction of stormwater infrastructure in accordance with the inspection sheet issued with the construction permit. The requirements of the inspection sheet must be met to receive an operation permit. | Conduct inspections on 100% of all sites. Number of sites inspected will be documented in annual report.<br>February 2011 – ongoing  |
| Review & Issuing Construction and Operating Permits   | The City Engineer will review and approve SWMCP, SWMDP, and issue construction and operating permits for developments with an impervious area equal to or greater than one (1) acre of area.   | Conduct reviews of 100%. The number of sites reviewed will be documented in the annual report.<br>February 2011 - ongoing  |
| Permit/Site Plan Tracking System                      | The City will use GPS, GIS, and Access to track all construction permits, operating permits, and inspections.  | Create a program and track 100% of construction permits, operating permits, and inspections. Number of permits and inspections will be documented in annual report.<br>February 2011 - ongoing |

Construction  
 Frequency  
 ↑  
 Checklist/audit-sheet

## **Chapter VI – POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

### **A. Benefits of a Pollution Prevention/Good Housekeeping Program**

The Pollution Prevention/Good Housekeeping Operations is a key element of the Stormwater Management Program. This measure requires the examination and subsequently altered actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas, all of which is discharged into local waterways; and (2) results from actions such as street maintenance, environmentally damaging municipal land development and flood management practices, or poor maintenance of storm sewer systems. While this measure is meant primarily to improve or protect receiving water quality by altering municipal activities, facility operations and property management, the City of West Plains can also realize cost savings from such things as spill prevention (thus reducing clean-up costs), inventory control, and re-use/recycling of materials.

### **B. Program Implementation**

During the five years of tenure of the Stormwater Management Program Plan, the City of West Plains will be bringing the awareness of stormwater quality into the homes of most citizens of the City of West Plains. Some of these citizens may resist the requirements implemented to ensure the City meets Federal and State regulations. Due to this expected resistance the City needs to be the strongest advocate and make sure it is meeting the same requirements.

The City will develop and implement an operation and maintenance program. The main intent of the program is the prevention of pollutant runoff from municipal operations. In order to achieve this, the City will check all facilities for possible illicit discharges. For example, some of the floor drains may be connected to a storm sewer and someone pours something down the drain that is considered a pollutant, thus it becomes an illicit discharge. The operation and maintenance program will follow guidance in the City's Operation and Maintenance Manual. The manual will consider the following topics:

1. Locations of all City infrastructure.
2. Description of the facilities and activities they perform.
3. Identification of all activities that may cause pollutant runoff.
4. Determination of Best Management Practices (BMPs) that could mitigate the risk of pollutant runoff. This will include spill prevention and control facilities for materials such as paint, solvents, petroleum products, chemicals, toxic or hazardous substances, and substances regulated under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Requirements for on-site fueling facilities in conformance with federal and state regulations concerning dispensing and storage.
5. Required annual training by the City on BMPs for each facility.
6. Inspection requirements.
7. Rewards and enforcement methods.

The City will also consider implementing additional environmentally enhancing practices in the manual that are not required for each City facility, for example:

1. Materials/Supplies acquisition, storage and usage, including
  - a. material description.
  - b. maximum quantity kept on hand,
  - c. allowable storage times, and
  - d. storage location.

2. Waste generation, storage, disposal, recycling with the following information:

- a. Waste description
- b. Maximum storage capacity
- c. Storage location
- d. Method of disposal
- e. Pickup times, contractor name
- f. Frequency

**C. Measurable Goals**

| <b>MCM #6<br/>POLLUTION PREVENTION/GOOD<br/>HOUSEKEEPING FOR<br/>MUNICIPAL OPERATIONS</b> | <b>SWMP Element Description</b>   | <b>Implementation Schedule</b>  |
|---|---|---|
| Complete and Implement O&M Manual for Municipal Operations                                | Guidance manual   | May 2012 – Year 5   |
| Training for City Employees   | City operation and maintenance manual   | June 2012 – Year 5  |
| Inspections   | The City Department of Public Works will perform inspection following requirements of City operation and maintenance manual | Complete inspection form on 25% of City facilities<br><br>October 2012 – Year 5 |

## **Chapter VII – FUNDING**

### **A. Need for Funding**

Stormwater management is a state and federally mandated program that requires the City to regulate stormwater runoff in an effort to control the quantity and quality of stormwater. This mandate does not require the state or federal government to provide funding for this program. Therefore, revenue sources needed to fund the mandate must be identified, and a fair way to do so is by establishing a stormwater utility fee, based on the amount of runoff from a property. This fee, authorized in the City of West Plains Stormwater Ordinance will pay for stormwater services that include public education, storm sewer inspection, cleaning, maintenance and repair, and administrative costs that are associated with stormwater management. Practices and capital improvement projects that help improve water quantity and quality will also be funded, at least in part, by the fee structure, including new storm sewer construction and changes to existing system problems. This fee is applied to owners of developed property that contain impervious areas, such as a building or a paved area or any impenetrable surface. The fee applies to all property within the City; both residential and non-residential owners, to commercial and industrial property, and churches and government owned property. Residential property owners including single family homes, mobile homes, multi-family dwellings and condominiums will have an applied fee.

### **B. Estimated Cost**

The estimated cost of implementing this program from March 2008 to March 2013 is shown on the following pages.

| <b>YEAR 1</b>   |                               |                      |
|---|-------------------------------|----------------------|
| <b>ITEM</b>   | <b>WHO IS PERFORMING WORK</b> | <b>COST</b>          |
| Administrator of Stormwater Program                                   | City and/or Consultant        | \$60,000 (Full time) |
| Populate GIS  | City and/or Consultant        | \$20,000 (1/3 time)  |
| Stormwater Management Manual & Ordinances*                            | Consultant                    | \$40,000             |
| Stormwater Management Plan*   | City and/or Consultant        | \$23,500             |
| Final Annual Report for Last Permit Cycle*                            | Consultant                    | \$4,000              |
| Six newspaper articles "Impacts of Stormwater"                        | City and/or Consultant        | \$12,000             |
| Four presentations "Impacts of Stormwater"                            | City and/or Consultant        | \$24,000             |
| Complete newsletter "A Citizen's Guide to Understanding Stormwater"   | City and/or Consultant        | \$22,000             |
| Distribute newsletter "A Citizen's Guide to Understanding Stormwater" | City and/or Consultant        |                      |
| Presentation "A Citizen's Guide to Understanding Stormwater"          | City and/or Consultant        | \$8,000              |
| Three Call-in Radio Shows   | City and/or Consultant        | \$4,500              |
| Elementary and Middle School presentations                            | City and/or Consultant        | \$7,500              |
| Presentation and promotion of Stormwater Utility and Ordinance*       | City and/or Consultant        | \$7,500              |
| Annual Report for Year 1  | Consultant                    | \$2,000              |
| Community Clean-up  | City and/or Consultant        | \$1,500              |
| Storm Sewer Stenciling  | City and/or Consultant        | \$1,500              |
| Stream Team   | City and/or Consultant        | \$1,500              |
| <b>Total for Year 1</b>   |                               | <b>\$239,500</b>     |

\* Existing Contracts with Consultant

| <b>YEAR 2</b>  |   |                      |
|--|---|----------------------|
| <b>ITEM</b>  | <b>WHO IS PERFORMING WORK</b>   | <b>COST</b>          |
| Administrator of Stormwater Program/Inspector  | City and/or Consultant  | \$60,000 (Full time) |
| Stormwater Inspector   | City and/or Consultant  | \$60,000 (Full time) |
| Populate GIS   | City and/or Consultant  | \$20,000 (1/3 time)  |
| Newspaper article for land disturbance   | City & Consultant   | \$2,000              |
| Land Disturbance training for Contractors, Developers, Quality Control Inspectors                              | Consultant<br>February 2009 – Year 2<br>May 2009 – Year 2<br>August 2009 – Year 2 | \$11,500             |
| Land Disturbance Training for Engineers  | Consultant<br>February 2009 – Year 2<br>May 2009 – Year 2<br>August 2009 – Year 2 | \$11,500             |
| Implement Land Disturbance Ordinance   | Consultant and/or Consultant  | Paid Year 1          |
| Stormwater Management Manual   | Consultant  | Paid Year 1          |
| Quality Assurance Inspections for Land Disturbance   | City and/or Consultant  | \$12,500             |
| Review SWPPPs  | Consultant  | \$20,000             |
| Permit/Site Plan Tracking System for Land Disturbance  | City and/or Consultant  | \$12,500             |
| "Hotline" Service  | City and/or Consultant  | \$1,500              |
| Annual Report for Year 2   | Consultant  | \$2,000              |
| Community Clean-up   | City and/or Consultant  | \$500                |
| Storm Sewer Stenciling   | City and/or Consultant  | \$500                |
| Stream Team  | City and/or Consultant  | \$500                |
| City – Repair of storm sewer, maintenance of storm sewers, construction of BMPs, reports, studies, and designs | Construction, Consultant  | \$235,000            |
| <b>Total for Year 2</b>  |   | <b>\$450,000</b>     |

| <b>YEAR 3</b>  |                                   |                      |
|--|-----------------------------------|----------------------|
| <b>ITEM</b>  | <b>WHO IS PERFORMING WORK</b>     | <b>COST</b>          |
| Administrator of Stormwater Program/Inspector  | City and/or Consultant            | \$60,000 (Full time) |
| Stormwater Inspector   | City and/or Consultant            | \$60,000 (Full time) |
| Populate GIS   | City and/or Consultant            | \$20,000 (1/3 time)  |
| Land Disturbance Training for Contractors, Developers, and Quality Control Inspectors                          | Consultant<br>March 2010 – Year 3 | \$2,500              |
| Land Disturbance Training for Engineers  | Consultant<br>March 2010 – Year 3 | \$2,500              |
| Quality Assurance Inspections for Land Disturbance   | City and/or Consultant            | \$12,500             |
| Review SWPPPs  | Consultant                        | \$20,000             |
| Hazardous waste pickup program   | City and/or Consultant            | \$10,000             |
| Newspaper article for Illicit Discharge  | Consultant                        | \$2,500              |
| Implement illicit discharge Ordinance  | Consultant                        | Paid in Year 1       |
| Storm Sewer Map  | City and/or Consultant            | \$15,000             |
| Field Data Inspections for Illicit discharge   | City and/or Consultant            | \$5,000              |
| Spill Response plan  | City and/or Consultant            | \$5,000              |
| Permit/Site Plan Tracking System for Land Disturbance  | City and/or Consultant            | \$6,000              |
| "Hotline" Service  | City and/or Consultant            | \$1,500              |
| Annual Report for Year 3   | Consultant                        | \$2,000              |
| Community Clean-up   | City and/or Consultant            | \$500                |
| Storm Sewer Stenciling   | City and/or Consultant            | \$500                |
| Stream Team  | City and/or Consultant            | \$500                |
| City – Repair of storm sewer, maintenance of storm sewers, construction of BMPs, reports, studies, and designs | Construction, Consultant          | \$224,000            |
| <b>Total for Year 3</b>  |                                   | <b>\$450,000</b>     |

| <b>YEAR 4</b>  |   |                      |
|--|---|----------------------|
| <b>ITEM</b>  | <b>WHO IS PERFORMING WORK</b>   | <b>COST</b>          |
| Administrator of Stormwater Program/Inspector  | City and/or Consultant  | \$60,000 (Full time) |
| Stormwater Inspector   | City and/or Consultant  | \$60,000 (Full time) |
| Populate GIS   | City and/or Consultant  | \$20,000 (1/3 time)  |
| Review SWPPPs  | Consultant  | \$20,000             |
| Hazardous waste pickup program   | City and/or Consultant  | \$10,000             |
| Newspaper article for Post-Construction and possible fee reduction for homeowners that use BMPs                                  | Consultant  | \$2,500              |
| Land Disturbance Training for Contractors, Developers, and Quality Control Inspectors  | Consultant<br>March 2011 – Year 4   | \$2,500              |
| Land Disturbance Training for Engineers  | Consultant<br><br>March 2011 – Year 4   | \$2,500              |
| Training for homeowners for Post-construction BMPs, Stormwater Credits, herbicides, pesticides, and fertilizer                   | Consultant<br>February 2011 – Year 4<br>May 2011 – Year 4<br>August 2011 – Year 4 | \$20,000             |
| Training for engineers for Post-construction design and requirements   | Consultant<br>January 2011 – Year 4<br>April 2011 – Year 4<br>June 2011 – Year 4  | \$14,500             |
| Implement Animal Waste Ordinance   | Consultant  | Paid in Year 1       |
| Implement Post Construction Ordinance  | Consultant  | Paid in Year 1       |
| Implement Stream Buffer Ordinance  | Consultant  | Paid in Year 1       |
| Stormwater Management Manual   | Consultant  | Paid in Year 1       |
| Quality Assurance Inspections for Land Disturbance and Post-Construction Operating Permit inspections for Post Construction BMPs | City and/or Consultant  | \$12,500             |
| Review SWMCP & SWMDP   | Consultant  | \$20,000             |
| Permit/Site Plan Tracking System for Land Disturbance and Post Construction BMPs   | City and/or Consultant  | \$5,000              |
| Field Data Inspections for Illicit discharge   | City and/or Consultant  | \$3,000              |
| "Hotline" Service  | City and/or Consultant  | \$1,200              |
| Annual Report for Year 4   | Consultant  | \$2,000              |
| Community Clean-up   | City and/or Consultant  | \$500                |
| Storm Sewer Stenciling   | City and/or Consultant  | \$500                |
| Stream Team  | City and/or Consultant  | \$500                |
| City – Repair of storm sewer, maintenance of storm sewers, construction of BMPs, reports, studies, and designs                   | Construction, Consultant  | \$192,800            |
| <b>Total for Year 4</b>  |   | <b>\$450,000</b>     |

**YEAR 5**

| <b>ITEM</b>  | <b>WHO IS PERFORMING WORK</b> | <b>COST</b>          |
|--|-------------------------------|----------------------|
| Administrator of Stormwater Program/Inspector  | City and/or Consultant        | \$60,000 (Full time) |
| Stormwater Inspector   | City and/or Consultant        | \$60,000 (Full time) |
| Populate GIS   | City and/or Consultant        | \$20,000 (1/3 time)  |
| Review SWPPPs  | Consultant                    | \$20,000             |
| Hazardous waste pickup program   | City and/or Consultant        | \$10,000             |
| Complete and Implement O&M Manual for Municipal Operations   | Consultant                    | \$12,000             |
| Develop Training for City Employees  | Consultant                    | \$4,000              |
| Implement Training for City Employees  | City and/or Consultant        | \$8,000              |
| Inspections of City Facilities   | City and/or Consultant        | \$5,000              |
| Quality Assurance Inspections for Land Disturbance and Post-Construction                                       | City and/or Consultant        | \$12,500             |
| Operating Permit Inspections for Post Construction BMPs  |                               |                      |
| Review SWMCP & SWMDP   | Consultant                    | \$20,000             |
| Permit/Site Plan Tracking System for Land Disturbance and Post-Construction BMPs                               | City and/or Consultant        | \$6,000              |
| Field Data Inspections for Illicit discharge   | City and/or Consultant        | \$3,000              |
| Public Facilities, Commercial, and industrial Inspections for Illicit discharge                                | City and/or Consultant        | \$5,000              |
| "Hotline" Service  | City and/or Consultant        | \$1,200              |
| Annual Report for Year 5   | Consultant                    | \$2,000              |
| Community Clean-up   | City and/or Consultant        | \$500                |
| Storm Sewer Stenciling   | City and/or Consultant        | \$500                |
| Stream Team  | City and/or Consultant        | \$500                |
| City – Repair of storm sewer, maintenance of storm sewers, construction of BMPs, reports, studies, and designs | Construction, Consultant      | \$199,800            |
| <b>Total for Year 5</b>  |                               | <b>\$450,000</b>     |

### C. Stormwater Utility Fee

Based on the funding of \$450,000/yr and an estimate of 41,400,000 ft<sup>2</sup> of impervious area the following monthly fee per a square foot would be charged.

$$\frac{\$450,000}{41,400,000 ft^2} = \$0.011 ft^2$$

The estimated total square feet of impervious area is based on the following:

1. Average resident has 4500 ft<sup>2</sup> of impervious area.
2. 4600 residents
3. Commercial impervious area is equal to the amount of residential impervious area.

This is a rough estimate of total area; the amount will change with more accurate estimates of total impervious area. Based on this total amount of impervious area some estimates of monthly rates follows:

Average house with paved driveway would pay \$4.13 month.

An average size church with a paved parking lot would be \$30 month.

Large commercial building with parking lot would pay \$661 month.