



Storm Water Management Plan December 2019

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For

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Patrick C. Monahan, Mayor

TABLE OF CONTENTS

Executive Summary	4
Introduction and Background	5
1 Requirements	5
2 Development of the SWMP	5
3 Community Description	6
4 Table of Organization	7
5 Definitions	8
The Plan	10
1 Public Education and Outreach	10
A Introduction	10
B Decision Process	10
C Best Management Practices	11
D Themes	11
E Responsible Party and Legal Authority	13
F Goals and Activities	13
2 Public Participation/ Involvement	14
A Introduction	14
B Decision Process	14
C Best Management Practices	15
D Themes	15
E Responsible Party and Legal Authority	15
F Goals and Activities	15
3 Illicit Discharge Detection and Elimination	16
A Introduction	16
B MS4 System and HSTS Maps	17
C Authorizing Legislation	17
D Household Sewage Systems (HSTS) and Board of Health	18
E Dry Weather Screening	18
4 Construction Site Stormwater Runoff Control	19
A Introduction	19
B Decision Process	19
C Best Management Practices	20
D Responsible Party and Legal Authority	21
E Goals and Activities	21
5 Post-Construction Stormwater Management in New Development and Redevelopment	21
A Introduction	21
B Decision Process	22
C Best Management Practices	23
D Responsible Party and Legal Authority	23
E Goals and Activities	23
6 Pollution Prevention and Good Housekeeping	24
A Introduction	24
B Decision Process	25
C Best Management Practices	25
D Facilities List	25

E	Responsible Party and Legal Authority	26
F	Goals and Activities	26

Appendices

Appendix A ~ Chapter 929 Ordinance

Appendix B ~ Land Development General Plan Review Checklist

Appendix C ~ 2012 to 2018 Small MS4 Annual Reporting Forms

Appendix D ~ Soils Report

Appendix E ~ Shawnee Hills Tributary Map

Executive Summary

The following document is a plan describing the Village of Shawnee Hills Stormwater Management Program (SWMP). The purpose of this program and plan is to comply with the Ohio Environmental Protection Agency's (Ohio EPA) Municipal Stormwater Program administered through a National Pollution Discharge and Elimination System (NPDES) general permit.

This plan provides communications and guidance to Village staff and elected officials, community partners, businesses and residents involved in implementing the stormwater program. The plan also provides information to Ohio EPA on how Shawnee Hills intends to comply with the Municipal Separate Storm Sewer System (MS4) NPDES Stormwater General Permit.

Implementation is the responsibility of the Village of Shawnee Hills. Delaware County Soil & Water Conservation District (DCSWCD) and local consulting firm are aiding as outlined through contracts and an intergovernmental working agreement. This document will be updated periodically to reflect new opportunities, challenges, and comments and as part of completing the annual report due to the Ohio EPA on April 1st of each year. Public input, comment and support are welcome and necessary. Awareness, protection and improvement of our water and related natural resources are not only about complying with state regulations, but it is also about community pride and sustainability.

As directed by Ohio EPA, the Stormwater Management Program (SWMP) is to be tailored to individual community needs as an understanding of the community's resources, character, and natural resources is the starting point for activities listed in this plan.

This plan is organized by the six minimum control measures (MCMs) that are set forth in the NPDES Phase II permit language. These MCMs are Public Education and Outreach, Public Participation/ Involvement, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post Construction Stormwater Management in New Development and Redevelopment, and Pollution Prevention/Good Housekeeping for Municipal Operations. The MCMs provide a comprehensive stormwater management approach from educating and involving the users of the storm sewer system; mapping the stormwater system including outfalls into the system; identifying and resolving pollution discharges into the system; managing and improving stormwater quantity and quality entering into the system on new and redeveloping construction sites; ensuring ongoing maintenance of all stormwater management systems after construction and implementation; and setting the community example with good stormwater management at municipal facilities and with municipal operations.

While implementing this plan the Village of Shawnee Hills plans to communicate with businesses and households and reach out to special populations that include; students, commercial sites, stream-side landowners and watershed groups. To comply with the minimum requirements of the permit, the Village of Shawnee Hills will continue to review and update zoning and development regulations as needed. The Village will also continue to

develop programs to address concerns noted in the 2010 Study Plan for the Middle Scioto River Watershed, and to identify potential pollution sources and eliminate those sources.

There will be opportunities to address erosion concerns along roadways, implement demonstration of rain barrels and rain gardens, provide informational workshops to businesses and residents interested in green practices, improve appearance and functionality of detention basins, and increase tree canopy cover in the Village. Every effort will be made to use existing resources and identify grant opportunities to meet multiple community needs.

Introduction and Background

1 *Requirements*

The Village of Shawnee Hills is required to develop, implement and support a Stormwater Management Program (SWMP) to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of Ohio Revised Code (ORC) 6111 and the Clean Water Act. The SWMP should include management practices, control techniques, and system, design, and engineering methods. The plan should be reviewed, modified and updated to include provisions as Ohio EPA and/or Village of Shawnee Hills staff determines appropriate after program reviews for effective stormwater quality management.

Requirements for the SWMP are regulated by the Ohio EPA through the National Pollutant Discharge Elimination System (NPDES) general permit for Small Municipal Separate Storm Sewer Systems (MS4). The permit requirements addressing six minimum measures:

- 1) Public Education and Outreach
- 2) Public Participation/ Involvement
- 3) Illicit Discharge Detection and Elimination
- 4) Construction Site Stormwater Runoff Control
- 5) Post Construction Stormwater Management in New Development and Redevelopment
- 6) Pollution Prevention/Good Housekeeping for Municipal Operations.

The SWMP shall include best management practices (BMPs) for each minimum measure. BMP is a broad term that refers to practices ranging from educational brochures to actual implementation practices. Identified BMPs shall include statements as to legal authority and rationale as to how and why selected. A table of organization identifies the primary point of contact and responsible parties for each BMP.

The full text of the permit and other guidance documents can be viewed over the Internet at https://epa.ohio.gov/dsw/permits/GP_MS4StormWater or by calling Anthony Robinson at (614) 728-3392.

2 *Development of the SWMP*

The Village of Shawnee Hills has been complying with the MS4 NPDES Stormwater Permit during the first generation of this new permit program. However, a formal SWMP has not been prepared prior to the preparation of this document. Even so, the Village has been submitting

annual reports to the OEPA reflecting attention to the MCMs and BMPs required by the NPDES permit.

In order to gain a better understanding of stormwater program management under the MS4 permit requirements and to put a Storm Water Management Program into writing, a meeting was held with the program stakeholders in 2019: Representatives from the Village of Shawnee Hills, Delaware County Soil & Water Conservation District and Tebbe Civil Engineering. This meeting provided direction to the overall process of developing the SWMP.

The Village of Shawnee Hills and Delaware County Soil & Water Conservation District staff partnered to research community needs, permit requirements, and effective options for a stormwater management plan outside of formal meetings. The results of staff research and meetings provided the substance for this SWMP.

3 Community Description

The Village of Shawnee Hills is comprised of an estimated 830 residents. The Village of Shawnee Hills encompasses approximately 300 acres of land. There are no discharging Household Sewage Treatment Systems in Shawnee Hills since the entire Village had sanitary sewer mains and services installed in 2000.

Natural Features

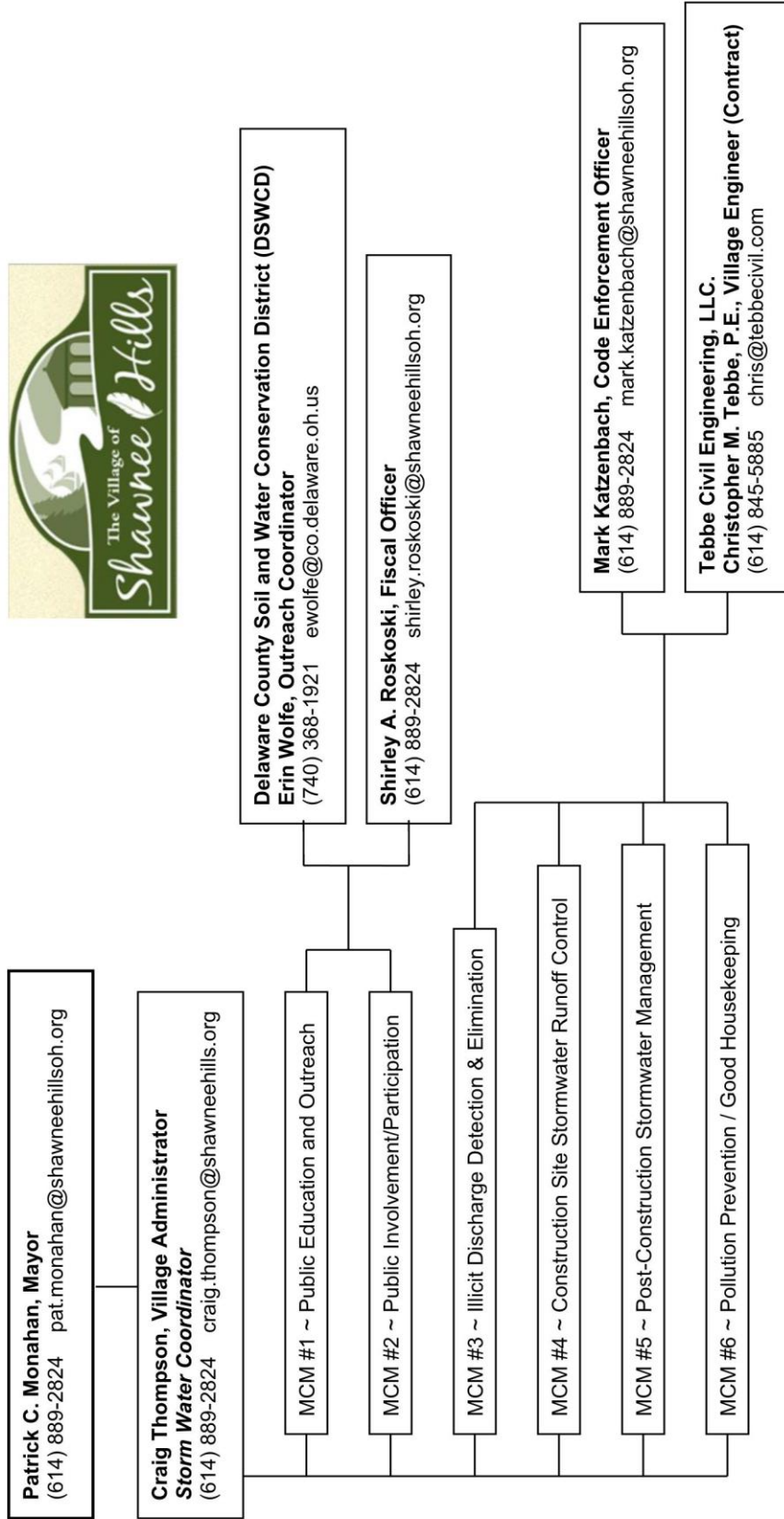
Shawnee Hills is adjacent to 1 mile of the Scioto River (O'Shaughnessy Reservoir) [based on Delaware County GIS data] primarily within the O'Shaughnessy Dam – Scioto River watershed. There is surface drainage via roadside ditches throughout the Village with limited storm sewer piping. The City of Columbus Department of Public Utilities owns O'Shaughnessy Reservoir and maintains a riparian buffer along the entire eastern boundary of Shawnee Hills. In addition, the City of Columbus monitors the use of lawn fertilizers and similar items within the Village of Shawnee Hills to protect water quality.

Based on the SSURGO Soils GIS layer, 83% of the soils in Shawnee Hills are Glynwood, 11% are Blount, and 6% are Udorthents. According to the OEPA's National Wetland Inventory Wetlands with OEPA attributes GIS layer, there are approximately 0.6 acres of wetlands in the Village.

Watersheds

The Village of Shawnee Hills is in the "Scioto River" watershed (HUC: 050600011202). Most of the Village (~90%) is in the "O'Shaughnessy Dam – Scioto River" watershed (HUC: 050600011202). The remainder (~4%) is in the "Hayden Run-Scioto River" sub watershed (050600011204) and (~6%) is in the "Eversole Run" sub watershed (HUC 050600011201).

4 Table of Organization



5 Definitions

Best Management Practice (BMP) ~ The most effective, practical methods for the prevention or reduction of pollution from non-point sources (e.g. urban pollutant runoff). Stormwater best management practices include structural (or non-structural) methods designed to temporarily treat or store stormwater runoff to reduce pollution and mitigate flooding.

Home Sewage Treatment System (HSTS) ~ As defined in the Ohio Administrative Code, Chapter 3701-29, a HSTS is any onsite sewage disposal or treatment system for a single-family, two-family, or three-family dwelling that serves as a collection point for sewage.

Hydrologic Unit Code (HUC) ~ A two to twelve-digit code in the hydrologic unit system that is used to identify all the drainage basins within the United States. The HUC is based on the four levels of classification in the hydrologic unit system: regions (largest), sub-regions, accounting units, and cataloging units (smallest).

Illicit Discharge Detection and Elimination (IDDE) ~ One of the six minimum control measures that is required to be included in the stormwater management program of an operator of a Phase II regulated small municipal separate storm sewer system in order to obtain its National Pollutant Discharge Elimination System permit.

Maximum Extent Practicable (MEP) ~ Although not directly defined by US EPA, this term refers requiring compliance with regulation requirements to the maximum ability of the permittee.

Minimum Control Measure (MCM) ~ One of six technical areas in a stormwater management program (SWMP) of the NPDES Phase II regulations. These six technical areas are:

- (1) Public Education and Outreach
- (2) Public Participation/Involvement
- (3) Illicit Discharge Detection and Elimination
- (4) Construction Site Runoff Control
- (5) Post-Construction Runoff Control
- (6) Pollution Prevention/Good Housekeeping.

National Pollutant Discharge Elimination System (NPDES) ~ Federally mandated permit system established by Section 402 of the Clean Water Act, used in the regulation of point sources (e.g. discharges from industrial and municipal facilities, stormwater discharges from discrete conveyances such as pipes or channels).

Ohio Revised Code (ORC) ~ Legal document containing all acts that have been passed by the Ohio General Assembly and that have been signed by the Ohio governor.

Qualitative Habitat Evaluation Index (QHEI) ~ Index designed by the Ohio EPA to establish a measurement of habitat quality that is generally interrelated to physical factors that affect fish communities and other aquatic life, such as macroinvertebrates.

Stormwater Management Program (SWMP) ~ The SWMP is organized by MCMs and includes BMPs, measurable goals, rationale, decision process, responsible parties, time schedules and other appropriate information.

Stormwater Pollution Prevention Plan (SWPPP) ~ A SWPPP identifies all potential pollution sources from a construction site or regulated facility; addresses measures to prevent potential pollutant discharges into water bodies and wetlands; and assists in the compliance with the conditions and terms of the permit.

Total Maximum Daily Loads (TMDL) ~ The Ohio EPA TMDL program, established under Section 303(d) of the Clean Water Act (33 U.S.C. 1313), focuses on identifying and restoring polluted rivers, streams, lakes and other surface water bodies. A TMDL is a written, quantitative assessment of water quality problems in a water body and contributing sources of pollution. It specifies the amount a pollutant needs to be reduced to meet water quality standards (WQS), allocates pollutant load reductions, and provides the basis for taking actions needed to restore a water body.

The Plan

This Stormwater Management Program is organized by Minimum Control Measures (MCMs). The SWMP includes best management practices, measurable goals, rationale, decision process, responsible parties, time schedules and other appropriate information. This section is designed to correspond with Ohio EPA annual reporting requirements. This plan can be updated annually and used as a tool to complete required annual reporting.

1 *Public Education and Outreach*

A Introduction

The first minimum control measures require the Village to distribute educational materials or conduct equivalent outreach activities to the community about the impacts of stormwater discharges and steps the public can take to reduce pollutants to water bodies. An informed and knowledgeable community is important to a successful stormwater program. This lays the foundation for community participation in responsible land management, compliance with local and state regulations, and support for community projects and programs needed for a successful stormwater program.

Benefits to the Village include a successful stormwater program, pride in the community, and support of the Village of Shawnee Hills's self-description as a community whose mission is "to provide effective public services to enhance the quality of life of our residents and businesses."

Summarized Requirements:

- Develop a plan to inform and involve individuals and households about steps they can take to reduce stormwater pollution including measurable goals, target audiences, target pollutants, outreach strategy, and input to the development of the SWMP.
- Develop five different stormwater themes or messages to be conveyed to target audiences during the permit term. **The Village does not have large tracts of land available for development therefore we won't be targeting the Development community as part of our program.**
- Develop rationale for target audiences and pollutants that will make the greatest difference for improving stormwater quality.
- Identify approaches and mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) to reach target audiences, and how many people will be reached over the permit term. At least 50 percent of the population needs to be reached over the permit term.
- Evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

B Decision Process

To address this minimum control measure, the Village has implemented a public education and outreach program that utilizes a comprehensive approach to maximize the effectiveness of

education and outreach to inform the public and encourage changes in attitude and behavior. The program targets the individuals, households, businesses, and students (K-12). Existing educational programs provide a foundation for this community-wide plan. Any interest groups in the community that can play a role in the stormwater management planning and implementation process are identified during planning meetings. These groups are engaged in the outreach, education and involvement processes.

When selecting BMPs and themes for this minimum measure community, demographics, land use, potential pollution sources, existing water quality and stormwater system information, and community resources were considered.

C Best Management Practices

The following BMPs are used for public education and outreach to inform individuals and groups about the steps they can take to reduce stormwater pollution:

- Communicate through print media.
 - Include relevant articles and announcements in local newsletters.
 - Provide fact sheets on such things as ditch maintenance to all residents.
 - Encourage businesses and residents to access website resources.
- Publicize and communicate using Internet-based resources to Continue and update the stormwater page on Village of Shawnee Hills’s website, to Include relevant articles and announcements in Village’s e-newsletter and DCSWCD newsletters.
 - Communicate information as appropriate in Village newsletter and on Facebook.
 - Provide links to stormwater-related websites, including the DCSWCD website
- Provide stormwater education.
- Provide stormwater information at Shawnee Hills-sponsored events.
- Communicate stormwater information and announcements to Village Council and elected officials.
- Publicize annual Central Ohio Stormwater and Erosion Control Expo.
- Provide all permit applicants with information on sediment and stormwater control BMPs and Shawnee Hills’s expectations.
- Hold pre-construction meetings with all developers.

D Themes

The Village of Shawnee Hills has identified at least **five** different education themes to use during the duration of this permit. The themes target the primary existing causes of water quality impairment in Shawnee Hills. Target audiences are chosen based on the probable sources in Shawnee Hills of the pollutants causing this impairment.

- 1) Restaurants and businesses with parking lots will receive information relevant to parking lot runoff and the impact of activities undertaken on parking lots on runoff (e.g. car washing, power washing of restaurant equipment, automobile fluid leaks etc.).
- 2) The development community will receive information on sediment controls, stormwater BMPs, and OEPA expectations.

- 3) Homeowners will be provided information on the ways that they can reduce their impacts on stormwater quality and volume.
- 4) The stormwater conveyance system in the Village of Shawnee Hills is primarily composed of roadside and private ditches. As such, the maintenance and proper function of these ditches are crucial to proper pollution control.
- 5) All residential and commercial property owners will receive information about how storm runoff from their property affects everyone else.

These educational themes can be summarized as follows:

“When it Rains, Shawnee Hills Drains”

Rationale – This helps educate the public that water runoff is a concern for everyone in the Village since it can carry waste, yard debris and pollutions downstream. Keeping yard waste out of stormwater is an important dimension of keeping nutrients out of our streams.

“Storm Drain Stewardship”

Rationale – This helps educate the public and gives recommendations on how to prevent pollutants from entering the storm sewer system and the effects of pollution on the environment. This also helps to show the individual homeowners that the storm systems that are on their properties are part of an overall pollution prevention process.

“Keep pet and animal waste from polluting the Village”

Rationale – Studies have determined that dog waste contributes nearly 20% of the bacteria load in stormwater samples. This was a program to educate property owners that animal waste ends up in the streams and in the rivers and ultimately affects overall health.

“Improving stormwater runoff through lawn care practices”

Rationale – Keeping yard waste out of stormwater is an important dimension of keeping nutrients out of our streams. The village of Shawnee Hills is uniquely situated adjacent to O’Shaughnessy Reservoir, which is a water supply facility for the City of Columbus. As such; the use of fertilizers and similar lawn products is strictly regulated within the village and enforced by the city of Columbus

Lawn maintenance is a component of public and private life in the Village, an element that often involves fertilizer. Reducing nutrient runoff due to fertilizer will improve the overall water quality. This involves applying the proper fertilizer at the appropriate rate and the right time, using methods intended to prevent fertilizer from entering stormwater runoff.

“Clear Ditches for a Healthy Shawnee Hills”

Rationale – The Village of Shawnee Hills has primarily ditches to handle storm runoff. the proper maintenance of these ditches is crucial to keeping run off from the village clear of pollutants. If runoff can flow through well-maintained, grass-lined ditches it allows pollutants

settlement and allows trash and debris to collect in locations where it can be removed. It also allows for runoff to soak into the ground providing groundwater recharge

This theme also allows us to use the following catchy phrases to further emphasize the point in press releases and graphics:

It's a cinch to clean your ditch.
It "leaves" a lot to be desired.
Turn over a new "leaf".
"Leaf" an impression.

We are working with Delaware County Soil & Water Conservation District on ways to incorporate these themes into future workshops, pamphlets, newsletters and other media releases.

E Responsible Party and Legal Authority

The Village Administrator is responsible for the overall management and implementation of the stormwater public education and outreach program. Delaware County Soil and Water Conservation District aids with educational materials and presentations. Planned activities are well within the authority and ability of the Village of Shawnee Hills in partnership with Delaware County Soil and Water Conservation District. Village Staff will incorporate stormwater into existing programs and practices. The Village Engineer assists by providing technical assistance and education.

F Goals and Activities

BMP #1 – Rain Barrel/Rain Garden/Backyard Conservation Workshops

DCSWCD holds rain barrel/rain garden/backyard conservation workshops in Shawnee Hills during the permit term. The workshops will focus on runoff reduction and cleaning stormwater using rain barrels and rain gardens.

Rationale – Shawnee Hills has a tradition of hosting these workshops with good response from residents. Workshops provide a more intensive educational opportunity than to other modes of message delivery and have had a good message/action connection in the past.

Parties Responsible to Implement – Shawnee Hills will do scheduling and marketing. Delaware County Soil and Water Conservation District will assist with marketing and lead the workshop.

BMP #2 – Improve Village Website to consolidate all Storm Water Pollution Items

The Village of Shawnee Hills maintains a website that will have digital copies of the various pamphlets in handouts available.

Rationale – Shawnee Hills is working to create a single-location for people to obtain stormwater and pollution prevention information.

Parties Responsible to Implement – Shawnee Hills will revise the website as new informational items are created.

BMP #3 – Educational Material Distributed to Residents and Commercial Properties

The Village includes newsletter articles in their newsletter that they send out with the quarterly utility bills. This information provides various ways that residents can prevent water from getting polluted

Rationale – This is an established means for reaching all Shawnee Hills residents.

Parties Responsible to Implement – Shawnee Hills will prepare and mail out the newsletters. Delaware County Soil and Water Conservation District will assist with information for the newsletter articles.

We have included copies of the Small MS 4 Annual Reporting Forms they have been submitted by the Village from 2012 to 2018. We will add copies for future years as they as submitted to the Ohio EPA for review.

2 Public Participation/ Involvement

A Introduction

This minimum measure requires the Village of Shawnee Hills to engage the public for input and involvement in the Village SWMP. Public participation provides valuable input and assistance for the SWMP with opportunities to engage in the development and implementation of the program. Public involvement results in broader public support, improvements to the program plan and implementation, shorter implementation schedules, additional resources and greater benefits to water quality in the Village and wider watershed.

Benefits to the Village include identification of resources and opportunities outside of existing Village operations. Participation also enhances community engagement and pride.

Please Note: The current permit expired September 10, 2019. The next permit has not been approved as of January 1, 2020 when the next permit is approved, we will update this SWMP to reflect any changes to the permit

Program Requirements:

- Describe public involvement opportunities in developing and implementing the stormwater management plan.
- Describe target audiences for public involvement including residential and commercial stakeholder groups.
- Describe public involvement activities with a minimum of five public involvement activities over the permit term.
- Evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

B Decision Process

To address this MCM the Village has proposed a SWMP planning process that allows for community participation. Stakeholders include residents, businesses, and community groups. Input received will assist in further developing activities and targets. Providing this opportunity for public input complies with Ohio public notice and open records law. This is also an

opportunity to educate the public about existing stormwater management opportunities and the SWMP.

C Best Management Practices

The following BMPs are used for public involvement/ participation.

- Provide opportunity for and consideration of public input into stormwater management plan.
- Make the plan available for public comment on the Village website [<http://www.shawneehillsoh.org/>].
- Involve the public in implementing the stormwater program and improving the stormwater system.
- Maintain a partnership with the Delaware County Soil and Water Conservation District for stormwater program management support.
- Provide guidance and education to property owners with significant natural resource, soil erosion, or drainage concerns.
- Develop a Backyard Conservation program including several workshops per year, brochures, and educational materials for interested residents focusing on NPDES Phase II requirements.
- Publicize Village-initiated stormwater projects, as well as opportunities for resident-based stormwater projects.
- Publicize existing system for public complaints, developing a special category for stormwater issues.
- Support existing watershed protection efforts that complement and support the Village SWMP.

D Themes

The Village of Shawnee Hills will address all different education themes identified in MCM 1 during the duration of this permit. The themes target existing and potential community pollution sources.

E Responsible Party and Legal Authority

The Village Administrator is responsible for the overall management and implementation of the stormwater public education and outreach program. Delaware County Soil and Water Conservation District aids with educational materials and presentations. Planned activities are well within the authority and ability of the Village of Shawnee Hills in partnership with Delaware County Soil and Water Conservation District. Village Staff will incorporate stormwater into existing programs and practices. The Village Engineer assists by providing technical assistance and education.

F Goals and Activities

The following goals and activities are intended to increase public involvement/ participation in the SWMP and pollution prevention activities.

- Encourage the proper disposal of hazardous waste by continuing to work with the Delaware County general health district and provide locations where residents can dispose of hazardous household waste.

- Use volunteer groups to clean up trash and debris throughout the village and continue the program of having a clean-up day every year.
- Allow people to make comments related to the stormwater management plan via website and e-mail.
- Provide a system to track the number of comments, suggestions and follow-up discussions and the number of activities conducted. Along with the number of participants per activity.
- Have Delaware County Soil and Water Conservation District hold multiple public meetings per year.
- Use the annual village picnic as an opportunity to discuss stormwater management with the residents.

3 *Illicit Discharge Detection and Elimination*

A Introduction

This minimum measure requires the Village of Shawnee Hills (the Village) to implement and enforce a program to detect and eliminate illicit discharges and includes comprehensive mapping of the Municipal Separate Storm Sewer System (MS4) as well as the establishment of codes to prohibit discharges to their MS4.

The regulatory definition of an MS4 (40 CFR 122.26(b)(8)) is:

"a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- i *Owned or operated by a state, Village, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States.*
- ii *Designed or used for collecting or conveying stormwater;*
- iii *Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."*

As defined by EPA, an illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from firefighting activities.

Please reference the IDDE Plan for additional information on Illicit Discharges.

This MCM is supported by the IDDE Plan for the Village of Shawnee Hills. Please reference this plan for additional details on how Minimum Control Measure 3 is addressed.

Program Requirements

- Develop, implement, and enforce a program to detect and eliminate illicit discharges into your small MS4.

- Complete a comprehensive storm sewer system map showing the location of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls. The comprehensive storm sewer system map shall also include your MS4 system, including catch basins, pipes, ditches, flood control facilities (retention/detention ponds), post-construction water quality Best Management Practices (BMPs) and private post construction water quality BMPs. The map must be updated annually and as needed.
- Mapping must contain a list of all Household Sewage Treatment Systems (HSTSs) connected to discharge to your MS4. **(There are no HSTS within the limits of the Village of Shawnee Hills.)**
- Prohibit, through ordinance, or other regulatory mechanism, illicit discharges into the storm sewer system and implement appropriate enforcement procedures and actions.
- Develop and implement a plan to detect and eliminate non-stormwater discharges, including illegal dumping, to your MS4.
- Identify residences with existing individual discharging HSTSs that can be legally, feasibly, and economically connected to sanitary sewers. **(Not Applicable)**
- Develop or enhance an operation and maintenance program which determines if existing HSTSs are operating as designed and intended and if not, then a program that requires elimination, upgrade or replacement of the systems. **(Not Applicable)**
- Investigate the source of contamination in outfalls identified during the dry weather screening process.
- Work with local wastewater authorities to evaluate the planned or possible future installation of sewers for areas, which contain high densities of discharging HSTSs. **(Not Applicable)**
- Inform public employees, businesses and the public of hazards associated with illegal discharges and improper disposal of waste.

B MS4 System and HSTS Maps

The Village maintains a set of data layers that comprise their MS4. This data is updated as development occurs and/or field investigations reveal needed additions or corrections. The mapping layers include; storm sewer lines, open drainage, stormwater basins, inlet structures, outlet structures, waters of the state and post-construction BMPs. This mapping was developed from a combination of engineering plans and in-field verification and mapping of components

C Authorizing Legislation

The Village of Shawnee Hills maintains regulations defining and prohibiting pollution of stormwater in accordance with the spirit of the NPDES program. Refer to Shawnee Hills Ordinance No. 01-2012 https://www.amlegal.com/codes/client/shawnee-hills_oh/ [Section 929]

Refer to Shawnee Hills's IDDE Plan for additional legislation and legal authorities related to pollution of stormwater.

Please reference Shawnee Hills's IDDE Plan for contacts associated with the various types of pollution observed. The Village records and routes all complaints as appropriate. They can be reached at: (614)889-2824. Additional information can be found at: <http://www.shawneehillsoh.org/>.

For additional information on how illicit discharges are tracked to their source and the processes for addressing these discharges, please reference the Village's IDDE Plan.

D Household Sewage Systems (HSTS) and Board of Health

(Not Applicable - since there are no HSTS within the limits of Shawnee Hills.)

E Dry Weather Screening

Dry Weather Screening (DWS) of the MS4 outfalls and system outlets has been completed yearly. Mapping includes the location of systems, outlet locations (when able to confirm) and the routing of the discharge piping from the system. The Village will implement a DWS tracking process.

DWS will continue on an annual basis to monitor all areas. In addition to these locations, all complaints regarding potential illicit discharges will be investigated. All results of DWS will be summarized and reviewed by the Village on an annual basis.

BMP #1 – Authorizing Legislation

Shawnee Hills's Codified Ordinances are viewed as living documents which are constantly evolving based on the most current and scientifically sound BMP's. In turn, this chapter will be reviewed on an annual basis to ensure that these standards meet or exceeded requirements of the Village's current NPDES Phase II Permit.

Chapter 929 "Stormwater Management"

BMP #2 – MS4 System Map

Shawnee Hills's storm sewer dataset will be updated as new projects (Residential, commercial, civic, etc.) are approved and when existing storm sewer infrastructure is repaired/replaced. Existing data is also reviewed on a regular basis by Shawnee Hills. Additional in-field verification of systems will be completed if inconsistencies are discovered in the existing data set.

BMP #3 – IDDE Surveillance Plan

As outlined in the IDDE Plan, the Village will continue to work to identify and eliminate illicit discharges to the Village's MS4. The Village will continue dry weather screening in areas identified as likely producing illicit discharges and at strategic locations throughout the Village. Shawnee Hills's Code Enforcement assist in investigating and eliminating any complaints received from residents or Village personnel. Annual review of dry weather screening results will be conducted by the Village and adjustments for dry weather screening the following year will be made if necessary.

BMP #4 – IDDE Elimination Plan

Shawnee Hills Code Enforcement Officer and Village Engineer are responsible for investigating and eliminating any identified illegal discharges. As noted above, dry weather screening results will be used to plan future dry weather screening plans.

4 *Construction Site Stormwater Runoff Control*

A Introduction

This minimum control measure addresses management of stormwater runoff from construction activity disturbing one acre or greater. Stormwater runoff management addresses both how water is retained and released during and after stormwater events and how erosion is minimized through design, management of construction activity, and use of erosion control practices until the site is stabilized with permanent vegetation.

The primary development of sites within the Village of Shawnee Hills consists of small (less than 1/3 acre) individual home sites. As part of our program for reviewing construction on these home sites the Village Engineer and Code Enforcement Officer conduct multiple reviews of construction site sediment control. Any areas found to be unacceptable, are corrected by the homeowner or developer as quickly as practical.

Sediment is the number one pollution of concern in Ohio with construction and urban runoff being the primary contributor in the Village of Shawnee Hills and Delaware County. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. Unmanaged stormwater runoff from developed land results in stream bank erosion. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to local streams. Stormwater retention and detention on construction sites reduces the volume and velocity of stormwater entering ditches and streams.

Benefits to the Village include reduced erosion and sedimentation along waterways and ditches, and improved quality of streams for recreation and fishing. Another benefit of stormwater detention is increased infiltration of water into the soil. This replenishes the availability of ground water as a supply for drinking water and maintains base flow in local streams.

Summarized Requirements:

- An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance. The regulation will be equivalent to the technical requirements set forth in the Ohio EPA General Permit for Construction Site Stormwater.
- Require construction site operators to implement appropriate erosion and sediment control BMPs.
- Require construction site operators to control waste such as, but not limited to, discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.
- Procedures for stormwater pollution prevention plan review which incorporate consideration of potential water quality impacts.
- Procedures for receipt and consideration of information submitted by the public.
- Procedures for site inspection and enforcement of control measures with a frequency of no less than monthly.

B Decision Process

The Village of Shawnee Hills continues to develop, implement and enforce a program to reduce pollutants to control construction site runoff on construction sites that result in a land disturbance of greater than or equal to one acre.

In order to control polluted runoff from construction sites, the Village uses existing ordinances to require and enforce erosion and sediment controls at construction sites, including sanctions and enforcement mechanisms.

As a requirement of the NPDES general stormwater permit, all on-site operators are to maintain records and reports that keep track of the inspections completed by the Village Code Enforcement Officer. The Village of Shawnee Hills has procedures for site inspection and enforcement of control measures to deter infractions. Regular inspections by Tebbe Civil Engineering, LLC staff give the Village an opportunity to provide additional guidance and education, issue warnings, or assess penalties.

The Village tracks the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities, both written and verbal. This action recognizes the important role that the public can play in identifying cases of noncompliance. To ensure sites are inspected for erosion and sediment control as well as for stormwater pollution prevention and are following all current regulations, the Code Enforcement Officer will inspect all active, permitted construction sites on a regular basis. If any of the sites are found to be out of compliance, the Village Engineer will enforce the regulations and implement penalties as necessary.

C Best Management Practices

To address this Minimum Control Measure the Village is using the following best management practices as a part of its construction site stormwater runoff control program:

- Ensure that Shawnee Hills has adequate ordinances and other regulatory mechanisms in place.
- Continue the complaint process already established which follows-up on 100% of received complaints. Create a specific category for stormwater related reports from the public. The village has created a *Wet Basement & Stormwater Questionnaire* along with a *Drainage Assistance Request Form* specifically for public complaint related to storm water
- Review all construction site plans when construction disturbs more than 1 acre. (The village reviews all sites regardless of size.)
 - Review site's erosion and sediment control plan in accordance with Planning and Zoning Code Chapter 929 and 1121.
 - Highlight unique features and review notes describing items
 - Locate and highlight or take note of additional typical ESC items such as silt fencing, straw filter socks, straw bales, ditch checks, concrete washout areas, stabilized construction entrances, sediment basin structural controls, etc.
- Recommend necessary plan changes to appropriate developer representative.
- Conduct inspections on a monthly basis and within 24 hours of a 0.5" or greater rainfall.
- Perform additional site inspections as necessary to ensure compliance.
- Maintain communication and follow guidelines to ensure enforcement at noncompliant sites.

D Responsible Party and Legal Authority

The Village Engineer is responsible for the overall management and implementation of the construction site stormwater runoff control program. Tebbe Civil Engineering, LLC acts on behalf of the Village of Shawnee Hills for plan review and construction site erosion and sediment control inspections. The Village Engineer reviews the effectiveness and documents achievement of the measurable goals of the construction site stormwater runoff control program and BMPs.

E Goals and Activities

BMP #1 – Authorizing Legislation

The authorizing legislation can be found in Chapter 929 and 1129 of the Codified Ordinances of Shawnee Hills, Ohio.

BMP #2 – Plan Review Process

All sites within the Village of Shawnee Hills must submit a plot plan that includes all grading and erosion control items. When applicable, an NOI and SWP3 must also be submitted to the Village Engineer prior to “any earth disturbing activity....” The Village Engineer must indicate approval or disapproval of the SWP3 to the person filing the plan within 14 working days of submittal. Indication of disapproval must be accompanied by a description of “plan deficiencies and the procedures for filing a revised plan. Pending preparation and approval (determination of compliance) of a revised plan, earth- disturbing activities shall proceed only in accordance with conditions outlined by the Village Engineer.

BMP #3 – Site Inspection Process

Tebbe Civil Engineering, LLC staff shall inspect the site on a monthly basis and within 24 hours of a 0.5” or greater rainfall, in order to determine compliance with regulations laid out in Chapter 929 and 1129 of the Village’s Code.

5 Post-Construction Stormwater Management in New Development and Redevelopment

[Note: The Village has not had any facilities constructed within the permit period that has required Post-Construction Stormwater Management. However, there are sites under review which will require an NOI and Post-Construction Stormwater Management. For those facilities the Village will apply the following standards.]

A Introduction

These measures start at development plan review and continue through ongoing management of stormwater management practices that remain on site after construction is completed. Good construction site management and use of nonstructural BMPs, including placement of green space and stream buffers, can reduce costs of ongoing maintenance.

As post-construction runoff flows over developed land it carries pollutants such as sediment, oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus) to nearby ditches and streams. Once deposited, these pollutants impact water quality and viability of aquatic organisms. Post-construction runoff also increases the quantity of water delivered to ditches and streams during storm events. Stormwater 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 water. The effects of this process include stream bank erosion and downstream flooding. As stormwater is directed into streams and ditches, infiltration of water to replenish the water table is decreased.

Benefits to the Village from controlling post-construction runoff include reduced erosion and sedimentation along waterways and ditches, improved quality of streams for recreation and fishing, reduced property damage from flooding, and continued availability of a quality drinking water supply

Summarized Requirements:

- Develop, implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb one-acre of land or greater to help minimize water quality impacts.
- Consideration of non-structural BMPs for stormwater management program, including, as appropriate: policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space, provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation.
- Consideration of structural BMPs in the program, including, as appropriate: storage practices such as wet ponds and extended-detention outlet structures; filtration practices such as grassed swales, bioretention cells, sand filters and filter strips; and infiltration practices such as infiltration basins and infiltration trenches.
- Identify the mechanisms (ordinance or other regulatory mechanisms) to address post construction runoff from development and redevelopment and include reasons for selection of the mechanism(s) within the first two years of the permit.
- The plan should ensure that long-term operation and maintenance (O&M) plans are developed and agreements in place for all applicable sites within the first two years of the permit.

B Decision Process

While most development within the Village of Shawnee Hills is less than one acre. The Village of Shawnee Hills is addressing stormwater runoff from new development and redevelopment projects that disturb greater than (or equal to) one acre with controls that prevent or minimize water quality impacts. This may include retrofits to existing basins to improve the water quality of the runoff and decrease the amount of water quantity going into the receiving stream. This may also include an educational component on the specifics of what best management practices will best accomplish these retrofits and what best management practices will accomplish post construction stormwater management on new development sites.

As development moves forward in the Village, operation and maintenance plans are required for all post-construction BMPs with agreement that clearly identifies who is the responsible party for maintaining the BMP. When selecting BMPs for this minimum control measure community demographics, land use, potential pollution sources, existing water quality and stormwater system information are considered.

C Best Management Practices

To address this minimum control, measure the Village will address the following best management practices as a part of its post construction management program. (Please note that while most development within the Village does not reach the Ohio EPA NPDES General Construction Permit acreage threshold, the Village is committed to creating the highest water quality.):

- Ensure that Shawnee Hills has adequate ordinances and other regulatory mechanisms in place, including procedures to review site plans for post-construction requirements as listed in Ohio EPA’s general construction permit and Shawnee Hills chapter 929.
- Consider adopting ordinances regarding riparian setbacks, wetland setbacks, open space requirements and green infrastructure. [The Village currently has a riparian setback from O’Shaughnessy Reservoir and City of Columbus drainage facilities.
- Provide information to permit applicants regarding post-construction requirements and non-structural and structural BMPs at the time of permitting.
- During post construction meeting ensure O&M agreements are in place and responsibilities are understood.
- Perform two site inspections per site once the Village has accepted the site and the developer is no longer responsible to ensure the BMPs are still functioning as intended and the natural resources continue to be protected.
- Conduct annual follow-up site visits at previous construction sites.
- Put in place procedures for enforcing compliance of post-construction operations and maintenance agreements.
- Follow enforcement procedures.
- Procedures in place to review site plans for post-construction requirements as listed in Ohio EPA’s general construction permit and Shawnee Hills chapter 929.
- The Village of Shawnee Hills follows all drainage requirements of The Delaware County Engineering Office including all erosion control practices.

D Responsible Party and Legal Authority

The Village Engineer is responsible for the overall management and implementation of the post construction stormwater management program (Village of Shawnee Hills Codified Ordinances—Chapter 929 and 1129). Delaware County Soil and Water provides technical guidance, educational opportunities to assist the Village in training and meeting this minimum control measure.

E Goals and Activities

BMP #1 – Authorizing Legislation

The authorizing legislation can be found in Chapter 929 and 1129 of the Codified Ordinances of Shawnee Hills, Ohio.

Shawnee Hills’s Codified Ordinances are viewed as living documents which are constantly evolving based on the most current and scientifically sound BMP’s. In turn, these chapters will be reviewed on an annual basis to ensure that these standards meet or exceeded requirements of the Village’s current NPDES Phase II Permit. In addition, Chapter 1151 adopts the Delaware County Engineering and Surveying Standards for Subdivision Development to be used for all construction. [<https://engineer.co.delaware.oh.us/development/standards/>]

BMP #2 – Plan Review

[For all projects requiring post-construction stormwater management per the current Ohio EPA General Permit.]

At the time of SWP3 submittal, the permittee will submit a Post Construction Operations and Maintenance (O&M) Plan for review by the Village Engineer. The O&M plan will be reviewed to ensure facilities meet the stormwater quantity and quality requirements of the General Permit and are designed using principles from the latest edition of the Ohio Department of Natural Resources *Rainwater and Land Development Manual*. Plan review will place an emphasis on meeting TMDL concerns for post-construction facilities.

BMP #3 – Program to Ensure Installation

Prior to the Occupancy Permit being issued for the facility, as-built drawings of post-construction water quality facilities will be submitted for review to the Village Engineer. Once approved, the facility is subject to the requirements of the O&M Plan developed for the facility.

BMP #4 – Long-term Maintenance Program

The post-construction facilities are to be inspected according to the previously approved O&M Plan for the facility. The Village will send an annual reminder to facilities under the post-construction program reminding them to submit a copy of their annual inspection report to the Village for review. The Village will randomly inspect 20% of facilities on an annual rotating basis to review records and conduct an inspection of the post-construction facilities. New facilities will be added to the MS4 map on an annual basis.

BMP #5 – Enforcement Program

Once the as-built certification is approved and Occupancy permit is issued for the facility, it is the facility owner's responsibility to conduct inspections and schedule maintenance activities for the facility. If facilities are not being maintained per the approved O&M Plan, the Village will first send a letter outlining the deficiencies with a corrective timeframe. If the deficiencies are not remedied in the specified timeframe, the Village will issue a Notice of Violation.

6 *Pollution Prevention and Good Housekeeping*

A Introduction

This measure requires the MS4 to examine and alter their own actions to help ensure a reduction of pollution that collects on streets, parking lots, open spaces, storage and vehicle maintenance areas that can be discharged to local waterways.

Benefits to the Village include being the example to improve water quality in the Village, possible cost savings through timely maintenance of storm sewer systems, reduction in fertilizer and pesticide usage, etc...

Summarized Requirements:

- Must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances and stormwater system maintenance.

- Must include a list of facilities that MS4 owns and operates. Stormwater Pollution Prevention Plans (SWPPP) need to be developed and implemented for listed facilities within the first two years of the permit.
- Must address maintenance activities, schedules, inspection procedures, and proper waste disposal for controls to reduce pollutants to your MS4s.
- Must ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices and practices.

B Decision Process

The Village of Shawnee Hills maintains and updates as necessary good housekeeping/ pollution prevention plans for its Service Department facility. The Village Service Department only has one facility which is located at the Shawnee Hills Police Department at:

40 W Reindeer Drive
Powell Ohio, 43065

As part of its operations; the Village does not store road salt within the Village Limits (At Dublin or Concord Township), does not use fertilizer, conduct street sweeping duties due to the ditched roads. In addition, pesticide and herbicide usage is limited to less than 10 gallons per year.

A good housekeeping workshop is held yearly for appropriate departmental staff. The Village maintains appropriate records regarding these sites and appropriately handles the disposal of waste, application of fertilizer and salt, and management of pesticide use.

C Best Management Practices

To address this Minimum Control Measure the Village is using the following best management practices as a part of its Pollution Prevention & Good Housekeeping program:

- Hold one good housekeeping workshop for each Village department involved with park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance, reviewing the SWPPPs with staff.
- Continue to update list of subject facilities
- Base catch basin repair and stormwater line improvement on resident complaints and on yearly maintenance plan.
- Maintain regular schedule for cleaning catch basins and structures.
- Properly manage and dispose of wastes.
- Properly apply salt in a way that minimizes usage.
- Properly manage use of pesticides and herbicides
- Decrease use of fertilizer – especially fertilizer with phosphorus **[Not used in Village]**
- Minimize trash, grits, and other pollutants in the street which may be transferred to the stormwater system.
- Ensure stormwater management is considered for all flood management projects.

D Facilities List

Shawnee Hills Police Department
40 W Reindeer Drive
Powell Ohio, 43065

E Responsible Party and Legal Authority

The Code Enforcement Officer is responsible for the overall management and implementation of the pollution prevention and good housekeeping program for Shawnee Hills. The Village Engineer is responsible for implementing the SWMP generally and ensuring the implementation of the SWPP for the facility above specifically.

F Goals and Activities

BMP #1 – Employee Training

Shawnee Hills's will continue hosting an annual workshop to address pollution prevention/good housekeeping with help from the Village Engineer.

BMP #2 – Stabilization of Disturbed Soils and Soil Stockpiles

Disturbed soils and soil stockpiles related to Village construction activity will be stabilized on a timely schedule.

BMP #3 – Vegetative Buffers

Permanent natural vegetative buffers will be maintained, protected and/or restored between developed areas and water resources. The City of Columbus Department of Public Utilities maintains a significant riparian corridor along the eastern side of the Village along O'Shaughnessy Reservoir

BMP #4 – Green Infrastructure

Locations where green infrastructure such as bioretention, permeable pavement, cisterns, and infiltration trenches or basins can be installed at Village facilities will be identified.

BMP #5 – MS4 System Maintenance and Pollution Prevention Programs

The Department of Public Service will continue to develop and implement a maintenance plan for Shawnee Hills's MS4. Periodic open channel trash cleanup throughout the year (as needed). The Village has an active, year-round road-kill program and proper disposal that will be continued.

BMP #6 – Proper Stormwater Practices for Village Maintenance Activities

Stormwater pollution prevention policies and procedures related to Village maintenance activities will be reviewed annually and updated as needed based on the most current and scientifically sound BMP's per the Village's current NPDES permit. These activities include:

- Deicer application and storage
- Leaf and yard debris collection
- Street repairs and maintenance
- Pesticide, herbicide and fertilizer application and storage
- Park grounds management
- Police activities as addressed under the permit.

Appendix A

CHAPTER 929 ORDINANCE

Appendix B

PLAN REVIEW CHECKLIST

Appendix C

2012 – 2018 SMALL MS4 ANNUAL REPORTING FORMs

Appendix D

VILLAGE SOILS REPORT

Appendix E

VILLAGE TRIBUTARY MAP