

**TOWN
OF
ZIONSVILLE, INDIANA**

**STORM WATER QUALITY
MANAGEMENT PLAN
Part C: Program Implementation**

Submitted in Accordance with Requirements of 327 IAC 15-13

January 2005

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I. INTRODUCTION

As a designated Municipal Separate Storm Sewer System (MS4) entity, the Town of Zionsville is required to develop and implement a Storm Water Quality Management Plan (SWQMP) in accordance with federal and state regulations. The town has previously complied with requirements to submit an “SWQMP-Part A: Initial Application” and an “SWQMP-Part B: Baseline Characterization and Report” in accordance with 327 IAC 15-13. This current document constitutes the required “Part C” submittal that outlines the town’s plan to implement and enforce a storm water quality management program designed to reduce the discharge of pollutants to the "maximum extent practicable", to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act (CWA) in accordance with the Indiana Department of Environmental Management NPDES stormwater Phase II program. The SWQMP addresses the six minimum control measures (MCMs) required by federal and state regulations.

II. BACKGROUND

The 1972 CWA introduced the National Pollutant Discharge Elimination System (NPDES). The NPDES program was established as the principal regulatory mechanism of the CWA, requiring direct dischargers of pollutants into waters of the United States to obtain an NPDES permit. Between 1972 and 1987, the NPDES permit program focused on improving surface water quality by reducing pollutants from direct “point source” discharges of industrial process wastewater and municipal sewage. During this period, several nationwide studies on water quality identified storm water runoff as an additional significant source of water pollution. New elements of the reauthorized CWA in 1987 established a legal framework for and required USEPA to develop a comprehensive phased program for regulating municipal and industrial storm water discharges under the NPDES permit program.

The federal NPDES Phase I rule, issued in November 1990, addressed storm water discharges from medium to large municipal separate storm sewer systems (MS4s), which were communities serving a population of at least 100,000 people, as well as storm water discharges from industrial activity. The City of Indianapolis was the only municipality affected in Indiana. The ruling also placed permitting requirements on some construction activities, with a particular focus on erosion and sediment control from developing areas. The NPDES Phase II rule, which was promulgated in December 1999, addresses small municipal separate storm sewer systems (MS4s) serving a population of less than 100,000 people in urbanized areas. The rule requires all MS4s located within urbanized areas (as defined by the Bureau of the Census) to comply with the Phase II Storm Water regulations. The Town of Zionsville is one of these affected MS4 entities.

III. REQUIREMENTS

The requirements that the town must fulfill, as specified by 327 IAC 15-13, are:

“a) An MS4 operator shall develop and implement an SWQMP-Part C: Program Implementation. The SWQMP-Part C: Program Implementation must contain the following:

- (1) An initial evaluation of the storm water program for the MS4 area. This evaluation should include information on all known structural and nonstructural storm water BMPs utilized.*
- (2) A detailed program description for each minimum control measure (MCM) referenced in sections 12 through 17 of this rule.*
- (3) A timetable for program implementation milestones, which includes milestones for each of the MCMs referenced in sections 12 through 17 of this rule, and applicable SWQMP-Part B: Baseline Characterization and Report conclusions (BMP recommendations, additional protective measures for sensitive areas, and correcting identified water quality problems).*
- (4) As appropriate, a schedule for on-going characterization of the receiving waters either at, or in proximity to, outfall locations identified in the SWQMP-Part B: Baseline Characterization and Report to evaluate BMP effectiveness and receiving water quality.*
- (5) A narrative and mapped description of the MS4 area boundaries that indicate responsible MS4 entity areas for each MCM. The narrative description must include the specific sectional or, as appropriate, the street name, boundaries of the MS4 area.*
- (6) An estimate of the linear feet of MS4 conveyances within the MS4 area, segregated by MS4 type, for example, by open ditch or pipe.*
- (7) A summary of which structural BMP types will be allowed in new development and redevelopment for the MS4 area.*
- (8) A summary of storm water structural BMP selection criteria and, where appropriate, associated performance standards that must be met after installation to indicate BMP effectiveness.*
- (9) A summary of the current storm water budget, expected or actual funding source, and a projection of the budget for each year within the five (5) year permit term.*
- (10) A summary of measurable goals for, at a minimum, each MCM referenced in sections 12 through 17 of this rule.*
- (11) Completed certification forms, as appropriate, for each MCM.*
- (12) The identification of programmatic indicators. Programmatic indicators, grouped by corresponding MCM, must include those listed in subsection (b) that apply to the MS4 operator. Programmatic indicators do not need to be fully implemented at the time of the SWQMP-Part C: Program Implementation submittal.”*

IV. INITIAL EVALUATION OF THE TOWN OF ZIONSVILLE'S EXISTING STORMWATER PROGRAM

The Town of Zionsville has not yet developed a comprehensive stormwater management strategy, but it has become apparent to town leaders that work is needed in that regard. From a stormwater *quantity* management perspective, there are older areas of the town that have stormwater conveyance systems not always capable of preventing localized flooding, or no systems whatsoever in some locations. Nearly all subdivisions built in or around the town since 1970 have been constructed with subsurface storm sewers. Residential developments built since approximately 1985, as well as commercial developments, have stormwater detention facilities – either dry or wet impoundment areas.

The majority of the town's land is – or is expected to be – developed for residential and light commercial use, the stormwater pollution potential of which is typically limited to relatively few parameters such as eroded soil, nutrients, hydrocarbons, and pathogens. Potentially more stormwater-problematic industrial development will be generally constrained to the southeastern portion of the town.

Development-related stormwater management is currently addressed by the Town through its design and construction standards. The Town's legal jurisdiction over zoning and development provides authority to control activities associated with land development and construction within its corporate boundaries as established by ordinance(s). The Town contracts with an engineering firm to review and evaluate all construction-related project plans to assure conformance with Town standards. The standards require compliance with 327 IAC 15-5. The Town has an excellent working relationship with the Boone County Soil and Water Conservation District, whose employee coordinates with the Town's engineering consultant and building inspector to assure compliance with Rule 5.

The Town owns a street sweeper that it uses in the course of two routine and total sweeping of public streets. The first programmed round of street sweeping occurs in the spring to collect residue from winter applications of salt and sand used for street de-icing and snow control. The second programmed round occurs in late fall after curbside leaf collection is complete to collect debris accumulated during the vacuuming of leaves piled by town residents. Additionally, this machine also makes one round in the spring season and vacuums sediment and debris from street-side storm water catch basins. Beyond the aforementioned routine tasks, the street sweeper is employed as needed for the preparation and clean-up of town-wide special events (parades, etc.), as well as whenever foreign material is deposited on the public streets from trucks hauling loose or leaky loads.

Although there has not been formal coordination with the Town, there have been (and continue to be) independent efforts by different organizations to evaluate and guide the

management of stormwater-related pollution in the greater Eagle Creek watershed, which includes the Zionsville MS4 area.

One of those organizations, the Eagle Creek Watershed Task Force (ECWTF), was formed in 1997. The group has been involved in water quality sampling efforts – with a special emphasis on agricultural herbicides and coliform bacteria – collecting samples from ten sites in the greater Eagle Creek watershed. The task force’s ultimate goal is to develop and implement a watershed-wide water pollution control management strategy.

Another group, the Central Indiana Water Resources Partnership (CIWRP), is a long-term research and development partnership. It is a cooperative program through which IUPUI’s Center for Earth and Environmental Science (CEES) interfaces with research and development and engineering networks and organizations maintained by Veolia Water Indianapolis, the contracted operator of the Indianapolis Water Company.

CIWRP conducted initial research and prepared a report in 2003 that provided the initial foundation for characterization of the Eagle Creek watershed. The research program outlined in the report represents the first phase of a comprehensive watershed-scale research effort that is expected to be continued over the course of 3 to 5 years. The initial report provides the framework for establishing a mass balance approach to model the relationships between the watersheds and the receiving reservoirs.

The only notable structural stormwater “best management practices” (BMPs) that are known to exist in the MS4 area are privately owned detention/retention basins installed to slow stormwater runoff, specifically in response to ordinances related to stormwater quantity management. Secondarily, the structures can be somewhat useful in capturing eroded soil, but that has not been their intended function.

The Town has broached the idea of creating a stormwater utility, in the context of water *quantity* management and maintenance of the infrastructure necessary to convey stormwater. If it is deemed feasible to do so, such an effort would be very complementary to Rule 13-related activities.

There will be opportunities to work cooperatively with the Boone County Drainage Board and County Surveyor since several stormwater conveyance systems in the town are county “regulated drains”. The County Surveyor is assuming primary responsibility for the county’s MS4 area and is interested in working with Zionsville and with the City of Lebanon – also an MS4 entity – to coordinate efforts on such matters as public education and erosion and sediment control.

For several years the Town has contracted with a waste hauling firm to provide weekly curbside recycling collection services for all Town residents. The contract requires the collection of glass, newspaper, aluminum and steel containers, corrugated cardboard and selected plastics.

V. MINIMUM CONTROL MEASURES (MCMs) – OVERVIEW

The state regulation requires a detailed program description for each of the six specified “minimum control measures” (MCMs). The following is a list of the MCMs and general descriptions of ways in which they can be applied to fulfill the rule requirements:

1. Public Education and Outreach

Distributing educational materials and informing the public about the impacts polluted stormwater runoff discharges can have on water quality.

The key to implementing and managing an effective storm water management program should begin with community awareness and involvement. With this, greater support should be achieved as the public gains an understanding of the reasons why storm water management is necessary and important. Public support should also be beneficial if the town attempts to institute new funding initiatives or recruit volunteers. In addition, greater compliance with program requirements should be realized as individuals become aware of their role in protecting the environment and their ability to impact the quality of local waterbodies.

2. Public Participation and Involvement

Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a storm water management panel.

The public can provide valuable input and assistance toward implementing a Phase II storm water management program. The state regulation requires public participation and involvement in the development and implementation of a storm water quality management program. Providing the public with an opportunity to develop the program should help to broaden public support, increase the number of potential ideas to meet the permitting requirements, provide a conduit to other community and government programs and shorten the implementation schedules.

3. Illicit Discharge Detection and Elimination

Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system.

To eliminate illicit discharges into the public storm sewer system, the town will be required to develop a strategy to detect and eliminate such discharges. An illicit discharge has been defined by the EPA as “any discharge into a separate storm sewer system that is not composed entirely of storm water”. Typically, illicit discharges enter a storm sewer system either through direct connections, *e.g.*, sanitary sewer piping, or indirectly from cracked

sanitary sewer conveyance systems, spills collected by storm drains, or from contaminants dumped directly into a storm drain inlet. Pollutants associated with illicit discharges include heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria. These untreated discharges have the potential to cause significant degradation to receiving waterbodies. The following are typical examples of illicit discharges:

- Sanitary wastewater
- Effluent from septic tanks
- Laundry wastewater
- Commercial car wash discharges
- Improper disposal of household or automotive toxics
- Spills from roadway accidents

4. Construction Site Runoff Control

Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land.

Polluted stormwater from construction sites is often conveyed to storm sewer systems that ultimately discharge into lakes and streams. During a small storm event, both large and small construction sites can contribute significant quantities of pollutants to receiving waterbodies. Although eroded soil is the primary concern, other contaminants include nutrients, pesticides, oil and grease, concrete truck washout and construction chemicals and debris. Larger construction sites typically utilize an on-site refueling apparatus that presents a clear threat due to fueling spillage as well as improperly maintained tank systems.

5. Post-Construction Runoff Control

Developing, implementing, and enforcing a program to address discharges of post-construction storm water runoff from new development and redevelopment areas.

Post-construction stormwater management is necessary because runoff from areas that have undergone development can significantly impact receiving waterbodies. This impact typically occurs in two forms. First is an increase in the type and quantity of pollutants in stormwater runoff. As water flows over the developed sites, it transports contaminants such as oil and grease, pesticides, heavy metals and various nutrients (*e.g.*, nitrogen and phosphorus). These pollutants can become suspended in the runoff and be conveyed to receiving water bodies, such as Eagle Creek and Eagle Creek Reservoir. The second impact results from increased stormwater runoff rates and volume due to greater amounts of impervious surface (buildings and paved areas). This increase in runoff has not only been shown to interrupt percolation of water into the ground, but also to impact receiving waterbodies through streambank scouring and downstream flooding.

6. Municipal Operations Pollution Prevention/Good Housekeeping

Developing and implementing a program with the goal of preventing or reducing pollutant runoff from the town's operations, to include town staff training on pollution prevention measures and techniques.

This MCM involves the examination and possible alteration of the town's own operations. This measure requires that the town evaluate its actions to ensure a reduction in the amount and types of pollutants that are generated by town employees' activities and/or accumulate on streets, parking lots, open spaces, and in storage and vehicle maintenance areas that discharge into local waterbodies. The primary intent of this measure is to improve and protect water quality by altering the performance of the town's operations. However, it is thought that this measure could ultimately result in increased cost savings for the town through proper and timely maintenance of storm sewer systems.

The town is currently in the process of relocating its old salt and sand storage facility, which abuts a minor creek, to an area within its Municipal Services Building compound that can be more easily monitored and maintained.

VI. MINIMUM CONTROL MEASURES – TOWN OF ZIONSVILLE PROGRAM DESCRIPTIONS

PUBLIC EDUCATION AND OUTREACH MCM

327 IAC 15-13-12 (a) states that:

“An MS4 operator shall develop an SWQMP that includes methods and measurable goals that will be used to inform residents, visitors, public service employees, commercial and industrial facilities, and construction site personnel within the MS4 area about the impacts polluted storm water run-off can have on water quality and ways they can minimize their impact on storm water quality. The MS4 operator shall ensure, via documentation, that a reasonable attempt was made to reach all constituents within the MS4 area to meet this measure.”

To satisfy this MCM, Zionsville must implement a public education program regarding the importance of proper storm water management. At a minimum, the town must perform the following general tasks:

- Implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities to communicate the impacts of storm water discharges on local water bodies. In addition, this program must address steps that can be taken to reduce storm water pollution; and
- Identify and apply appropriate methods (best management practices) and measurable goals for developing a public education and outreach program.

USEPA believes that three main action areas are important for successful implementation of a public education and outreach program:

- Forming partnerships with governmental, environmental, civic and industrial organizations.
- Using educational materials and strategies, such as brochures, posters, educational displays at events, telephone hotlines and educational programs for school children.
- Reaching diverse audiences through a mix of appropriate local strategies to address the viewpoints of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.

Because of the town’s relatively small size, its lack of knowledgeable personnel eligible to be assigned responsibilities related to this subject, and the challenges inherent to the initiation of a process for educating the public about a concept that is unfamiliar to the average person, the town’s approach to this requirement will be measured and deliberate.

327 IAC 15-13-12 (c) stipulates that:

“MS4 operators shall develop measurable goals for this MCM. An initial assessment of the MS4 area constituents must be conducted to determine initial constituent knowledge and practices as they relate to storm water quality. To comply with this measure, specific target outreach or reduction goal percentages and timetables must be identified. As applicable or, if not applicable, then appropriately justified, goals must address relevant targeted audience improvement in disposal practices, cast storm drain cover installations, school curricula or web site implementation, outreach to every population sector, and educational material distribution.”

IDEM’s guidance explains that the required “**assessment**” can consist of a public survey.

Actions and Measurable Goals

1. Assessment

The Town will conduct a survey of the general public to gauge understanding of stormwater-related issues. By November 1, 2005, an appropriate survey method will be devised and the assessment will be performed. By November 1, 2008, a second survey will be conducted to determine the extent to which public knowledge has increased during the preceding years.

The expense associated with this task is estimated to be \$3500.00 for the development and two direct mailings to approximately 3500 households. Although no specific budget line item has been established within any town fund, utilization of existing printing and reproduction budget items will be sufficient to accommodate this. The Street Department Superintendent, who also serves as the Town’s MS-4 Operator will be responsible for implementing this program. The actual work of creating these surveys will be a cooperative effort among existing Town staff, specifically the Street Department Administrative Assistant.

2. Partnerships

The Town will continue to engage Boone County and City of Lebanon officials to cooperatively develop and disseminate public education and outreach materials. In addition, the town will seek other partners, such as the Boone County Soil and Water Conservation District and the Eagle Creek Watershed Task Force, and the Zionsville public school system to further enhance outreach capabilities. By November 1, 2005, the town will establish strong, cooperative relationships with those entities.

There is little estimated cost associated with the formation of said partnerships, and any incidental expenses can and will be absorbed by the normal operating funds of the Town of Zionsville. The MS-4 operator and support staff will ensure that these relationships are cultivated and maintained.

3. Hazardous Waste

By virtue of its membership on the Boone County Solid Waste Management Board, the Town will continue to pursue opportunities to conduct community-wide household hazardous waste collections. The Town has historically hosted a hazardous waste collection day through the Boone County Solid Waste Management Board, and commits to continued hosting of one or more household waste collection days within the permit period.

Again, the costs associated with this action are negligible, and can and will be covered by current budget line items within the Town's operating funds. The MS-4 operator, working cooperatively with Zionsville's Town Manager will ensure continued participation with the Boone County Solid Waste Management Board to coordinate the annual hosting of collection days.

4. Educational Materials

The Town will acquire and/or create educational materials, such as pamphlets, posters and brochures, for distribution to local schools and the Parks Department. Concise information pieces will be sent to residents and local business owners to provide information on storm water-related issues. This will allow for the distribution of pamphlets about issues of concern to be sent to every citizen who receives a wastewater utility bill. Informational brochures will be made available at local government buildings. Pamphlets could address topics such as NPDES Phase II requirements or general information on water quality. Brochures and fact sheets can be designed or obtained for a variety of issues confronting the community about water quality and storm water. These materials can be mailed directly to specific target audiences, placed in racks in public buildings such as the Town Hall or distributed by volunteers or at community events. Educational literature can correspond to the educational display, newsletter and/or website information for maximum impact. Target audiences should include: All residents, homeowners, businesses and commercial enterprises, and school children. Possible topics include: Storm sewers, watershed management, stream stewardship, proper disposal of wastes (including household hazardous wastes, motor oil and pet waste), lawn and garden care and ditch maintenance.

The MS-4 Operator and associated support staff will oversee the development or procurement of these educational materials. Currently, the MS-4 Operator estimates that this task can be accomplished for less than \$2500.00, and current Town funding is adequate to cover these expenses.

5. Signs

The Town will create and install educational signs at strategic locations on park properties along Eagle Creek, and/or neighborhood detention facilities that discharge directly to Eagle Creek. A simple way to remind people of the significance of a creek or of living in a watershed is to create signage to place at creekside sites. Signs could indicate the significance of caring for the watershed, or provide basic information about water pollution.

The MS-4 Operator will direct the development and procurement of these informational signs. It is estimated that, due to community and park property layout, less than 50 signs will be needed, at a cost of \$65.00 each. This sum total of approximately \$3250.00 will come from the Town's Motor Vehicle Highway fund, which includes an annual budget amount specific to sign costs.

6. Storm Water Video

One or more videotapes or DVDs addressing the problems associated with storm water runoff will be acquired and made available for meetings of local leaders, community groups, and for local school programs/curricula.

The MS-4 Operator will oversee the acquisition of this media item. It is not currently the intention of the Town to develop any video media, but through its partnerships with area agencies will coordinate the dissemination of the videos to local leaders, interest groups and libraries for viewing. Any video obtained will also become part of any presentation developed by the Town to present to local groups who request guest speakers at their regular meetings. Since any video presentations will be acquired and not generated by the Town, the costs associated with this action are deemed negligible, and covered by current operating budgets.

7. Web Site

The Town is in the early stages of establishing a web site. As it evolves, the web site will be used to provide information on storm water- and water quality-related issues.

Since the development of its web site is in its infancy, no budget has yet been established. However, it is the goal of the Town to have some form of general web presence yet this year, and the MS-4 Operator will be responsible to see that some form of narrative water quality and quantity information is included.

8. Contact Tracking

On an annual basis the Town will estimate the number of Zionsville residents that are reached through the programs described above.

This action is tied closely with action #1. Assessment. Through the direct mailing of surveys as previously outlined, the Town will attempt to monitor public awareness of water quality issues. However, this action more specifically addresses merely exposure rather than comprehension. It will be included as a part of the surveys distributed, and will be supplemented by additional statistical information pertaining to the number of surveys, pamphlets and educational materials sent to residents, businesses and interest groups, based on population and membership numbers.

The MS-4 Operator and Administrative Assistant will coordinate the compilation of these statistics. The estimated costs associated with this action are minor, as the majority of the expense will have already been incurred in the completion of the previously addressed actions.

9. News Media

The Town will provide written, publication-ready informational pieces to the local newspaper explaining the stormwater quality program components in easily understood terms.

Due to the nature of this action, the Town does not expect to incur any expense in the completion of this task. The MS-4 Operator will compose and distribute the informational pieces to the local newspapers in a format ready for publication.

PUBLIC PARTICIPATION AND INVOLVEMENT MCM

Section 327 IAC 15-13-13 states, in part, that:

“(a) The MS4 operator shall develop an SWQMP that includes provisions to allow opportunities for constituents within the MS4 area to participate in the storm water management program development and implementation. An MS4 operator shall ensure, via documented efforts, that sufficient opportunities were allotted to involve all constituents interested in participating in the program process to meet this measure.

“(c) An MS4 operator shall develop measurable goals for this MCM. An initial assessment of MS4 area constituents must be conducted to identify interested individuals for participation in the MS4 area storm water program. To comply with this measure, specific outreach and reduction goal percentages and timetables must be identified. As applicable or, if not applicable, then appropriately justified, goals must address relevant community participation in citizen panels, community clean-ups, citizen watch groups and drain marking projects, and public meeting notification.”

It is logical to believe the public can provide valuable input and assistance toward implementing a Phase II storm water management program. As a result, the NPDES Phase II program requires **public participation and involvement** in the development and implementation of a storm water quality management program. Providing the public with an opportunity to develop the program should help to broaden public support, increase the number of potential ideas presented to meet the permitting requirements, provide connections to other community and government programs and possibly shorten the implementation schedules.

At a minimum, to satisfy this MCM, the Town will need to assure that efforts are made to involve the public in various activities, to solicit public input, to provide ample public notice of relevant meetings, and to determine appropriate best management practices and measurable goals toward encouraging public participation and involvement.

The Town should include the public in developing, implementing, and reviewing its storm water quality management program. The public participation process will necessitate making efforts to engage everyone in the community. There are various

practices that could be incorporated into a public participation and involvement program, such as public meetings, citizen watch groups, community cleanups and storm drain stenciling.

Actions and Measurable Goals

1. Citizens Advisory Group

The Town will assemble a group of interested citizens to provide input on the implementation of a storm water quality management program. Even though this submittal will establish the framework for a program, there will still be a need for thoughtful consideration of the implementation process. Input from residents and other stakeholders should prove valuable as the Town contemplates the details of each program element. Meetings will be well publicized in advance in order to increase public attendance. By May 2005, the Town will organize a citizens' organization that will meet to begin discussion of stormwater quality management issues.

The MS-4 Operator and staff will coordinate the formation of this group. There should be no cost associated with this action, as staff will perform the tasks, and public notification shall be through direct contact or free notice by the local newspaper.

2. Adopt-A-River Program

The Town will investigate the requirements for participation in the Indiana Department of Natural Resources' Adopt-A-River program, evaluating the feasibility of the Town, one of its departments, or a citizens group adopting a segment of Eagle Creek or one of its tributaries within the MS4 area. If such participation is deemed feasible, the selected entity will then conduct the activities necessary for AAR program compliance. By November 2005, the Town will determine whether there is sufficient interest among various groups to commit to the requirements of the Adopt-A-River program within the MS4 area.

Since this action is initially merely an evaluation of public interest, there is no cost associated with its implementation. The MS-4 Operator and Administrative Assistant will investigate the Program, and coordinate participation if it is deemed productively feasible. Furthermore, since this action is developmental, it is unknown at this time if future costs will be incurred, and what entity shall bear these costs.

3. Storm Drain Stenciling

In other municipalities throughout the country, storm drain stenciling has seemingly become a popular volunteer activity for scout groups, schools, businesses or social organizations, and is aimed at educating the public not to allow wastes into stormwater drains. Participating groups stencil a message such as, "Dump No Waste, Drains to Stream" on the stormwater inlets in a designated area and place door hangers describing the project and its goals on doors of nearby homes or businesses. Small-scale efforts of this sort have been carried out in Zionsville in the past, primarily by local groups on a one-time basis specific to individual neighborhoods or areas. The Town will commit to encouraging initiation of larger-scale efforts. Such an effort can be facilitated by the

upcoming distribution of a storm drain stenciling videotape that is being produced under the auspices of the IDNR. Furthermore, as directed in the Town's newly adopted Stormwater Technical Standards Manual, all newly placed stormwater inlets are to be pre-stamped with an appropriate fresh-water message. This directive will address this action in all new developments, and by November 2005, the Town will seek to identify a local group willing to conduct a storm drain stenciling project in existing areas.

The MS-4 Operator and Administrative Assistant will be responsible contacting local groups and coordinating the stenciling efforts. If it is deemed appropriate, the Town may agree to provide the necessary stencil(s) and paint material(s). It is estimated that any costs incurred will be nominal, and will be covered by existing budget line items within the Street Department annual budget.

4. Partnerships

The Town will seek opportunities for the establishment and perpetuation of partnerships with groups such as the local development community, the local Eagle Creek watershed group, and local businesses. Creation and enhancement of such partnerships will facilitate the dissemination of pertinent stormwater quality management information, and assist with public participation in the overall effort. By November 2005, the Town will seek the partnership of at least two groups that can participate in stormwater quality management endeavors in the MS4 area.

The MS-4 Operator and Administrative Assistant will coordinate this effort, and the Town does not anticipate any associated costs.

5. Youth Involvement

Certain national youth organizations offer programs that place an emphasis on environmental issues, some specific to water quality. The Town will encourage local chapters of those organizations (and any others that may be discovered) to become active in these types of programs. Examples include:

- The Boy Scouts of America offers a soil and water conservation merit badge program that helps boys understand the importance of conservation practices. It also requires that the badge candidate become involved by conducting a project to help recover or preserve an area whose soil or water is deemed sensitive.
www.meritbadge.com/bsa/mb/106.htm
- USEPA and the Girl Scout Council of the Nation's Capital jointly developed the Water Drop patch program. It encourages girls to "make a difference in their communities by becoming watershed and wetlands stewards." The program allows girls to use their skills and their knowledge to educate others in their community about the need to protect the nation's water resources.
www.epa.gov/adopt/patch/

By November 2006, the Town will contact local representatives of the two identified organizations, as well as any others that may be potential candidates, to encourage their involvement in efforts that may lead to enhanced knowledge of stormwater quality issues.

The MS-4 Operator and Administrative Assistant will coordinate this effort, and the Town does not anticipate any associated costs.

6. Contact Tracking

On an annual basis the Town will estimate the number of citizens that are involved in the above described activities.

The MS-4 Operator and Administrative Assistant will track participation in the above described activities. Since the information necessary to compile these statistics is inherent in their activities, no additional costs are anticipated.

ILLICIT DISCHARGE DETECTION AND ELIMINATION MCM

327 IAC 15-13-14 states, in part, that:

“(a) An MS4 operator shall develop an SWQMP that includes a commitment to develop and implement a strategy to detect and eliminate illicit discharges to the MS4 conveyance.

“(b) An MS4 operator shall develop a storm sewer system map showing the location of all outfalls and MS4 conveyances in the particular MS4 area under the MS4 operator’s control and the names and locations of all waters that receive discharges from those outfalls.

“(c) Through an ordinance or other regulatory mechanism, a MS4 operator shall prohibit illicit discharges into MS4 conveyances and establish appropriate enforcement procedures and actions.

*“(d) An MS4 operator shall develop a plan to detect, address, and eliminate illicit discharges, including illegal dumping, into the MS4 conveyance. This plan need **not** address the following categories of non-stormwater discharges or flows, unless the MS4 operator identifies them as significant contributors of pollutants to its MS4 conveyance:*

- (1) Water line flushing.*
- (2) Landscape irrigation.*
- (3) Diverted stream flows.*
- (4) Rising ground waters.*
- (5) Uncontaminated ground water infiltration.*
- (6) Uncontaminated pumped ground water.*
- (7) Discharges from potable water sources.*
- (8) Foundation drains.*
- (9) Air conditioning condensation.*

- (10) Irrigation water.*
- (11) Springs.*
- (12) Water from crawl space pumps.*
- (13) Footing drains.*
- (14) Lawn watering.*
- (15) Individual residential car washing.*
- (16) Flows from riparian habitats and wetlands.*
- (17) Dechlorinated swimming pool discharges.*
- (18) Street wash water.*
- (19) Discharges from firefighting activities.*

“(e) The plan developed under subsection (d) must, at a minimum, locate problem areas via dry weather screening or other means, determine the source, remove or otherwise correct illicit connections, and document the actions taken.

“(f) The plan developed under subsection (d) must identify all active industrial facilities within the MS4 area that discharge into an MS4 conveyance.

“(h) An MS4 operator shall educate public employees, businesses, and the general public about the hazards associated with illicit discharges and improper disposal of waste.

“(i) An MS4 operator shall initiate, or coordinate existing, recycling programs in the regulated MS4 area for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

“(j) An MS4 operator shall develop measurable goals for this MCM. To comply with this measure, specific outreach and reduction percentages and timetables must be identified. At a minimum, goals must address relevant collection system mapping, regulatory mechanism implementation, employee training, household hazardous waste programs, illicit discharge detection, and illicit discharge elimination.”

The objective of the illicit discharge detection and elimination minimum control measure is for Zionsville and other MS4 operators to gain a thorough awareness of their stormwater systems. This awareness allows the MS4 entities to determine the types and sources of illicit discharges entering their systems, and establish the legal, technical, and educational means needed to eliminate these discharges.

IDEM’s guidance explains that the illicit discharge detection and elimination strategy must be enforceable through the development, or revision, of an ordinance or some other regulatory mechanism. The strategy should be written into the plan required under subsection (d), and should include detection procedures, illicit discharger notification procedures, enforcement procedures, implementation and procedural schedules, and identification of MS4 area personnel, and equipment resources that will be used in the illicit discharge control measure program.

Plan implementation will be dependent upon the development of an accurate map identifying all stormwater conveyances within the Town's MS4 area of jurisdiction. Creation of such a map is therefore integral to this MCM.

Actions and Measurable Goals

1. Stormwater System Map

The Town is required to develop a map(s) indicating the locations of all outfalls, stormwater conveyances, and receiving waters. All known "outfall conveyance systems" with a pipe diameter of twelve inches or larger and open ditches with a two foot or larger bottom width must be mapped within the first five year permit term (by November 2008). So, by November 2005, the Town commits to have created a map(s) depicting the location of "outfall conveyance systems" for at least twenty-five percent of the "MS4 conveyances" within the MS4 area. For each additional year of the initial permit term, the Town will identify at least twenty-five percent of the remaining MS4 conveyances on the map(s).

The Town has already begun this process, and incurred expenses as a result. It has contracted with WTH Engineering to develop and update its electronic-based mapping system in GIS form. The most recent update to this system includes an initial digitalization of all recent development for which as-builts or final plats are available in order to begin to track the linear footage and type of stormwater conveyance systems. Of the \$25,000.00 contract cost, approximately 40%, or \$10,000.00 of this work is dedicated to stormwater related items. It is anticipated that the Town will continue this map development annually. Additionally, the Town has budgeted \$15,000.00 in 2005 for the purchase of GPS equipment with suitable accuracy to begin locating and mapping the existing stormwater system in the old areas of town for which no map currently exists. It is recognized that much of the stormwater conveyance system in the older areas of town are largely unknown, and will be very cumbersome and labor-intensive to locate. The MS-4 Operator and staff will be responsible for the field work necessary to locate unmapped stormwater conveyance systems, and together with the Zionsville Town Manager, who coordinates the processing of information into map form will oversee the compiling of the field data and subsequent digitization necessary for graphic representation.

As a result of this initial round of digitization, it is estimated that the Town contains approximately 250,000 linear feet of stormwater piping. This effort has not yet addressed the open trench or swale component, but it is a reasonable assumption that a similar footage of open conveyance will be identified,

2. Prohibit Illicit Discharges

The Town recently adopted an ordinance to regulate stormwater quality and quantity, and a supplemental stormwater technical manual to address the issues of illicit discharges. These two documents, taken conjunctively, empower the Town to inspect stormwater conveyances for the express purpose of detecting illicit discharges. They also offer penal

recourse from the Town, although the Town is statutorily limited from imposing large fines or incarceration.

The Town will continue to evaluate its existing ordinances to determine what additional measures may be needed to assure the existence of sufficient regulatory authority and resources for prohibition of illicit discharges into MS4 conveyances and, if necessary, penalization of dischargers.

The MS-4 Operator, together with other town management staff will continue to evaluate and update ordinances, when deemed necessary, to provide an adequate level of local authority over stormwater system inspection and violation correction. Since this task involves the utilization of existing town staff, only minimal costs are expected. These minor expenses should be limited to ordinance review by the Town's contracted legal service provider. The Town includes in its annual budget a line item specific to legal expenses, and anticipates covering expenses within its current budget.

3. Detect, Address and Eliminate Illicit Discharges

The Town will develop policies, procedures, and documentation tools for detecting, addressing, and eliminating illicit discharges. It is envisioned that during surveys, and as part of routine work, staff will note whether unusual odors or non-stormwater substances are being discharged, or note unusual possible discharge pipes. If it is deemed feasible, indications of contaminants will trigger additional evaluations such as with smoke testing, dye tablets, or storm drain inspections by staff, to the extent that funds are available. The procedures will likely dictate that Town staff will also record, and where appropriate, investigate illicit connections reported by the public. The Town will have an initial version of those elements prepared no later than November 2006.

The MS-4 Operator and staff will be responsible to see that illicit discharges are investigated, documented and tracked, along with recording any actions required of the violator(s) and their subsequent corrections. The cost associated with this will be minimal initially, as Town staff will perform this function. The Town commits, if it is deemed necessary, to provide future funding should this action become too extensive for Town personnel and contract with outside service providers.

4. Dry Weather Screening

As part of the illicit discharge detection effort, the Town will devise and institute a dry weather screening initiative for all stormwater outfalls in the MS4 area, in accordance with the IDEM Rule 13 guidance document. This will include, at a minimum, field-level, Hach Kit-type testing to analyze for pollutants of concern and other parameters, such as pH, conductivity, or nitrogen-ammonia that would serve as meaningful pollution indicators. The screening initiative will be implemented over the course of the five-year permit term. At a minimum, all stormwater outfalls with a pipe diameter of twelve inches or larger and all open ditches with a two-foot or larger bottom width will be screened by November 2008.

The MS-4 Operator will, either through utilization of Town personnel or outside service providers, assume responsibility for conducting dry weather screening. The cost of this screening cannot be determined at this time, as it is a function of the number of outfall locations and linear feet of conveyance system that has not been determined. The MS-4 Operator will provide the necessary funding through the Street Department's annual operating budget.

5. Identification of Industrial Facilities

Another element of the Town's illicit discharge detection initiative will be the identification of all active industrial facilities within the MS4 area that discharge into an MS4 conveyance. Determinations will be made regarding any such facilities' conformance with 327 IAC 15-6.

The Town currently has no official Industrial Facilities within its jurisdiction. The MS-4 Operator, however, will include commercial facilities in the Town's illicit discharge detection efforts. Any new industrial facilities will be reviewed by the Town's contracted engineering firm to establish conformity with 327 IAC 15-6. Since it is Town policy to charge new developers for application and review, it is not anticipated that the Town will incur any additional costs associated with this action.

6. Education

The Town will assure that its employees, businesses, and the general public are educated about the hazards associated with illicit discharges and improper disposal of waste. In accordance with IDEM's guidance, illicit discharges and improper disposal will be incorporated into the public education and outreach MCM.

The MS-4 Operator will see that the aforementioned educational aspects are incorporated into the educational programs previously outlined. There is no anticipated additional cost to include this information above the cost of developing the Public Education and Outreach MCM previously discussed.

7. Recycling

The Town will evaluate its existing involvement with the Boone County Solid Waste Management District with respect to the recycling of commonly dumped wastes such as motor oil, antifreeze, and pesticides. A determination will be made regarding the suitability and adequacy of existing hazardous waste collection efforts, and whether additional measures are feasible within the context of the current five-year permit term. The evaluation will be conducted by November 2005.

The MS-4 Operator, working in conjunction with the Town Manager will work to continue the Town's participation in and possible expansion of its role with the BCSWD. This partnership and participation is offered at no cost to the Town, and the only expense associated with this action will be in the form of increased man-hours by existing Town staff.

CONSTRUCTION SITE STORMWATER RUN-OFF CONTROL MCM

327 IAC 15-13-15 states, in part, that:

“(a) An MS4 operator shall develop an SWQMP that includes a commitment to develop, implement, manage, and enforce an erosion and sediment control program for construction activities that disturb one (1) or more acres of land within the MS4 area.

“(b) Through an ordinance or other regulatory mechanism, the MS4 operator shall establish a construction program that controls polluted run-off from construction activities with a land disturbance greater than or equal to one (1) acre, or disturbances of less than one (1) acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land.

“(f) The MS4 operator, or a designated MS4 entity, shall meet the following:

- (1) Develop requirements for the implementation of appropriate BMPs on construction sites to control sediment, erosion and other waste.*
- (2) Review and approve the construction plans submitted by the construction site operator before construction activities commence.*
- (3) Develop procedures for site inspection and enforcement to ensure that BMPs are properly installed.*
- (4) Establish written procedures to identify priority sites for inspection and enforcement based on, at a minimum, the nature and extent of the construction activity, topography, and the characteristics of soils and receiving water quality.*
- (5) Develop procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities.*
- (6) Implement, at a minimum, a tracking process in which submitted public information, both written and verbal, is documented and then given to appropriate staff for followup.*

“(h) An MS4 operator shall develop measurable goals for this MCM. To comply with this measure, specific outreach, compliance, and implementation goal percentages and timetables must be identified. At a minimum, goals must address relevant regulatory mechanism implementation, public informational request procedure implementation, site inspection procedure implementation, and construction site operator compliance improvement.”

USEPA guidelines for construction site-related runoff address four requisite elements of this MCM:

- **Regulatory Mechanism** – Through the development of an ordinance or other regulatory mechanism, the MS4 operator must establish a construction program that

controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre.

- **Site Plan Review** – The MS4 operator must include in its construction program requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other wastes at the site.
- **Inspections and Penalties** – Once construction commences, BMPs should be in place and the MS4 operator’s enforcement activities should begin. To ensure that the BMPs are properly installed, the MS4 operator is required to develop procedures for site inspection and enforcement of control measures to deter infractions.
- **Information Submitted by the Public** – A final requirement of the MS4 program for construction activity is the development of procedures for the receipt and consideration of public inquiries, concerns and information submitted regarding local construction activities.

Recognizing that jurisdictional responsibility, formerly held by IDEM and SWCD for Rule 5 compliance has just recently been placed with the Town upon adoption of its stormwater ordinance, the Town has yet to issue an actual construction site permit as provided in the ordinance and technical manual. However, the Town regularly inspects three active construction sites for erosion and sediment control through its contract engineer inspector, as well as Boone County SWCD. Any formal actions other than routine repair of erosion control devices have been through the SWCD to IDEM.

Actions and Measurable Goals

1. Erosion and Sediment Control Ordinance

Development-related stormwater management is currently addressed by the Town through its design and construction standards. The Town’s legal jurisdiction over zoning and development provides authority to control activities associated with land development and construction. The Town contracts with an engineering firm to review and evaluate all construction-related project plans to assure conformance with Town standards. The standards require compliance with 327 IAC 15-5.

The Town has been cooperating with the Boone County Drainage Board, the Boone County Surveyor, the Boone County SWCD, the Boone County Highway Department, and the City of Lebanon in the joint development of a countywide stormwater ordinance that addresses both water quantity and water quality management, in conformance with both 327 IAC 15-5 and 327 IAC 15-13, with emphasis on subsection (f). (Boone County and the City of Lebanon are both MS4 entities.) The evolving stormwater ordinance includes requirements for development-related erosion and sediment control, as well as post-construction stormwater management. It is purposely being structured so that it can serve as a model to be utilized by municipalities within the county. It will supplant an existing similar, but much less comprehensive, ordinance that has been in effect for several years. When the ordinance was finalized and adopted by the County, the Town

utilized the ordinance as a model and adopted a Town ordinance mimicking the verbiage of the county ordinance.

This ordinance, developed primarily by Christopher Burke Engineering, as well as the associated Technical Standards Manual have been included as part of this submittal. Conjunctively, they should address every applicable component required under Rule 13.

2. Coordination with SWCD

MS4 entities are not required to utilize Soil and Water Conservation Districts to review and approve construction site plans. However, the appropriate SWCD must be provided the opportunity to comment on construction site plans once an MS4 entity has implemented its program. The comments and recommendations provided by the SWCD should be considered prior to granting final approval of the construction site plan. A predetermined time period must be established between an MS4 operator and the SWCD for obtaining comments and recommendations from the SWCD. The SWCD will be required to submit its comments within this predetermined time frame, or the plan approval process will go forward with the assumption that the SWCD has no additional comments or recommendations.

The Town currently has an excellent working relationship with the Boone County Soil and Water Conservation District, whose employee coordinates with the Town's engineering consultant and building inspector to assure compliance with Rule 5. However, with the additional workload developing as a result of the Rule 5 shift to a one-acre requirement, it is anticipated that the Town will itself need to assume primary responsibility for plan review and enforcement. This will involve a transition that has already begun.

3. Personnel Training

IDEM's Rule 13 guidance stipulates that MS4 area personnel involved in implementation of the construction site run-off control MCM must receive annual stormwater management training. This training could be conducted either by MS4 entity staff or some other trainer. Indiana Department of Natural Resources' Division of Soil Conservation personnel are available to assist MS4 entities with technical training for their staff. This training can be performed for individual MS4 entities or regional MS4 entity groups. The Division of Soil Conservation will also develop a comprehensive erosion and sediment control course that could be utilized for MS4 entity staff training. The Town will assure that relevant staff will receive meaningful training by November of each year, throughout the term of the permit.

4. BMP Implementation Requirements

The Town has adopted an ordinance that will satisfy Rule 13 requirements for the Zionsville MS4 area. As an accompaniment to the ordinance, a stormwater technical standards manual has been developed. That manual includes specific structural and non-

structural BMPs that are allowed and/or required, along with references to other acknowledged BMP guides such as those developed by the IDNR Division of Soil Conservation and its contractors.

5. Public Informational Requests

Subsection (h) of Rule 13 requires that the Town and other MS4 entities implement procedures for compliance with public information requests. While such requests are uncommon, and satisfying them is generally a simple matter of direct communication with the Town's staff, the Town will commit to have specific procedures in place no later than November 2006.

POST-CONSTRUCTION STORMWATER RUNOFF CONTROL MCM

327 IAC 15-13-16 states, in part, that:

“(a) An MS4 operator shall develop an SWQMP that includes a commitment to develop, implement, manage, and enforce a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas that disturb one (1), or more, acre of land, or disturbances of less than one (1) acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land, within the MS4 area.

“(b) Through the use of an ordinance or other regulatory means, an MS4 operator shall implement planning procedures to promote improved water quality. These planning procedures must include, at a minimum, the postconstruction requirements of 327 IAC 15-5-6.5(a)(8). Where appropriate, and to the extent of the MS4 operator's authority, the procedures may also include the following:

- (1) Buffer strip and riparian zone preservation.*
- (2) Filter strip creation.*
- (3) Minimization of land disturbance and surface imperviousness.*
- (4) Minimization of directly connected impervious areas.*
- (5) Maximization of open space.*
- (6) Directing the community's physical growth away from sensitive areas and toward areas that can support it without compromising water quality.*

A certification form that combines the completed requirements of this subsection and subsection (e) shall be completed and submitted to the department once the ordinance or other regulatory means has been developed and a program has been implemented, or seven hundred thirty (730) days from the date the initial NOI letter submittal was received by the department, whichever is earlier. In subsequent permit terms, the certification form does not need to be completed and

submitted. At a minimum, every five (5) years the regulatory means and program shall be reviewed for adequacy and accuracy, and updated, as necessary.”

“(c) Where appropriate, an MS4 operator shall use any combination of storage, infiltration, filtering, or vegetative practices to reduce the impact of pollutants in storm water run-off on receiving waters. In addition to the combination of practices, the following requirements shall be utilized:

(4) As site conditions allow, the rate at which water flows through the MS4 conveyances shall be regulated to reduce outfall scouring and stream bank erosion.

(5) As site conditions allow, a vegetated filter strip of appropriate width shall be maintained along unvegetated swales and ditches.

(6) New retail gasoline outlets, new municipal, state, federal, or institutional refueling areas, or outlets and refueling areas that replace their existing tank systems, shall be required by MS4 ordinance or other regulatory means to design and install appropriate practices to reduce lead, copper, zinc, and polyaromatic hydrocarbons in stormwater runoff.

“(d) MS4 area personnel responsible for plan review, inspection, and enforcement of post-construction BMPs shall receive, at a minimum, annual training, addressing such topics as appropriate control measures, inspection protocol, and enforcement procedures.

“(e) An MS4 operator shall develop and implement a written operational and maintenance plan for all stormwater structural BMPs.

“(f) An MS4 operator shall develop measurable goals for this measure. To comply with this measure, specific reduction percentages and timetables must be identified. At a minimum, goals must address relevant regulatory mechanism implementation, planning and structural BMP strategies, new impervious surface reduction, and discharge quality improvement.”

The federal expectation, reflected in Rule 13, is that owners or operators of regulated MS4 conveyances should develop, implement and enforce a program that includes a plan to address stormwater runoff from new development and redevelopment projects to their MS4 conveyances using site-appropriate and cost-effective structural and non-structural BMPs. USEPA’s guidance encourages local governments to identify specific problem areas within their jurisdictions and initiate innovative solutions and designs to focus attention on those areas through local planning. Municipalities are expected to establish requirements for the use of cost-effective BMPs that minimize water quality impacts and attempt to maintain pre-development run-off conditions. Therefore, post-development conditions should not differ from pre-development conditions in ways that adversely affect water quality.

The federal stormwater Phase II rule requires the following to comply with this MCM:

- Develop and implement strategies which include a combination of both structural and nonstructural BMPs
- Create an ordinance or other regulatory mechanism requiring the utilization of post construction controls
- Ensure adequate long-term operation and maintenance of the controls
- Determine the appropriate best management practices (BMPs) and measurable goals for this MCM

USEPA guidance suggests application of the following:

Non-Structural BMPs

- Planning and Procedures – Runoff problems can be addressed efficiently with sound land use planning procedures. Comprehensive plans and zoning ordinances can promote improved water quality by guiding growth of a community away from sensitive areas and by restricting certain types of growth (industrial, for example) to areas that can support it without compromising water quality.
- Site-Based Local Controls – These controls can include buffer strip and riparian zone preservation, minimization of disturbance and imperviousness and maximization of open space.

Structural BMPs

- Storage Practices – Storage or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices both control stormwater volume and settle out particulates for pollutant removal.
- Infiltration Practices – Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water and, thereby, result in reduced stormwater quantity and reduced mobilization of pollutants.
- Vegetative Practices - Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats and increase aesthetic appeal.

Actions and Measurable Goals

1. Erosion and Sediment Control Ordinance

Development-related stormwater management is currently addressed by the Town through its design and construction standards. The Town's legal jurisdiction over zoning and development provides authority to control activities associated with land development and construction. The Town contracts with an engineering firm to review and evaluate all construction-related project plans to assure conformance with Town standards. The standards require compliance with 327 IAC 15-5.

The Town has been cooperating with the Boone County Drainage Board, the Boone County Surveyor, the Boone County SWCD, the Boone County Highway Department, and the City of Lebanon in the joint development of a countywide stormwater ordinance that addresses both water quantity and water quality management, in conformance with both 327 IAC 15-5 and 327 IAC 15-13, with emphasis on subsection (f). (Boone County and the City of Lebanon are both MS4 entities.) The resulting stormwater ordinance includes requirements for development-related erosion and sediment control, as well as post-construction stormwater management. It is purposely structured so that it can serve as a model to be utilized by municipalities within the county. It will supplant an existing similar, but much less comprehensive, ordinance that has been in effect for several years. When the ordinance was finalized and adopted by the County, the Town utilized the ordinance as a model and adopted a Town ordinance mimicking the verbiage of the county ordinance.

2. Site Planning

327 IAC 15-5-6.5(a) requires site developers to prepare construction plans that include:

(8) The post-construction stormwater pollution prevention plan. The plan must include the following information:

(A) A description of potential pollutant sources from the proposed land use, that may reasonably be expected to add a significant amount of pollutants to storm water discharges.

(B) Location, dimensions, detailed specifications, and construction details of all post-construction storm water quality measures.

(C) A description of measures that will be installed to control pollutants in stormwater discharges that will occur after construction activities have been completed. Such practices include infiltration of runoff, flow reduction by use of open vegetated swales and natural depressions, buffer strip and riparian zone preservation, filter strip creation, minimization of land disturbance and surface imperviousness, maximization of open space, and storm water retention and detention ponds.

(D) A sequence describing when each post-construction storm water quality measure will be installed.

(E) Stormwater quality measures that will remove or minimize pollutants from stormwater runoff.

(F) Stormwater quality measures that will be implemented to prevent or minimize adverse impacts to stream and riparian habitat.

(G) A narrative description of the maintenance guidelines for all post-construction stormwater quality measures to facilitate their proper long term function. This narrative description shall be made available to future parties who will assume responsibility for the operation and maintenance of the post-construction storm water quality measures.

Rule 13 stipulates that the Town must assure that these elements are enforceable requirements of the Town's applicable ordinance(s). The Town's recently adopted ordinance satisfies the requirements for the Zionsville MS4 area.

3. BMP Implementation Requirements

As noted above, the Town has an ordinance in place that will satisfy Rule 13 requirements for the Zionsville MS4 area. As an accompaniment to the proposed ordinance, a stormwater technical standards manual was being developed. That manual includes specific structural and non-structural BMPs that will be allowed and/or required, along with references to other acknowledged BMP guides such as those developed by the IDNR Division of Soil Conservation and its contractors.

4. Personnel Training

IDEM's Rule 13 guidance stipulates that MS4 area personnel involved in implementation of the post-construction run-off control MCM must receive relevant stormwater management training, at least annually. This training could be conducted either by MS4 entity staff or some other trainer. This training can be performed for individual MS4 entities or regional MS4 entity groups. To comply with this requirement, the Town will assure that relevant staff will receive meaningful training by November of each year, throughout the term of the permit.

The MS-4 Operator has voluntarily attended workshops conducted by area SWCD's and IDEM.

5. Operational and Maintenance Plan

Rule 13 requires each MS4 entity to develop and implement a written operational and maintenance plan for all structural BMPs. The rule states that the plan should address inspection frequency, maintenance procedures, operational testing or observations to ensure proper function, preventative maintenance, and recordkeeping.

The Town of Zionsville does not presently own or operate any stormwater BMPs that would be considered structural, so there is no anticipated need for the development of an operational and maintenance plan.

IDEM's Rule 13 guidance does note that in situations where structural BMPs are privately owned, the maintenance of the BMP is the responsibility of that owner. The guidance suggests that the MS4 entity with responsibility for the stormwater quality within the private owner's geographical area should try to encourage the BMP owner to properly operate and maintain the BMP. The Town will strive to follow that guidance.

MUNICIPAL OPERATIONS POLLUTION PREVENTION AND GOOD HOUSEKEEPING MCM

327 IAC 15-13-17 states, in part, that:

“(a) An MS4 operator shall develop an SWQMP that includes a commitment to develop and implement a program to prevent or reduce pollutant runoff from municipal operations within the MS4 area.

(b) To the extent of its authority, an MS4 operator shall develop and implement a program to ensure that existing municipal, state or federal operations are performed in ways that will reduce contamination of stormwater discharge. This program must include the following:

(1) Written documentation of maintenance activities, maintenance schedules, and long term inspection procedures for BMPs to reduce floatables and other pollutants discharged from the separate storm sewers. Maintenance activities shall include, as appropriate, the following:

(A) Periodic litter pick up as defined in the MS4 area SWQMP.

(B) Periodic BMP structure cleaning as defined in the MS4 area SWQMP.

(C) Periodic pavement sweeping as defined in the MS4 area SWQMP.

(D) Roadside shoulder and ditch stabilization.

(E) Planting and proper care of roadside vegetation.

(F) Remediation of outfall scouring conditions.

(2) Controls for reducing or eliminating the discharge of pollutants from operational areas, including roads, parking lots, maintenance and storage yards, and waste transfer stations. Appropriate controls shall include the following:

(A) Covering, or otherwise reducing the potential for polluted stormwater runoff from, deicing salt or sand storage piles.

(B) Establishing designated snow disposal areas that have minimal potential for pollutant runoff impact on MS4 area receiving waters.

(C) Providing facilities for containment of any accidental losses of concentrated solutions, acids, alkalis, salts, oils, or other polluting materials.

(D) Standard operating procedures for spill prevention and clean up during fueling operations.

(E) BMPs for vehicular maintenance areas.

(F) Prohibition of equipment or vehicle wash waters and concrete or asphalt hydrodemolition wastewaters into stormwater runoff, except under the allowance of an appropriate NPDES wastewater permit.

(G) Minimization of pesticide and fertilizer use. Pesticides shall be used, applied, handled, stored, mixed, loaded, transported, and

disposed of via office of the Indiana state chemist's guidance requirements.

(H) Proper disposal of animal waste. If applicable, it is recommended that canine parks be sited at least one hundred fifty (150) feet away from a surface waterbody.

(3) Written procedures for the proper disposal of waste or materials removed from separate storm sewer systems and operational areas. All materials removed from separate storm sewer systems and operational areas, including dredge spoil, accumulated sediments, floatables, and debris, must be:

(A) Reused or recycled; or

(B) Disposed of in accordance with applicable solid waste disposal regulations.

(4) Written documentation that new flood management projects are assessed for their impacts on water quality and existing flood management projects are examined for incorporation of additional water quality protection devices or practices.

(5) Written documentation that appropriate MS4 entity employees have been properly trained, with periodic refresher sessions, on topics such as proper disposal of hazardous wastes, vegetative waste handling, fertilizer and pesticide application, and the function of implemented BMPs.

Actions and Measurable Goals

1. Personnel Training

IDEM's Rule 13 guidance stipulates that appropriate MS4 area personnel must receive periodic training to assure their knowledge of proper maintenance procedures, to include topics such as proper disposal of hazardous wastes, fertilizer and pesticide applications, and the functioning of implemented BMPs. To comply with this requirement, the Town will assure that relevant staff will receive meaningful training by November of each year, throughout the term of the permit.

2. Maintenance Activities

The Town has a longstanding, dynamic municipal operations-maintenance plan that addresses the majority of the issues identified in Section 17 of Rule 13. In the current plan, some issues are addressed more thoroughly than others with respect to their level of emphasis on water quality. This is to be expected since stormwater quality has not traditionally been a focal issue in Indiana. Due to the town's relatively small size, its general character, the overall condition of its buildings and infrastructure, and the nature of its residents, most of the subjects listed in subsection (b)(1) have never been maintenance issues of significant concern because they have not been problems. For that reason, it is generally not expected that it will be difficult for the Town to adapt to the Rule 13 perspective on municipal operations. It is anticipated that the maintenance plan will rather quickly evolve into one that is more focused on stormwater quality issues. It

is a matter of shifting the focus, rather than dramatically changing the manner in which municipal operations occur. The emphasis on subjects such as street sweeping, floatables reduction, and catch basin cleaning will, in the future, be directed as much toward water quality protection as it has historically been directed toward sustaining stormwater flow capabilities.

While the Town has performed routine street sweeping and catch basin clearing in the past, it has not tracked the amount of material removed during these processes. The Town will begin to track this information. Similarly, the Town has tracked an approximation of the amount of salt and sand it has placed during the winter for snow removal and de-icing, and commits to further refinement and tracking of material placement. It is estimated that the town placed 930 tons of de-icing sand and salt at a ratio of two-to-one salt-to-sand, and was able to recover, through sweeping and catch-basin cleaning to recapture 30%, or 93 tons of sand placed on public streets. It is estimated that 75% of the material recovered through street sweeping, with the balance being collected from storm drain inlets.

3. Flood Prevention Projects

As explained in the IDEM Rule 13 guidance document, flood prevention or stormwater management projects have typically been proposed to specifically address stormwater **quantity** problems. It should be a productive use of limited resources to develop a procedure to review such projects during the pre-construction phase, in order to determine if the projects can be modified to concurrently address the reduction of pollutants associated with runoff or if additional BMPs can be designed into the projects to improve water **quality**.

In addition to new projects of this sort, existing projects and structural BMPs must also be reviewed, according to the rule, to determine if it is feasible to retrofit them with stormwater **quality** control measures. Where retrofitting is not feasible, alternative approaches may include implementation of water quality improvement practices within the watershed. Each existing project and BMP may not support a retrofit, but the review, according to the rule, must be conducted.

4. Chemical Usage

The Town's different departments use pesticides, fertilizers, road de-icing substances, and other chemicals for a variety of purposes deemed necessary to the proper maintenance of parklands, streets, and buildings. In order to assure that none of the substances are being used in ways that may be unacceptably detrimental to the quality of public waters, efforts will be undertaken to appraise their use and institute any appropriate use reduction strategies. This will be an ongoing effort, but a report describing any changes that have been instituted will be generated each year.

5. Recycling Program

For several years the Town has contracted with a waste-hauling firm to provide weekly curbside recycling collection services for all Town residents. The contract requires the

collection of glass, newspaper, aluminum and steel containers, corrugated cardboard and selected plastics. The Town participates as a member of the Boone County Solid Waste Management District. Periodic countywide hazardous waste-collections are organized that allow the public to recycle otherwise commonly dumped wastes such as motor oil, antifreeze, and pesticides. The Town will evaluate its various departments' procedures for recycling and determine whether additional measures are appropriate and feasible within the context of the current five-year permit term. The evaluation will be conducted by November 2005.

VII. PROGRAMMATIC INDICATORS

327 IAC 15-13 requires, in part, that:

“a) An MS4 operator shall develop and implement an SWQMP-Part C: Program Implementation. The SWQMP-Part C: Program Implementation must contain the following:

(12) The identification of programmatic indicators. Programmatic indicators, grouped by corresponding MCM, must include those listed in subsection (b) that apply to the MS4 operator. Programmatic indicators do not need to be fully implemented at the time of the SWQMP-Part C: Program Implementation submittal.

“(b) The programmatic indicators must address the following:

(1) Number or percentage of citizens, segregated by type of constituent as referenced in section 12(a) of this rule, that have an awareness of stormwater quality issues.

(2) Number and description of meetings, training sessions, and events conducted to involve citizen constituents in the stormwater program.

(3) Number or percentage of citizen constituents that participate in stormwater quality improvement programs.

(4) Number and location of storm drains marked or cast, segregated by marking method.

(5) Estimated or actual linear feet or percentage of MS4 mapped and indicated on an MS4 area map.

(6) Number and location of MS4 area outfalls mapped.

(7) Number and location of MS4 area outfalls screened for illicit discharges.

(8) Number and location of illicit discharges detected.

(9) Number and location of illicit discharges eliminated.

(10) Number of, and estimated or actual amount of material, segregated by type, collected from, HHW [household hazardous waste] collections in the MS4 area.

(11) Number and location of constituent drop-off centers for automotive fluid recycling.

(12) Number or percentage of constituents that participate in the HHW collections.

- (13) Number of construction sites obtaining an MS4 entity-issued stormwater runoff permit in the MS4 area.*
- (14) Number of construction sites inspected.*
- (15) Number and type of enforcement actions taken against construction site operators.*
- (16) Number of, and associated construction site name and location for, public informational requests received.*
- (17) Number, type, and location of structural BMPs installed.*
- (18) Number, type, and location of structural BMPs inspected.*
- (19) Number, type, and location of structural BMPs maintained or improved to function properly.*
- (20) Type and location of nonstructural BMPs utilized.*
- (21) Estimated or actual acreage or square footage of open space preserved and mapped in the MS4 area, if applicable.*
- (22) Estimated or actual acreage or square footage of pervious and impervious surfaces mapped in the MS4 area, if applicable.*
- (23) Number and location of new retail gasoline outlets or municipal, state, federal, or institutional refueling areas, or outlets or refueling areas that replaced existing tank systems that have installed stormwater BMPs.*
- (24) Number and location of MS4 entity facilities that have containment for accidental releases of stored polluting materials.*
- (25) Estimated or actual acreage or square footage, amount, and location where pesticides and fertilizers are applied by a regulated MS4 entity to places where stormwater can be exposed within the MS4 area.*
- (26) Estimated or actual linear feet or percentage and location of unvegetated swales and ditches that have an appropriately-sized vegetated filter strip.*
- (27) Estimated or actual linear feet or percentage and location of MS4 conveyances cleaned or repaired.*
- (28) Estimated or actual linear feet or percentage and location of roadside shoulders and ditches stabilized, if applicable.*
- (29) Number and location of stormwater outfall areas remediated from scouring conditions, if applicable.*
- (30) Number and location of de-icing salt and sand storage areas covered or otherwise improved to minimize stormwater exposure.*
- (31) Estimated or actual amount, in tons, of salt and sand used for snow and ice control.*
- (32) Estimated or actual amount of material by weight collected from catch basin, trash rack, or other structural BMP cleaning.*
- (33) Estimated or actual amount of material by weight collected from street sweeping, if utilized.*
- (34) If applicable, number or percentage and location of canine parks sited at least one hundred fifty (150) feet away from a surface waterbody.”*

Actions

At the present time, it would seem that nearly all of the programmatic indicators listed in the rule will be appropriate for the Town's activities. It is the intention of the Town to apply all of the programmatic indicators, with the exception of number 34, since there are no canine parks in the Town's MS4 jurisdictional area. The Town will re-evaluate the listed indicators each year to determine whether adjustments to the list would be appropriate, particularly if a more suitable indicator could be utilized that is not on the list.

VIII. STORMWATER BUDGET

1. Current Budget

There is currently no specific stormwater program funding designated for calendar year 2005. However, many of the required actions will be funded through separate existing budget line items. A budget line item of \$7,500.00 has been approved by the Town Council for storm drain repair, as well as the previously described budget allocations for mapping needs. It is not anticipated that modifications to Municipal Operations will require additional funding to accommodate modified procedures, and the Street Department is adequately funded to provide street sweeping, catch basin cleaning and repair and statistical tracking.

2. Funding Source(s)

The funding necessary to comply with this submittal is generally contained within the Street Department budget. Those funds come from predominantly the Town's Motor Vehicle Highway fund, which is a gasoline tax based fund. Additionally, funds used to develop mapping and utilize outside contract service providers may come from the Town's General Fund, a property tax based fund.

3. Projected Annual Budgets

During the 2005 calendar year, the Town will evaluate necessary funding for compliance with Rule 13, and the appropriate amounts will be requested for approval by the Town Council. Since the complete evaluation is an on-going process, exact funding cannot be specified at this time. However, the MS-4 Operator will have the responsibility of seeing that enough funding is requested to allow reasonable progress each calendar year, and will track money spent on Rule-13 specific actions.

IX. MS4 AREA BOUNDARIES

There are three designated MS4 entities in Boone County. The first is the County, itself, because of two designated developing areas within its jurisdiction, the second is the City of Lebanon, and the third is the Town of Zionsville. The corporate boundaries of the latter two entities are separated by a distance of approximately fifteen miles, so have no shared jurisdiction.

Zionsville's corporate boundary differs somewhat from the boundary line established by the United States Census Bureau urbanized area (UA) map. Zionsville has legal jurisdiction only over the area within the corporate boundary, so there are small portions of the UA-mapped area over which the Town has no legal authority. The Town cannot presume to exert any authority over any area outside its corporate boundary. However, as a practical matter, much of what the Town will do in the future with respect to Rule 13 will no doubt affect and/or influence some citizens of the county who reside near the town, even if they may not be Zionsville residents. This will be particularly true of public education and outreach endeavors, as well as those related to public involvement and participation, simply because of those citizens' proximity to the town.

Officially, therefore, the Town will not attempt to wield any authority related to the Rule 13 MCMs in any area beyond the Zionsville corporate boundary.

The Town has been cooperating with the Boone County Drainage Board, the Boone County Surveyor, the Boone County SWCD, the Boone County Highway Department, and the City of Lebanon in the joint development of a countywide stormwater ordinance that addresses both water quantity and water quality management, in conformance with both 327 IAC 15-5 and 327 IAC 15-13, with emphasis on subsection (f). The evolving stormwater ordinance includes requirements for development-related erosion and sediment control, as well as post-construction stormwater management. It is purposely being structured so that it can serve as a model to be utilized by municipalities within the county. When the ordinance is finalized and adopted by the County, it is the Town's intention to utilize the ordinance as a model and to then adopt a Town ordinance mimicking the verbiage of the county ordinance. By doing so, the Town and the County will have essentially identical ordinances for stormwater management and erosion and sediment control. This will simplify implementation and enforcement of the measures and allow for increased cooperation between the two jurisdictional entities.

Attached to this submittal is a map depicting the current corporate boundary for the Town of Zionsville, which also identifies boundary features such as roads and creeks, when applicable. It is assumed that any annexations of land currently under the jurisdiction of Boone County will become part of Zionsville's MS-4 boundary upon finalization of annexation. Corporate boundary maps are continuously updated annually, and will be provided with each subsequent submittal when changes occur.

The map does not reflect dedicated open/greenspace. However, according to the Town's Parks and Recreation Department, the Town currently controls 339 acres of public land

dedicated to both passive and active public use, which is by nature open space. It is recognized that due to the nature of land use, over 100 acres of open space is identified within the Town's Master Plan along waterways and creeks, whose floodplain designation precludes development or any use other than casual recreational use.