Municipal Separate Storm Sewer System (MS4)

ANNUAL STATUS REPORT

June 30, 2022 to June 30, 2023

City of Monessen

575 Donner Avenue
Monessen, PA 15062
(724) 684-9000

Prepared for:

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Southwest Regional Office
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December 11, 2023

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City of Monessen
Annual Municipal Separate Storm Sewer System (MS4)
2023 Status Report

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ANNUAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
2023 STATUS REPORT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

ANNUAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) STATUS REPORT

FOR THE PERIOD June 30, 2022 TO JUNE 30, 2023

GENERAL INFORMATION			
Permittee Name:	City of Monessen	NPDES Permit No.:	PAG136283
Mailing Address:	575 Donner Avenue	Effective Date:	March 16, 2018
City, State, Zip:	Monessen, PA 15062	Expiration Date:	March 15, 2025
MS4 Contact Person:	Ron Mozer	Renewal Due Date:	September 30, 2023
Title:	Mayor	Municipality:	City of Monessen
Phone:	724-684-9000 x 6	County:	Westmoreland
Email:	rmozer@cityofmonessen.com		
Co-Permittees (if applicable): N/A			
Appendix(ces) that permittee is subject to (select all that apply): ☒ Appendix A ☐ Appendix B ☒ Appendix C ☐ Appendix D ☒ Appendix E ☐ Appendix F			

WATER QUALITY INFORMATION

Are there any discharges to waters within the Chesapeake Bay Watershed? ☐ Yes ☒ No

Identify all surface waters that receive stormwater discharges from the permittee's MS4 and provide the requested information (see instructions).

Receiving Water Name	Ch. 93 Class.	Impaired?	Cause(s)	TMDL?	WLA?
Monongahela River	WWF	Yes	Appendix C PCB (4)	No	No
UNT to Speers Run		Yes	Appendix A Metals, pH(5) and Appendix E Siltation	No	No
UNT's to Monongahela River (2)		Yes	Appendix B PCB (4)	No	No

GENERAL MINIMUM CONTROL MEASURE (MCM) INFORMATION

Have you completed all MCM activities required by the permit for this reporting period? ☐ Yes ☒ No

List the current entity responsible for implementing each MCM of your SWMP, along with contact name and phone number.

MCM	Entity Responsible	Contact Name	Phone
#1 Public Education and Outreach on Storm Water Impacts	City of Monessen	Ron Mozer	724-684-9000 x 6
#2 Public Involvement/Participation	City of Monessen	Ron Mozer	724-684-9000 x 6
#3 Illicit Discharge Detection and Elimination (IDD&E)	City of Monessen	Ron Mozer	724-684-9000 x 6
#4 Construction Site Storm Water Runoff Control	City of Monessen	Ron Mozer	724-684-9000 x 6
#5 Post-Construction Storm Water Management in New Development and Redevelopment	City of Monessen	Ron Mozer	724-684-9000 x 6
#6 Pollution Prevention / Good Housekeeping	City of Monessen	Rod Freeman	724-684-7810

MCM #1 – PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

BMP #1: Develop, implement and maintain a written Public Education and Outreach Program.

1. For new permittees only, has the written PEOP been developed and implemented within the first year of permit coverage?

   ☐ Yes ☐ No

2. Date of latest annual review of PEOP: March 31, 2023 Were updates made? ☐ Yes ☒ No

3. What were the plans and goals for public education and outreach for the reporting period?

It was the City's intent to upload pamphlets with stormwater management information from SPC's website to the City's website. All phamphlets were added to the updated City website as intended and are available for public review and utilization.

The City added links to the City's website for residents to access SPC, WDC, PaDEP and US EPA sites for additional stormwater management information.

The City planned to continue review and update as necessary the written PEOP in the coming year and place copies within the City building, City garage for the public works employees, the Monessen High School, as well as the local public library.

The City has established an Environmental Advisory Board. The Board has conducted two meetings and have begun work on organizing the City's distribution of recycling bins to residents

4. Did the MS4 achieve its goal(s) for the PEOP during the reporting period? ☒ Yes ☐ No

5. Identify specific plans and goals for public education and outreach for the upcoming year:

   Continue to upgrade to their website and upload the stormwater management pamphlets and links to SPC, WDC, PaDEP.and US EPA as new information becomes available.

Continue to increase target audience knowledge about the steps that can be taken to reduce stormwater pollution.

Increase target audience knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.

Implement a diverse program with strategies that are targeted toward audiences most likely to have significant stormwater impacts.

Review the PEOP and update with current information as necessary.

Review the SPC Stormwater Management website for new pamphlets with stormwater management information to post to the City's website and to place in City Hall, the City of Monessen Library and the Monessen High School.

Conduct one advertised public information meeting during a Council meeting to present the status of the City's MS4 program and to solicit comments from the public.

The Environmental Advisory Board comprised of both City representatives and residents within the City will continue to take the lead in the implementation of the Public Outreach and Education program throughout the year.

BMP #2: Develop and maintain lists of target audience groups present within the areas served by your MS4.

1. For new permittees only, have the target audience lists been developed and implemented within the first year of permit coverage?

   ☐ Yes ☐ No

2. Date of latest annual review of target audience lists: March 31, 2023 Were updates made? ☒ Yes ☐ No

BMP #3: Annually publish at least one educational item on your Stormwater Management Program.

1. For new permittees only, were stormwater educational and informational items produced and published in print and/or on the Internet within the first year of permit coverage?

   ☐ Yes ☐ No

2. Date of latest annual review of educational materials: May 30, 2023 Were updates made? ☒ Yes ☐ No

3. Do you have a municipal website? ☒ Yes ☐ No (URL: https://www.cityofmonessen.com)

If Yes, what MS4-related material does it contain?

The City's website contains instructional stormwater management information from the SPC stormwater website and prepared a comprehensive Stormwater Management (SWM) Information Manual. The SWM Information Manual includes information on common acronyms and definitions, stormwater management, structural BMPs, non-structural BMPs, the MS4 program, quick resource guides for the MS4 program, homeowner's guide to stormwater, winter maintenance BMPs, pet waste cleanup, homeowner car washing techniques, proper lawn maintenance, as well the City's Ordinances for Illicit Discharge Detection and Ellimination, MS4 Operations and Maintenance, and MS4 Stormwater Management.

4. Describe any other method(s) used during the reporting period to provide information on stormwater to the public:

A copy of the SWM Information Manual was placed in City Hall for easy reference by property owners.

A copy of the SWM Information Manual was provided to the City of Monessen Library and to the Monessen High School library.

5. Identify specific plans for the publication of stormwater materials for the upcoming year:

Review, update and maintain content and items published annually on the City's website.

Review, update and maintain the content of the SWM Information Manuals located at City Hall, the City of Monessen Library, and the Monessen High School.

BMP #4: Distribute stormwater educational materials to the target audiences.

Identify the two additional methods of distributing stormwater educational materials during the previous reporting period (e.g., displays, posters, signs, pamphlets, booklets, brochures, radio, local cable TV, newspaper articles, other advertisements, bill stuffers, posters, presentations, conferences, meetings, fact sheets, giveaways, or storm drain stenciling).

Pamphlets with stormwater management information and other water quality topics are uploaded to the City's website.

Additonal information was added to the MS4 Stormwater Management Information Manuals that have been compiled in three-ring binders. One manual remains at City Hall for easy reference by property owners. The other two manuals were delivered to the City of Moneesen Library and to the Monessen High School library. The public and students will be able to check out the manuals to inform themselves about stormwater and the effects illicit discharges can have on local waterways.

MCM #1 Comments:

The Stormwater Management Information Manual was placed on the City's website in April 2018 and reinstalled in March 2021 during a major website reconstruction. An extensive upgrade to the website has made it more user friendly, provided additional information concerning the City's stormwater management programs, added links to environmental agency websites, and includes a link to a complaint form that anyone can complete and turn into the City to correct an observed stormwater issue.

MCM #2 – PUBLIC INVOLVEMENT/PARTICIPATION

BMP #1: Develop, implement and maintain a written Public Involvement and Participation Program (PIPP)

1. For new permittees only, was the PIPP developed and implemented within one year of permit coverage?

☐ Yes ☐ No

2. Date of latest annual review of PIPP: May 30, 2023 Were updates made? ☐ Yes ☒ No

BMP #2: Advertise to the public and solicit public input on ordinances, SOPs, Pollutant Reduction Plans (PRPs) (if applicable) and TMDL Plans (if applicable), including modifications thereto, prior to adoption or submission to DEP:

1. Was an MS4-related ordinance, SOP, PRP or TMDL Plan developed during the reporting period? ☒ Yes ☐ No

2. If Yes, describe how you advertised the draft document(s) and how you provided opportunities for public review, input and feedback:

A Stormwater Related Standard Operating Procedures handbook has been updated and is under review by the City and has not been formally accepted during this reporting period. However, the SOP handbook is included within the Annual Report binder located at the City building for public review.

The City has updated its Stormwater Management Ordinance based on the Westmoreland County Model Stormwater Management Odinance.

3. If an ordinance, SOP or plan was developed or amended during the reporting period, provide the following information:

Ordinance / SOP / Plan Name	Date of Public Notice	Date of Public Hearing	Date Enacted or Submitted to DEP
Stormwater Management Ordinance Ordinance No. 1247		09/14/21	09/14/21

BMP #3: Regularly solicit public involvement and participation from the target audience groups using available distribution and outreach methods.

1. At least one public meeting or other MS4 event must be held during the 5-year permit coverage period to solicit participation and feedback from target audience groups. Was this meeting or event held during the reporting period?

   ☒ Yes ☐ No If Yes, Date of Meeting or Event: March 21, 2016 Council Public Workshop Meeting to Present MS4 Program; April 21, 2016 Public Hearing for IDD&E Ordinance and MS4 O&M Ordinanca;September 19, 2017 Public Hearing for PRP; November 21, 2017 Public Hearing for SWM Ordinance, and September 14, 2021 Public Meeting for revised SWM Ordinance.

2. Report instances of cooperation and participation in MS4 activities; presentations the permittee made to local watershed and conservation organizations; and similar instances of participation or coordination with organizations in the community.

   None

3. Report activities in which members of the public assisted or participated in the meetings and in the implementation of the SWMP, including education activities or efforts such as cleanups, monitoring, storm drain stenciling, or others.

   Community Cleanup Days and Recycling Drop Off Events were held on April 23, 2022, April 17, 2021, September 19, 2020, and April 27, 2019.

MCM #2 Comments:

The City will continue to strengthen existing programs to deal with pet and yard waste, winter maintenance BMP's and illicit discharge identification.

The City will continue its program to mark inlets and storm drains.

The City intends to continue to sponsor an annual clean-up event held on Earth Day on April 23, 2023 targeting both local roadways and City owned parks. Residents along with several clubs from the Monessen High School participated. The City has also coordinated with PennDot to clean and remove the large volume of trash that has collected along Tyrol Boulevard. An additional trash cleanup will occur within the Fall of 2023 at a date to be determined.

The City sponsored another "Electronic Drop-off Day" where residents brought in and discarded unwanted electronics. Approximately three dump truck loads were taken to a Latrobe landfill where they were properly disposed. The City has been experiencing a problem with residents discarding these electronics along roadways and within abaondoned houses, so it is their hope that this program will result in less electronics discarded illegally.

MCM #3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDD&E)

BMP #1: Develop and implement a written program for the detection, elimination, and prevention of illicit discharges into the regulated small MS4.

1. For new permittees only, was the written IDD&E program developed within one year of permit coverage?

   ☐ Yes ☐ No

2. Date of latest annual review of IDD&E program: June 7, 2023 Were updates made? ☐ Yes ☒ No

BMP #2: Develop and maintain map(s) that show permittee and urbanized area boundaries, the location of all outfalls and, if applicable, observation points, and the locations and names of all surface waters that receive discharges from those outfalls. Outfalls and observation points shall be numbered on the map(s).

1. Have you completed a map(s) that includes all components of BMP #2? ☒ Yes ☐ No

   If Yes and you are a new permittee and have not submitted the map(s) previously, attach the map(s) to this report.

   If No, date by which permittee expects map(s) to be completed:

2. Date of last update or revision to map(s): June 7, 2023

3. Total No. of Outfalls in MS4: 47 Total No. of Outfalls Mapped: 47

4. Total No. of Observation Points: 47 Total No. of Observation Points Mapped: 47

5. During the reporting period, have you identified any existing outfalls that have not been previously reported to DEP in an NOI, application or annual report, or are any new MS4 outfalls proposed for the next reporting period?

   ☐ Yes ☒ No If Yes, select: ☐ Existing Outfall(s) Identified ☐ New Outfall(s) Proposed

BMP #3: In conjunction with the map(s) created under BMP #2 (either on the same map or on a different map), the permittee shall develop and maintain map(s) that show the entire storm sewer collection system within the permittee's jurisdiction that are owned or operated by the permittee (including roads, inlets, piping, swales, catch basins, channels, and any other components of the storm sewer collection system), including privately-owned components of the collection system where conveyances or BMPs on private property receive stormwater flows from upstream publicly-owned components.

1. Have you completed a map(s) that includes all components of BMP #3? ☒ Yes ☐ No

   If Yes and you are a new permittee and have not submitted the map(s) previously, attach the map(s) to this report.

   If No, date by which permittee expects map(s) to be completed:

2. If Yes to #1, is the map(s) on the same map(s) as for outfalls and receiving waters? ☒ Yes ☐ No

3. Date of last update or revision to map(s): June 30, 2023

BMP #4: Conduct dry weather screenings of MS4 outfalls to evaluate the presence of illicit discharges. If any illicit discharges are present, the permittee shall identify the source(s) and take appropriate actions to remove or correct any illicit discharges. The permittee shall also respond to reports received from the public or other agencies of suspected or confirmed illicit discharges associated with the storm sewer system, as well as take enforcement action as necessary. The permittee shall immediately report to DEP illicit discharges that would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property.

For new permittees, all identified outfalls (and if applicable observation points) must be screened during dry weather at least twice within the 5-year period following permit coverage. For existing permittees, all identified outfalls (and if applicable observation points) must be screen during dry weather at least once within the 5-year period following permit coverage and, for areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls must be screened annually during each year of permit coverage.

1. How many unique outfalls (and if applicable observation points) were screened during the reporting period? 0

2. Indicate the percentage of all outfalls screened in the past five years. 100%

3. Indicate the percent of outfalls screened during the reporting period that revealed dry weather flows: 0%

4. Did any dry weather flows reveal color, turbidity, sheen, odor, floating or submerged solids? ☒ Yes ☐ No

5. If Yes for #4, attach all sample results to this report with a map identifying the sample location. Explain the corrective action(s) taken in the attachment.

6. Do you use the MS4 Outfall Field Screening Report form (3800-FM-BCW0521) provided in the permit?

   ☒ Yes ☐ No

   If No, attach a copy of your screening report form.

BMP #5: Enact a Stormwater Management Ordinance or SOP to implement and enforce a stormwater management program that includes prohibition of non-stormwater discharges to the regulated small MS4.

1. Do you have an ordinance (municipal) or SOP or other mechanism (non-municipal) that prohibits non-stormwater discharges? ☒ Yes ☐ No

   If Yes, indicate the date of the ordinance or SOP: November 21, 2017 and September 14, 2021

2. If Yes to #1, is the ordinance or SOP consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) with respect to authorized non-stormwater discharges? ☒ Yes ☐ No

   If Yes to #2 and the ordinance or SOP has not been submitted to DEP previously, attach the ordinance or SOP.

3. Were there any violations of the ordinance or SOP during the reporting period? ☐ Yes ☒ No

   If Yes to #3, complete the table below (attach additional sheets as necessary).

Violation Date	Nature of Violation	Responsible Party	Enforcement Taken

4. Did you approve any waiver or variance during the reporting period that allowed an exception to non-stormwater discharge provisions of an ordinance or SOP? ☐ Yes ☒ No

   If Yes to #4, identify the entity that received the waiver or variance and the type of non-stormwater discharge approved.

   N/A

BMP #6: Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials (i.e., target audiences) about the program to detect and eliminate illicit discharges.

1. Was IDD&E-related information distributed to public employees, businesses, and the general public during the reporting period? ☒ Yes ☐ No

   If Yes, what was distributed? Illicit Discharge Reporting Form, the Illicit Discharge Hotline Incident Tracking Form, and the Best Management Practices for Stormwater Management on Construction Sites

2. Is there a well-publicized method for employees, businesses and the public to report stormwater pollution incidents?

   ☒ Yes ☐ No

3. Do you maintain documentation of all responses, action taken, and the time required to take action? ☒ Yes ☐ No

MCM #3 Comments:

IDD&E Protocol was developed and will be distributed to public employees, businesses and the general public via the City's webpage as well as within the Appendices of the Standard Operating Procedures Handbook distributed to the Public Works Employees. The website contains all complaint and educational forms available to the public for review and use.

A copy of the IDD&E Outfall Screening Summer 2019 Inspection Report is available within the Annual Report binder located at the City building for public review.

Further investigation has been completed on several of the suspected illicit outfalls during this reporting period and we have concluded they are being spring fed and not considered illicit, however several appear to contain acid mine drainage and will need tested. Several labs will be contacted to determine testing protocol and samples will be taken during the upcoming reporting period and sent to the lab for testing. Once lab results have been obtained, a mitigation plan will be developed.

MCM #4 – CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Are you relying on PA's statewide program for stormwater associated with construction activities to satisfy this MCM?

☒ Yes ☐ No

(If Yes, respond to questions for BMP Nos. 1, 2 and 3 only in this section. If No, respond to questions for all BMPs in this section)

BMP #1: The permittee may not issue a building or other permit or final approval to those proposing or conducting earth disturbance activities requiring an NPDES permit unless the party proposing the earth disturbance has valid NPDES Permit coverage (i.e., not expired) under 25 Pa. Code Chapter 102.

During the reporting period, did you comply with 25 Pa. Code § 102.43 (relating to withholding building or other permits or approvals until DEP or a county conservation district (CCD) has approved NPDES permit coverage)?

☐ Yes ☐ No ☒ Not Applicable (no building permit applications received)

BMP #2: A municipality or county which issues building or other permits shall notify DEP or the applicable CCD within 5 days of the receipt of an application for a permit involving an earth disturbance activity consisting of one acre or more, in accordance with 25 Pa. Code § 102.42.

During the reporting period, did you comply with 25 Pa. Code § 102.42 (relating to notifying DEP/CCD within 5 days of receiving an application involving an earth disturbance activity of one acre or more)?

☐ Yes ☐ No ☒ Not Applicable (no building permit applications received)

BMP #3: Enact, implement and enforce an ordinance or SOP to require the implementation and maintenance of E&S control BMPs, including sanctions for non-compliance, as applicable.

1. Do you have an ordinance (municipal) or SOP or other mechanism (non-municipal) that requires implementation and maintenance of E&S control BMPs? ☒ Yes ☐ No

   If Yes, indicate the date of the ordinance or SOP: April 21, 2016

2. If Yes to #1, is the ordinance or SOP consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j)? ☒ Yes ☐ No

3. If Yes to #2 and the ordinance or SOP has not been submitted previously, attach a copy of the ordinance or SOP.

BMP #4: Review Erosion and Sediment (E&S) control plans to ensure that such plans adequately consider water quality impacts and meet regulatory requirements.

Specify the number of E&S Plans you reviewed during the reporting period: N/A

BMP #5: Conduct inspections regarding installation and maintenance of E&S control measures during earth disturbance activities. Maintain records of site inspections, including dates and inspection results, in accordance with the record retention requirements in this permit.

Specify the number of E&S inspections you completed during the reporting period: N/A

BMP #6: Conduct enforcement when installation and maintenance of E&S control measures during earth disturbance activities does not comply with permit and/or regulatory requirements.

Specify the number of enforcement actions you took during the reporting period for improper E&S: N/A

BMP #7: Develop and implement requirements for construction site operators to control waste at construction sites that may cause adverse impacts to water quality. The permittee shall provide education on these requirements to construction site operators.

Specify the method(s) by which you are educating construction site operators on controlling waste at construction sites:

N/A

BMP #8: Develop and implement procedures for the receipt and consideration of public inquiries, concerns, and information submitted by the public to the permittee regarding local construction activities.

1. A tracking system has been established for receipt of public inquiries and complaints. ☐ Yes ☒ No

2. Specify the number of inquiries and complaints received during the reporting period: Zero (0)

MCM #4 Comments:

There has been no new development within the City during the current reporting period.

MCM #5 – POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

BMP #1: Enact, implement and enforce an ordinance or SOP to require post-construction stormwater management from new development and redevelopment projects, including sanctions for non-compliance.

1. Do you have an ordinance (municipal) or SOP or other mechanism (non-municipal) that requires implementation and maintenance of post-construction stormwater management (PCSM) BMPs? ☒ Yes ☐ No

   If Yes, indicate the date of the ordinance or SOP: April 21, 2016

2. If Yes to #1, is the ordinance or SOP consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j)? ☒ Yes ☐ No

3. If Yes to #2 and the ordinance or SOP has not been submitted previously, attach a copy of the ordinance or SOP.

BMP #2: Develop and implement measures to encourage and expand the use of Low Impact Development (LID) in new development and redevelopment. Measures should also be included to encourage retrofitting LID into existing development. Enact ordinances consistent with LID practices and repeal sections of ordinances that conflict with LID practices.

1. Do you have an ordinance (municipal) or SOP or other mechanism (non-municipal) that encourages and expands the use of LID in new development and redevelopment? ☐ Yes ☒ No

   If Yes, indicate the date of the ordinance or SOP:

2. If Yes to #1, is the ordinance or SOP consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j)? ☐ Yes ☐ No

3. If Yes to #2 and the ordinance or SOP has not been submitted previously, attach a copy of the ordinance or SOP.

BMP #3: Ensure adequate O&M of all post-construction stormwater management BMPs that have been installed at development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale.

1. Do you have an inventory of all PCSM BMPs that were installed to meet requirements in NPDES Permits for Stormwater Discharges Associated with Construction Activities approved since March 10, 2003? ☐ Yes ☒ No

   If Yes to #1, complete Table 1 on the next page.

2. Has proper O&M occurred during the reporting period for all PCSM BMPs? ☐ Yes ☒ No

3. If No to #2, explain what action(s) the permittee has taken or plans to take to ensure proper O&M.

   There have been no development or redevelopment projects in the permitted area that disturbed greater than or equal to one acre or projects less than one acre that are part of a larger common plan of development or sale.

If you are relying on PA's statewide program for stormwater associated with construction activities, you may skip to MCM #6, otherwise complete all questions for BMPs #4 - #6 in this section.

BMP #4: Require the implementation of a combination of structural and/or non-structural BMPs that are appropriate to the local community, that minimize water quality impacts, and that are designed to maintain pre-development runoff conditions.

1. Specify the number of PCSM Plans reviewed during the reporting period for projects disturbing greater than or equal to one acre (including projects less than one acre that are part of a larger common plan of development or sale): 0

2. Has a tracking system been established and maintained to record qualifying projects and their associated BMPs?

   ☐ Yes ☐ No

PCSM BMP INVENTORY

Table 1. To complete the information needed for MCM #5, BMP #3, list all existing structural BMPs that discharge stormwater to the permittee's MS4 that were installed to satisfy PCSM requirements for earth disturbance activities under Chapter 102, and provide the requested information (see instructions).

BMP No.	BMP Name	DA (ac)	Entity Responsible for O&M	Latitude	Longitude	Date Installed	O&M Requirements	NPDES Permit No.
1	N/A			° ' "	° ' "			
2				° ' "	° ' "			
3				° ' "	° ' "			
4				° ' "	° ' "			
5				° ' "	° ' "			
6				° ' "	° ' "			
7				° ' "	° ' "			
8				° ' "	° ' "			
9				° ' "	° ' "			
10				° ' "	° ' "			
11				° ' "	° ' "			
12				° ' "	° ' "			
13				° ' "	° ' "			
14				° ' "	° ' "			
15				° ' "	° ' "			
16				° ' "	° ' "			

BMP #5: Ensure that controls are installed that shall prevent or minimize water quality impacts. The permittee shall inspect all qualifying development or redevelopment projects during the construction phase to ensure proper installation of the approved structural PCSM BMPs. A tracking system (e.g., database, spreadsheet, or written list) shall be implemented to track the inspections conducted and to track the results of the inspections (e.g., BMPs were, or were not, installed properly).

1. During the reporting period have you inspected all qualifying development and redevelopment projects during the construction phase to ensure proper installation of approved structural BMPs?

   ☐ Yes ☐ No ☒ Not Applicable (no qualifying projects during reporting period)

2. Has a tracking system been established and maintained to record results of inspections?

   ☐ Yes ☐ No

BMP #6: Develop a written procedure that describes how the permittee shall address all required components of this MCM.

Have you developed a written plan that addresses: 1) minimum requirements for use of structural and/or non-structural BMPs in plans for development and redevelopment; 2) criteria for selecting and standards for sizing stormwater BMPs; and 3) implementation of an inspection program to ensure that BMPs are properly installed? ☒ Yes ☐ No

MCM #5 Comments:

No new development has occurred within the City during the reporting period.

The City has specified in the MS4 O&M Ordinance, the IDD&E Ordinance and the SWM Ordinance that BMPs must meet the purposes and requirements of the Ordinances and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. The Ordinances reference that various BMPs and their design standards are listed in DEP's Erosion and Sediment Polllution Control Program Manual.

MCM #6 – POLLUTION PREVENTION / GOOD HOUSEKEEPING

BMP #1: Identify and document all operations that are owned or operated by the permittee and have the potential for generating pollution in stormwater runoff to the MS4. This includes activities conducted by contractors for the permittee.

1. Have you identified all facilities and activities owned and operated by the permitee that have the potential to generate stormwater runoff into the MS4? ☒ Yes ☐ No

2. When was the inventory last reviewed? March 31, 2023, does not include contractors

3. When was it last updated? June 30, 2023, does not include contractors

BMP #2: Develop, implement and maintain a written O&M program for all operations that could contribute to the discharge of pollutants from the MS4, as identified under BMP #1. This program shall address stormwater collection or conveyance systems within the regulated MS4.

1. Have you developed a written O&M program for the operations identified in BMP #1? ☒ Yes ☐ No

2. Date of last review or update to written O&M program: March 31, 2023

BMP #3: Develop and implement an employee training program that addresses appropriate topics to further the goal of preventing or reducing the discharge of pollutants from operations to the regulated small MS4. All relevant employees and contractors shall receive training.

1. Have you developed an employee training program? ☒ Yes ☐ No

2. Date of last review or update to training program:	May 24, 2021	Date of latest training:	NA

3. Training topics covered:

4. Name(s) of training presenter(s):

5. Names of training attendees:

MCM #6 Comments:

There has been no new development within Monessen, but that does not mean there hasn't been other construction activities that include utility work, road paving and demolition of structures. Monessen has developed a Contractor Concrete Fact Sheet pertaining to Stormwater Runoff through Construction Sites and it has been added to their webpage for reference. The Public Works department will hold a training session in the Spring of 2024 to review the updated Standard Operating Procedures Handbook.

POLLUTANT CONTROL MEASURES (PCMs)

Indicate the status of implementing PCMs in Appendices A, B and/or C by completing the table below. Skip this section if PCMs are not applicable.

Task	Date Completed	Attached	Anticipated Completion Date
Storm Sewershed Map(s)	March 31, 2023	☒	
Source Inventory	NA	☐	
Investigation of Suspected Sources	NA	☐	
Ordinance/SOP for Controlling Animal Wastes		☒	10/30/2020

PCM Comments:

The storm sewershed map is completed and includes the drainage areas for each outfall.

POLLUTANT REDUCTION PLANS (PRPs) AND TMDL PLANS

1. Complete this section if the development and submission of a PRP and/or TMDL Plan was required as an attachment to the latest NOI or application or was required by the permit, regardless of whether DEP has approved the plan(s).

Type of Plan	Submission Date	DEP Approval Date	Surface Waters Addressed by Plan
☐ Chesapeake Bay PRP (Appendix D)			Chesapeake Bay
☒ Impaired Waters PRP (Appendix E)	09/17/2017	03/19/2018	Monongahela River, UNT to Speers Run, UNTs to Monongahela River
☐ TMDL Plan (Appendix F)			
☐ Combined Chesapeake Bay / Impaired Waters PRP			Chesapeake Bay,
☐ Combined PRP / TMDL Plan			

☐ Joint Plan *(if checked, list the name of the MS4 group or names of all entities participating in the joint plan below)*

Joint Plan Participants:

2. Identify the pollutants of concern and pollutant load reduction requirements under the permit (see instructions).

Type of Plan	TSS Load Reduction (lbs/yr)	TP Load Reduction (lbs/yr)	TN Load Reduction (lbs/yr)
☐ Chesapeake Bay PRP (Appendix D)			
☒ Impaired Waters PRP (Appendix E)	68,816.19	---	---
☐ TMDL Plan (Appendix F)			
☐ Combined Chesapeake Bay / Impaired Waters PRP			
☐ Combined PRP / TMDL Plan			

3. Date Final Report Demonstrating Achievement of Pollutant Load Reductions Due: March 15, 2023

4. Have any modifications to the plan(s) occurred since DEP approval? ☐ Yes ☒ No

If Yes to #4, was the updated plan(s) submitted to DEP? ☐ Yes ☐ No

If Yes to #4, did you comply with the public participation requirements of the applicable appendix? ☐ Yes ☐ No

If Yes to #4, describe the plan modifications.

5. Summary of progress achieved during reporting period.

The City has fallen behind pace with the proposed Year 5 implementation of BMPs as outlined within the approved Pollution Reduction Plan (PRP). They have continued with their street sweeping, inlet repair and inlet cleaning program.

6. Anticipated activities for next reporting period.

The City intends to install the remaining 25 water quality inlet filter bags throughout the impacted watersheds as well as restore an additional 300 linear feet of stream channel along Grand Boulevard and install a hydrodynamic separator along Tyrol Boulevard.

PRP/TMDL Plan Comments:

The City intends to continue to implement all of the proposed BMP's as per the schedule within the approved PRP during upcoming the 2024 reporting period, as well as continue to install those BMPs supposed to be installed within YEAR 5 (2022). Although not specifically included within the PRP, the City has awarded Phase 3C of the Monessen Sewer Rehabilitation Project and will be begin construction at the end of 2023 which will increase the size of approximately 750 linear feet of storm pipe and line over 5,000 linear of storm pipe that carries UNT #1 to the Monongahela River. The headwall area along Grand Boulevard will also be replaced and stabilized reducing the sediment load generated in this area and within the strorm system. The public works department has continued to implement its policy to clean inlets

and stormpipes, as well as contract out inlet repairs and replacements where needed within the MS4 watersheds. During this reporting period, the City cleaned approximately 38 inlets, repaired and/or replaced approximately 22 inlets and jetted/cleaned 12 line segments. The City also has continued to use the street sweeper efficiently in keeping sediment and garbage from entering the storm sewer system within the MS4 area removing thousands of cubic yards of material from the City streets prior to entering the storm system. These activities are not reflected within the sediment load reduction calculations, however, it demonstrates how the City is continuing to raise awareness among their employees and implement methods and strategies within their budgetary constraints to reduce pollutants entering the MS4 watersheds.

NEW BMPs FOR PRP/TMDL PLAN IMPLEMENTATION

Table 2. List all new structural BMPs installed and ongoing non-structural BMPs implemented during the reporting period that are being used toward achieving load reductions in the permittee's PRP and/or TMDL Plan (see instructions).

BMP No.	BMP Name	DA (ac)	% Imp.	BMP Extent	Units	Latitude	Longitude	Date Installed or Implemented	Planning Area?	Ch. 102?	Annual Sediment Load Reduction (lbs/yr)
						° ' "	° ' "		☐	☐	
						° ' "	° ' "		☐	☐	
						° ' "	° ' "		☐	☐	
						° ' "	° ' "		☐	☐	
						° ' "	° ' "		☐	☐	

BMP INVENTORY FOR PRP/TMDL PLAN IMPLEMENTATION

Table 3. List all existing structural BMPs that have been installed in prior reporting periods and are eligible to use toward achieving load reductions in the permittee's PRP and/or TMDL Plan (see instructions).

BMP No.	BMP Name	DA (ac)	% Imp.	BMP Extent	Units	Latitude	Longitude	Date Installed	Annual Sediment Load Reduction (lbs/yr)	Date of Latest Inspect -ion	Satis-factory?
1	UNT #1 Stream Restoration	230	31	500	LF	40°08'40"	79°52'31"	05/24/2018	22,440	6/22/21	☒
2	Water Quality Inlet Filter Bags along Monessen Boulevard Corridor tributary to UNT #1	10	31	10	EA	40°08'30"	79°52'45"	08/09/2021	6173.88	6/30/22	☒
3	UNT #2 to Mon River Stream Restoration		31	100	LF	40°09'35"	79°52'07"	06/01/2022	4488	6/30/23	☒

						° ' "	° ' "				☐
						° ' "	° ' "				☐
						° ' "	° ' "				☐

CERTIFICATION

For PAG-13 Permittees: I have read the latest PAG-13 General Permit issued by DEP and agree and certify that (1) the permittee continues to be eligible for coverage under the PAG-13 General Permit and (2) the permittee will continue to comply with the conditions of that permit, including any modifications thereto. I understand that if I do not agree to the terms and conditions of the PAG-13 General Permit, I will apply for an individual permit within 90 days of publication of the General Permit. I also acknowledge that any facility construction needed to comply with the General Permit requirements shall be designed, built, operated, and maintained in accordance with operative laws and regulations.

For All Permittees: I certify under penalty of law that this report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Ron Mozer (Mayor)	
Name of Responsible Official	Signature
(724) 684-9000 x 6	11/15/2024
Telephone No.	Date

SECTION 2

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
MINIMUM CONTROL MEASURES WRITTEN PROCEDURES
UPDATED 2022

OVERVIEW

The following document represents the City of Monessen MS4 Program Plan which addresses all six minimum control measures (MCMs) in addition to detailing the best management practices (BMPs) for each MCM. To arrive at appropriate and cost-effective BMPs, the City reviewed existing stormwater management operations, ordinances, and programming as they relate to the compliance requirements of the MS4 General Permit. The City's financial considerations included potential budget implications for each proposed BMP, such as the resources required and availability of grant/outside funds. Based on those findings and current budget allocations, the City will need to rely on grants or raise its current Line Usage Fee to support some elements of the program.

For each selected BMP, the City has identified measurable goals, responsible parties, timelines, and evaluation methods. This document shall serve as the written procedure for each minimal control measure and the corresponding BMP's. This MS4 Program Plan has six sections, covering each of the six MCMs in the MS4 General Permit.

MINIMUM CONTROL MEASURES

MCM # 1: Public Education and Outreach Program

Stormwater runoff is generated from various pervious and impervious surfaces (e.g. roads, sidewalks, lawns, managed green spaces such as golf courses, driveways, and roofs) and efforts to control stormwater pollution must consider individual, household, business and public behavior and activities that can generate pollution coming from these and other surfaces. The purpose of outreach is to educate the public about the significance their behaviors can have on stormwater pollution and encourage changes in behavior to reduce future stormwater pollution. A variety of actions will be conducted to educate the public in attempts to change behavior within the City's permitted MS4 area. The PEOP is designed to guide the City through the steps it must take to increase target audience knowledge about stormwater pollution reduction. The PEOP was developed to address the MS4 Permit requirements related directly to the MCM. There are numerous other education and outreach steps that can be taken to supplement other aspects of permit compliance and to improve water quality in the City. To achieve the City's goals and objectives, Monessen will revise and adapt the PEOP annually throughout the permit term to address observed weaknesses or shortcomings. Per the Pennsylvania Department of Environmental Protection (PADEP) NPDES Permit, there are 4 Best Management Practices (BMPs) that the City must comply with and they are as follows:

BMP 1: Develop, implement and maintain a written Public Education and Outreach Program (PEOP)

This document shall serve as the written Public Education and Outreach Program (PEOP). The PEOP was created by the City Engineer with the input of all members of City Council, the Public Works Department and the Mayor, as storm water involves the entire City. This program will be reviewed and updated as needed, but no less than once per year.

Objective: Ensure the City has an adequate array of written materials to effectively reach identified target audiences.

Measurable Goal(s):

Increasing target audience knowledge about the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns.

Increasing target audience knowledge of hazard associated with illegal discharges and improper disposal of waste, including pertinent legal implications.

Implementing a diverse program with strategies that are targeted toward audiences most likely to have significant stormwater impacts.

Necessary Documents: None

Responsible Party: City Administrator

Schedule: Materials to be developed and distributed by the end of year 1

Items to Report: List of additional materials developed

Method of Evaluation: Review of the availability and effectiveness of public education materials to target stormwater management, water quality, and stormwater pollution prevention messages to the City's target audiences.

BMP 2: Develop and maintain lists of target audience groups that are present within the areas served by your regulated MS4s.

According to the 2017 United States Census Data, the City of Monessen has a population of approximately 7,339. Having a target audience list can provide the City with a means of understanding who can impact surface water through storm water runoff. The City believes that everyone who lives, works, or frequents Monessen can have an impact on storm water, whether it be positive or negative. The target audiences will be provided storm water information tailored to how they can negatively or positively affect storm water. The target audiences will all be provided general information pertaining to the City's Stormwater Management Program as well as information pertaining to illicit discharges and how to reduce generating storm water pollution runoff. The following are the target audiences that the City has compiled:

Residents: The City has approximately 7,339 residents. A complete listing of all residents in the City can be found in the tax office. Residents have a large impact on storm water pollution and it is essential that the City educate the residents on how they can do their part helping storm water.

Businesses: The City of Monessen has approximately **266** businesses. Some businesses can have a larger impact on storm water pollution compared to others. For example, businesses, like garages and restaurants, handle oils that could be drained into storm water inlets. These businesses are provided education tailored to how they could specifically impact storm water.

Contractors: The City has numerous contractors that frequently work in the City and surrounding area. Education to contractors is essential due to the materials that are being used at construction sites, as well as the physical moving of earth and how that can impact waterways by entering the MS4. Mud and soil on a construction site should

stay on the site or it could be picked up in runoff and carried into the MS4 conveyances creating sedimentation and high turbidity. Contractors will be informed that all materials and mediums used on site, such as concrete, should be properly used and disposed of. Contractors also need to ensure that all Erosion & Sediment (E&S) Controls are in place and properly installed.

Schools: The only school district represented within the City is Monessen Public School System. Schools are an essential route of communicating the importance of storm water to youth. Students and teachers can also get involved with the community and help spread storm water education to their families. Monessen High School is located at:

1245 State Road
Monessen, Pennsylvania 15062

Library: Monessen Public Library is a target audience for the City, as it is utilized by many members of the community. The City may distribute pamphlets and flyers at the library and is also purchase stormwater educational books to be placed within the library to provide to the public the opportunity to check out at their leisure. Monessen Public Library is located at:

326 Donner Avenue
Monessen, PA 15062
(724) 684-4750

Churches: Churches within the City are considered a target audience because of the potential of generating storm water pollution run off. Churches often hold benefit dinners and events that produce food waste (i.e. grease). The City will provide educational material to the churches of how to properly dispose of these wastes, as well as detecting illicit discharges.

Boy/Girl Scouts: Boy/Girl Scouts is an environmentally friendly, active group in the City that strives to make the community a better place for everyone. The Scouts provide the City with the opportunity to solicit their volunteer hours to make the waterways cleaner. The Scouts will also be provided informational education materials pertaining to storm water through pamphlets, flyers, or brochures.

Municipal Employees: Municipal employees include all administrative personnel, public works, parks and recreation, community center, police, fire, all emergency response personnel, elected officials, and all others employed by Monessen. All municipal employees have been given MS4 related information and have been trained. Training is further discussed in MCM #6 Written Plan. At all training sessions, the

employees are given the presentations for their use. Documentation of training and information given to employees is recorded by a sign in sheet that is placed in the MS4 files.

Objective: Develop, review and maintain lists of target audience groups that are present within the areas served by your regulated small MS4s.

Measurable Goal: The lists shall continue to be reviewed and updated annually.

Necessary Documents: Target Audience Lists (See Appendices)

Responsible Party: City Administrator

Schedule: Materials to be developed by the end of the year 2

Items to Report: Items required in the MS4 General Permit, as follows:

Description and estimation of target audience(s)

1. Residents
2. Businesses
3. Library
4. School
5. Municipal Employees

Method of training (take-home training slides, in person training, etc.)

1. Municipal Watershed Maps
2. Brochures
3. Fact Sheets
4. Short & Engaging Videos
5. Illicit Discharge Report Forms

Associated educational and outreach materials

Number of trainings

Number of materials distributed/individuals reached

Planned PEOP activities for next reporting period

Method of Evaluation: Observations and evaluations for the following key points in the process as described in PEOP:

Planning and Development

Execution of Actions

Target Audience Feedback

Behavior Change and Evaluation Period

BMP 3: Permitees must annually publish at least one issue of a newsletter, a pamphlet, a flyer, or a web site that includes general stormwater educational information, a general description of your Stormwater Management Program, and/or information about your stormwater management activities…

The City must annually publish at least one issue of a newsletter, a pamphlet, a flyer, or a web site that includes general storm water educational material, a general description of the City's Storm Water Management Program (SWMP), and/or information about the storm water management activities. Monessen strives to not only meet the requirements set for the City, but also to help positively influence the surrounding municipalities and their waterways. Monessen is in constant contact with multiple municipalities, in the immediate area, to discuss the opportunities of educating the public pertaining to storm water. When able, Monessen will collaborate with other municipalities in appropriate projects, to meet the requirements in MCM #1. The list of publications and the content of the publications must be reviewed and updated at least once during each year of permit coverage. Publications should include a list of references (or links) to refer the reader to additional information (e.g., PADEP and US EPA storm water websites, and any other sources that will be helpful to readers).

Newsletters: Monessen publishes a newsletter and provides it to all residents on the City website. Hard copies of the newsletter are also on file at the municipal building and public library. The newsletter contains MS4 related material to inform the target audiences on different topics and aspects of the storm water program.

Website: The City has a municipal website located at www.cityofmonessen.com. The website has a page dedicated to storm water information. The information given to the viewers describes the overall Monessen Storm Water Management Program and that the City is under a permit to comply with MS4 regulations. The storm water page also gives tips and information to residents and business owners on ways they can help reduce storm water pollution. The site describes the six Minimum Control Measures (MCMs) and what they are. Illicit discharges are also on the site and inform the public what an illicit discharge is, as well as how to report them. There is a link to a complaint form on the website that anyone can fill out and turn in to the City to correct. This is true for construction site reporting as well. There is a form for construction site complaints that residents can utilize. Lastly, the City's storm water page has links to additional resources such as PADEP, Three Rivers Wet Weather, and Westmoreland Conservation District.

Objective: Reach as wide and diverse an audience as possible using public media to convey basic messages regarding household and public strategies for reducing stormwater pollution impacts and other related topics.

Measurable Goal: Review, update and maintain content and items published annually.

Necessary Documents: Newsletter and materials from the City's Website.

Responsible Party: City Administrator

Schedule: Ongoing program

Items to Report: Number of announcements run per year, along with estimates of audience.

Method of Evaluation: Review of website visitors, number of flyers distributed

BMP 4: Distribute stormwater educational materials and/or information to the target audience using a variety of distribution methods.

All permittees shall select and utilize at least two distribution methods in each permit year. These are in addition to BMP#3.

Pamphlets: The City of Monessen utilizes many different pamphlets to provide the public with storm water information. Pamphlets are uploaded to the website for viewing and are frequently changed. The changes in the pamphlets are documented via filling out a spreadsheet. Trifolds and pamphlets are available for the public at the municipal building.

Stormwater Books: The Monessen Public Library is going to be provided books with storm water management topics purchased by the City. The public will be able to check out the books to inform themselves about storm water and the effects illicit discharges can have on local waterways.

Objective: Provide a standard delivery and distribution point for printed education materials on proper household strategies for stormwater management, surface water quality improvements, and stormwater pollution prevention.

Measurable Goal: Printed materials established and maintained at the Municipal Building, Schools, local businesses and the Library.

Necessary Documents: Make lists of documents available to the residents of Monessen

Responsible Party: City Administrator

Schedule: Provide printed materials by the conclusion of Permit Year 3 and maintain throughout the remainder of the permit cycle.

Items to Report: Number of distribution points utilized, as well as the number and type of printed materials supplied to each distribution point through the year

Method of Evaluation: Review number and type of materials distributed throughout the year to evaluate utilization of this media

MCM # 2: Public Involvement/Participation

The City added a stormwater page to their website, located at www.cityofmonessen.com. The page is used to provide citizens with information about the stormwater program. Available on that page are links to the Stormwater Ordinance, the Stormwater Management Plan, annual progress reports, and other educational and environmental information.

The City's Stormwater Management Program webpage is a gateway for citizens to access information on public events via the City's calendar.

BMP 1: Develop, implement and maintain a Public Involvement and Participation Program (PIPP).

This document shall serve as the written Public Involvement/Participation Program (PIPP). The PIPP was created by the City Engineer with the input of all members of City Council, the Public Works Department and the Mayor, as storm water involves the entire City. This program will be reviewed and updated as needed, but no less than once per year.

Objective: To make the MS4 Program Plan and annual reports available online to the City citizens in multiple formats and multiple venues.

Measurable Goal: Posting of Downloadable copies of the MS4 Program Plan and annual reports on the City's Stormwater Management Program webpage.

Necessary Documents: MS4 Program Plan and Annual reports

Responsible Party: City Administrator

Schedule: Both Documents shall be available online within 60 Days of submittal of each annual report.

Items to Report: Date MS4 Program Plan and annual reports were posted online, and verification of web link to them.

Method of Evaluation: Verification that both documents were posted within the required time frame, verification the web link works, and verification of successful downloads of the posted documents.

BMP 2: Prior to adoption of any ordinance required by the permit, provide adequate public notice and opportunities for public review, input, and feedback.

The City of Monessen enacted and ordinated Stormwater Ordinance No. 2-2017. The adoption of the ordinance was advertised properly according to Municipal Planning Code (MPC) as well as the newspaper provided to the immediate area. Advertisement was additionally advertised on the municipal website. Documentation of the advertisements can be found in the MS4 files located in the municipal building. The City encourages the public to comment on the program as a whole and to participate in decision-making processes. The comments and concerns of the public are documented by being retained in the meeting minutes. The minutes that include storm water comments are available in the MS4 files located in the municipal building. The aforementioned documentation, including meeting minutes, storm water ordinances, and advertisements will be attached and included to the Annual Report given to the PADEP. The Annual Report is available for viewing at the municipal building in the MS4 files.

Objective: Inform City citizens of the availability of the MS4 Program Plan and provide those potentially affected by the MS4 Program Plan the opportunity to participate in the process via public commentary.

Measurable Goal: Publicly announce that the proposed MS4 Program Plan is available for comment via platforms such as the City Stormwater Management Program webpage, and that public comment will be accepted.

Public announcement/comment solicitation shall allow sufficient time for public comment and consideration of received comments, prior to the submittal of the MS4 Program Plan and registration statement to DEP for the next permit reapplication (at least 90-days prior to permit expiration).

Necessary Documents: MS4 Program Plan

Responsible Party: City Administrator

Schedule: Implement during Permit Year 2

Items to Report: Copy of public announcement/comment solicitation, list of venues to which announcement/solicitation was submitted, any public comments received and their consideration (last item submitted as part of the next permit reapplication process).

Evaluation: Successful posting of public announcement/comment solicitation during Permit Year 2, number and type of public comments received, and evaluation of public comments.

BMP 3: Regularly solicit public involvement and participation from the target audience groups

Objective: Hold meetings/ seminars at Municipal Building and schools, hands-on training sessions and organized implementation efforts such as cleanups, drain marking and implementing new Standard Operating Procedures (SOP's) within various City Departments.

Measurable Goal: To educate various target audience groups and employees.

Necessary Documents: None

Responsible Party: City Administrator

Schedule: Annually

Items to Report: Meeting Schedule and activities completed

Pubic solicitation of participation and involvement of the target audiences is achieved by multiple avenues in the City. Avenues Monessen uses, and has used in the past, includes public meetings, hands-on training sessions, and organized implementation efforts such as cleanups. Listed below are Events/BMP's the City implements pertaining to soliciting public involvement and participation:

BMP 3.1 Pet Waste and Nutrient Management for Residents

Objective: The City will continue to raise awareness and enforce current policies requiring pet owners to clean up after their animals while in public parks and on their private property. The City will begin to educate citizens on nutrient management for their private landscapes, as well as on leaf composting and collection. Methods include a publication on the City's website, at local veterinarian offices, at the Treasurer's office (to be handed out during pet licensing) and place in various City offices. The Parks and Recreation Department will continue to monitor doggie spots and refill bags at pet waste stations, located at various locations throughout Monessen. The City will create a nutrient management guide for citizens. The City will also develop a publication regarding leaf collection and composting. Both publications will be placed on Monessen's website and within the Library, High School, and the City Municipal building during the upcoming plan year.

Measurable Goals: The City will gather information about the effectiveness of current Pet Waste Management policies and develop ways to improve the policies and increase

awareness. The City will gather information on the effectiveness of nutrient management and leaf collection publications.

Necessary Documents: Pet waste literature handed out during licensing process, website, veterinarian offices, and placed in City buildings. Nutrient Management and Leaf Collection publications to be place on the website.

Responsible Party: City Administrator and Parks and Recreation Department

Schedule: Annually

Items to Report: Copies of updated written policies and literature.

BMP 3.2 Identify high priority water quality issues

Objective: The City has identified 3 issues affecting water quality that will be considered high priorities. These issues are: pet & yard waste, road salt storage and illicit discharge identification. Programs have been in place to deal with these issues, however, the City will formalize and strengthen efforts to address each issue. These efforts will include identifying the group having the most impact on each, continuing to develop relevant outreach materials and develop activities to raise awareness. Needed improvements will be identified and strategies to implement the improvements will be formulated. SOP's have been developed and implemented.

Measurable Goals: The City will continue to evaluate the effectiveness of the current programs and develop ways to improve and increase awareness, while monitoring the newly created SOP's and how they are implemented within the municipality.

Necessary Documents: Written policies and procedures

Responsible Party: City Engineer, Public Works Department, Parks & Rec Department

Schedule: Ongoing program to be annually updated.

Items to Report: Written copies of the SOP's and written narrative describing the results of the evaluation and improvements that were identified.

BMP 3.3 Drain Marking Program

Objective: The City will continue its program to mark inlets and storm drains. The inventory of storm drain locations will identify the drains most easily accessible to the public and that may be vulnerable to illicit dumping. All drains will be marked and mapped. The City will solicit participation from local Boy/Girl Scouts to stencil the storm sewers throughout the area.

Measurable Goals: Completion of the storm drain inventory and identifying the most vulnerable drains to illicit dumping.

Necessary documents: Storm drain and Outfall Inventory

Responsible Party: City Engineer and Public Works Department

Schedule: Ongoing program

Items to Report: Outfall Inventory and Storm Drain Map

BMP 3.4 Annual Clean Up Events

Objective: The City and its partner organizations will sponsor clean up events that encourage the public to engage in cleaning up the streams, river and roadways within the City Limits. Emphasis is placed on removing foreign debris, litter, etc. Events will be publicized through various media in order to have as much participation as possible. Safety vests, garbage bags, gloves and water are provided to the volunteers.

Measurable Goals: At least one clean-up event per year

Necessary Documents: Website, News releases, social media postings

Responsible Party: Public Works Department and City Administrator

Schedule: A minimum annual event, but volunteer groups could participate as an ongoing program throughout the year

Items to Report: A summary of the clean-up events and list of roads or stream sections cleaned

MCM # 3: Illicit Discharge Detection and Elimination (IDD&E)

As part of the outreach program, the City will encourage citizens to report any illegal tie-ins or toxic waste dumping they observe. Common stormwater pollutants that may be found in City of Monessen MS4 area include bacteria from pet waste and wildlife; chemicals contained in materials used on yards and green spaces such as fertilizers; and chemicals contained in leaked, spilled or dumped materials such as oils, lubricants, and cleaners. Illicit discharge detection and elimination (IDD&E) is important because some stormwater runoff from the City's MS4 flows directly to streams and rivers without additional treatment. Illicit discharges often include pathogens, nutrients, surfactants, and various toxic pollutants.

According to the EPA, one of the most widespread environmental problems is nutrient pollution, caused by excess nitrogen and phosphorus in surface water. Nitrogen and phosphorous are naturally found in surface waters and, under normal circumstances, contribute to the presence of food and habitat for fish, shellfish, and other organisms. When too much nitrogen and phosphorous enter a water body it can cause algae to grow quickly. The algae deplete the water of dissolved oxygen, which can result in the illness and/or death of fish and other aquatic life. Excessive amounts of algae can also be a risk to human health because they produce elevated levels of toxins and bacterial growth.

The EPA also lists sediment as the most common pollutant in rivers, streams and lakes. While natural erosion produces nearly 30 percent of the total sediment in the United States, the accelerated erosion from human use of land accounts for the remaining 70 percent. The most common concentrated sediment releases come from construction activities. The sediment in the streams disrupts the natural food chain by covering over habitat, increases the costs of treating drinking water and can reduce navigation for both commercial and recreational uses. Sediment is considered an illicit discharge if it is draining into a waterbody from a point source and should be reported.

The City storm sewer system was initially mapped and identified outfalls along the Monongahela River, and other unnamed tributaries. The system is updated approximately every 12 months to identify new construction, or to add previously undiscovered outfalls, and that process will continue into the foreseeable future. Regulated outfalls have been ranked, based on surrounding land uses, for the likelihood of an illicit discharge. Dry weather screening is conducted on those outfalls with a high ranking. Those outfalls with a moderate ranking are field checked for evidence of illicit discharge activity within the watershed. The City is planning on implementing an online citizen complaint form for reporting illicit discharges and related concerns. The City is in process of implementing IDD&E procedures which will become part of Subdivision and Land Development Ordinance.

BMP 1: Develop and implement a written IDD&E Program for the detection, elimination, and prevention of illicit discharges in your regulated MS4s.

Objective: Develop a written IDD&E Ordinance

Measurable Goal: Annual updates to the City Storm Sewer System Map

Necessary Documents: None

Responsible Party: City Public Works Department and Engineer

Schedule: Ongoing program

Items to Report: Dates of IDD&E Ordinance Approval

Method of Evaluation: Review of ordinance to confirm it remains accurate and current with all regulations

BMP 2: Develop and maintain a map of your regulated small MS4. The map must also show the location of all outfalls and the locations and names of all surface waters of the Commonwealth (e.g., creek, stream, pond, lake, basin, swale, channel) that receive discharges from those outfalls.

Objective: Maintain map with the specific and required information related to each MS4 outfall

Measurable Goal: Annual update of the MS4 Outfall Data

Necessary Documents: City Outfall Mapping

Responsible Party: City Engineer

Schedule: A comprehensive database of outfalls created by the conclusion of Permit Year 4 with updates continuing as an ongoing program thereafter.

Items to Report: Dates of MS4 Outfall Mapping updates. In Permit Year 4 the current MS4 Outfall Mapping is to be included in the Annual Report.

Method of Evaluation: Review of City Storm Sewer System Map and MS4 Outfall Data Information.

BMP 3: In conjunction with the map(s) created under BMP #2 (either on the same map or on a different map), new permittees shall show, and renewal permittees shall update, the entire storm sewer collection system, including roads, inlets, piping, swales, catch basins, channels, basins, and any other features of the permittee's storm sewer system including municipal boundaries and or watershed boundaries.

Objective: Effectively and efficiently identify illicit discharges within the City's MS4 with detailed mapping.

Measurable Goal: Continue dry weather screening of MS4 outfall pipes and source reconnaissance per the revised IDD&E procedures.

Necessary Documents: IDD&E Procedure

Responsible Party: City Public Works Department and Engineer

Schedule: Ongoing program, with implementation of revised IDD&E procedures by the start of Permit Year 3.

Items to Report: Total number of outfalls screened, screening results, and detail of any related follow-up actions. Results of the source reconnaissance effort and detail of any related follow-up actions.

Method of Evaluation: Review of IDD&E procedures, including dry weather screening and source reconnaissance techniques, and their success in detecting illicit discharges to the MS4.

BMP 4: The permittee shall conduct outfall screening, identify the source of any illicit discharges, and remove or correct any illicit discharges using procedures developed under BMP #1.

Objective: Eliminate, illicit discharges to the MS4 based on the City's IDD&E procedures established per Section II.B.3 c of the MS4 General Permit

Measurable Goal: Implement the City's IDD&E procedures to address suspected illicit discharges discovered through dry weather screening, observations of City Public Works Department, or calls and reports from the general public.

Necessary Documents: IDD&E Procedure, City Stormwater Management Ordinance, Annual Outfall Screening Report

Responsible Party: City Administrator/Public Works Department/Engineer

Schedule: Ongoing program, with implementation of revised IDD&E procedures at the start of Permit Year 3

Items to Report: Summary of each investigation of any suspected illicit discharge as follows:

1. Date(s) suspected discharge observed and/or reported
2. Results of the investigation
3. Any follow-ups to the investigation
4. Resolution of investigation
5. Date investigation completed/closed

Method of Evaluation: Review of IDD&E procedures and their success in finding and eliminating illicit discharges to the City's MS4.

BMP 5: Enact a stormwater management ordinance.

Objective: Draft an MS4 based stormwater management ordinance.

Measurable Goal: Ensure the post-construction stormwater runoff from land development projects meets the requirements of the MS4 program established by the PADEP through the current permit cycle for both water quality and rate control.

Necessary Documents: NA

Responsible Party: City Administrator/Engineer

Schedule: Completion by end of Permit Year 2

Items to Report: Approval dates of stormwater ordinance amended/enacted.

Method of Evaluation: N/A

BMP 6: Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials (i.e., target audiences) about the program

Objective: Educate audience about illicit discharges through a variety of methods including City website, mailings and public meetings.

Measurable Goal: Distribute printed material once a year to target audience
Have local group stencil inlets throughout City
Develop webpage educating residents about IDD&E.

Educational flyer
Volunteer solicitation

Necessary Documents:
Webpage materials Illicit discharge complaint form

Responsible Party: City Administrator, Public Works Department and City Engineer

Schedule: Ongoing program

Items to Report: Webpage visits/ number of illicit discharges reported, number of flyers distributed, volunteer program efforts, recycling program statistics.

Method of Evaluation: Track number of discharges reported an increase in volunteer requests.

MCM # 4 Construction Site Stormwater Runoff Control

The City currently has a memorandum of understanding with the Westmoreland Conservation District (WCD)for E&S Program oversight and enforcement (website located at www.wcdpa.com). Construction site operators are required to have an approved E&S plan prior to commencement of land disturbing activities. E&S plans are required to be compliant with the minimum standards of the PADEP. For construction activities that result in a land disturbance of greater than one acre, a Pennsylvania Stormwater Manager Program (NPDES) General Permit for Stormwater Discharges from Construction Activities is required. The City will not issue a land disturbance permit until the NPDES requirements have been met.

The website is managed by the City to encourage citizens to call on a variety of issues such as: erosion, sediment control, stormwater management, water quality, and other compliance issues or concerns. Information on or access to these programs is available online. Westmoreland Conservation District performs both the E&S plan reviews and approvals, E&S inspections, and any related enforcement actions. They also administrator the NPDES Permit Program for construction site storm water runoff. Westmoreland Conservation District collaborates with PA DEP for NPDES Permit Reviews and enforcement actions.

Construction Site Stormwater Runoff Control BMPs

BMP 1: Develop a construction site stormwater runoff control program. Your program shall describe clearly how your efforts will be coordinated with DEP's NPDES Construction Stormwater Permitting program.

Objective: Ensure that administration and implementation of the City E&S Program complies with the Pennsylvania Erosion and Sediment Control Regulations. Draft an Erosion and Sediment Control Ordinance.

Measurable Goal: Maintain a relationship with Westmoreland Conservation District and PA DEP for program administration

Necessary Documents: Most current version of documents, as follows:

a. Memorandum of understanding with WCD
b. City Subdivision & Land Development Ordinance
c. Zoning Permits
d. Building Permits
e. Driveway Permits

Responsible Party: City Administrator, Public Works Department, and Engineer

Schedule: Ongoing program

Items to Report: For each annual report, the following shall be tracked and submitted:

a. Total number of regulated land-disturbing activities
b. Total number of acres disturbed
c. Total number of inspections conducted
d. A summary of the enforcement actions taken, including the type and total number of enforcement actions taken during the reporting period.

Method of Evaluation: City self-audit procedures and periodic City program audit by DEP

BMP 2: The permittee shall enact, implement, and enforce an ordinance to require the implementation or erosion and sediment control BMPs, as well as sanctions to ensure compliance.

Objective: Verify compliance with construction site management protocols and BMPs for land disturbing activities, meeting the permit thresholds

Measurable Goal: Ensure NPDES permits are issued for those projects meeting the NPDES threshold requirements

Necessary Documents: Copies of the NPDES General Permits issued for Stormwater Discharges from Construction Activities and Land Development approvals

Responsible Party: City Administrator and Engineer

Schedule: Ongoing program

Items to Report: Number of Land Developments approved and total number of NPDES Permits issued

Method of Evaluation: N/A

BMP 3: Develop and implement requirements for construction site operators to control waste at the construction site that may cause adverse impacts to water quality.

Objective: Ensure land disturbing activities in the City are properly permitted through the Westmoreland Conservation District and PADEP

Measurable Goal: Implementation shall include two conceptual tools:

a. Complaint Form, for receipt of information from the public
b. City employee program, to note un-permitted land disturbances

Necessary Documents: Complaint Form records and enforcement/corrective action records.

Responsible Party: City Administrator, Public Works Department and City Engineer

Schedule: Ongoing program

Items to Report: Number of non-filers identified each year; number of enforcement/ corrective actions initiated each year

Method of Evaluation: Review of established and implemented procedures to evaluate success in identifying non-filers for required City permits

BMP 4: Develop and implement procedures for the receipt and consideration of public inquiries, concerns, and information submitted by the public (to the permittee) regarding local construction activities.

Objective: Provide channels for residents to discuss concerns regarding construction activity, such as a "hotline" and webpage.

Measurable Goal: Track number of calls and webpage visits. Discuss with residents the effectiveness of these methods and respond to concerns.

Necessary Documents: Report Form

Responsible Party: City Administrator

Schedule: Ongoing program

Items to Report: Total number of calls, report forms filed

Method of Evaluation: Judge effectiveness by tracking number of calls/report

MCM # 5 Post Construction Stormwater Management

The City has a Subdivision and Land Development Ordinance (Subdivision & Land Development Ordinance) which addresses the design of stormwater conveyance systems and related BMPs. In addition to some specific supplemental standards, the Subdivision & Land Development Ordinance adopts the most current versions of the PADOT Drainage Manual, the Pennsylvania Erosion and Sediment Control Handbook, and Pennsylvania Stormwater BMP manual. Low Impact Design (LID) methods are encouraged in the ordinance which also created an enforcement capability to certify that those facilities remaining under private control are regularly inspected and maintained.

The City's current maintenance program includes an annual inspection of all BMPs. Once every two years, a more thorough structural inspection is performed on the wet and dry stormwater management ponds. All other stormwater facilities are inspected on a five-year inspection cycle. The City Council and City Engineer are responsible for review, approval, and construction inspection of stormwater management facilities. Post-construction inspection and maintenance of stormwater management facilities, in both new development and re-development, are the responsibility of the Code Enforcement Officer and City Engineer.

Post-Construction Stormwater Management BMPs

BMP 1: Develop a written PCSM procedure.

Objective: Develop a written PCSM procedure. Guidance can be found in the Pennsylvania Stormwater Best Management Practices Manual.

Measurable Goal: Ensure post-construction stormwater runoff from land development projects, for both quantity and quality, meets the requirements of the Subdivision & Land Development Ordinance through the current permit cycle.

Necessary Documents: Subdivision and Land Development Ordinance

Responsible Party: City Administrator and City Engineer

Schedule: Ongoing program

Items to Report: Information required for updating the inventory of permanent post-construction BMPs that discharge to the regulated small MS4.

Method of Evaluation: Review City's Subdivision & Land Development Ordinance and stormwater management post construction BMP report to evaluate effectiveness in requiring post- construction BMPs, both quantity and quality, with adjustments/alternatives to be determined, as needed.

BMP 2: Require implementation of combination of structural and/or non- structural BMPs.

Objective: Ensure that the City's permanent post-construction stormwater management facilities are functioning as designed for stormwater runoff quality and quantity management.

Measurable Goal: The City will perform annual inspections of the permanent post-construction stormwater management BMPs within the City.

Necessary Documents: Subdivision & Land Development Ordinance and City stormwater facility inspection report

Responsible Party: City Administrator and City Engineer

Schedule: Ongoing program

Items to Report: Stormwater management facility inspection forms

Method of Evaluation: N/A

BMP 3: Ensure that controls are installed to prevent or minimize water quality impacts.

Objective: Provide long-term maintenance, as necessary, so that permanent stormwater facilities for which the City has primary maintenance responsibility are functioning to their original design capabilities

Measurable Goal: Maintenance performed, as necessary, so applicable facilities are functioning to original design capabilities

Necessary Documents: Stormwater management facility inspection forms

Responsible Party: City Administrator and City Engineer

Schedule: Ongoing program

Items to Report: Stormwater management facility maintenance activity

Method of Evaluation: N/A

BMP 4: Enact, implement, and enforce a post-construction stormwater ordinance.

Objective: Ensure that permanent stormwater facilities for which the property owner has primary maintenance responsibility are receiving adequate long-term maintenance to function at their original design capability

Measurable Goal: Notify property owners responsible for maintaining stormwater management facilities of any deficiencies discovered during City inspections and ensure facilities are functioning to their original design capability utilizing enforcement procedures.

Necessary Documents: Subdivision & Land Development Ordinance, stormwater facility inspection report

Responsible Party: City Administrator and City Engineer

Schedule: Ongoing

Items to Report: Stormwater management facility maintenance inspection reports and enforcement documentation for privately maintained stormwater facilities for the permit year.

Method of Evaluation: Review record of maintenance execution based on requirements conveyed in inspection reports.

BMP 5: Encourage and expand the use of Low Impact Development (LID)

Objective: Develop and implement measures to encourage and expand the use of LID in new and redevelopment.

Measurable Goal: Enact ordinances consistent with LID practices or terminate existing ordinances that conflict with LID practices.

Necessary Documents: Publication # EPA 841-F-07-006 – Reducing stormwater costs through Low Impact Development (LID) strategies and practices.

Responsible Party: City Administrator or City Engineer

Schedule: Year 3

Items to Report: Ordinance amended/enacted

Method of Evaluation: N/A

BMP 6: Ensure adequate operation and maintenance of PCSM BMPs.

Objective: Develop standardized and enforceable methods for the long-term maintenance of stormwater management facilities designed to treat runoff from individual residential lots.

Measurable Goal: Create the necessary mechanisms for handling the long-term maintenance of stormwater management facilities designed to treat runoff from individual residential lots.

Necessary Documents: MS4 General Permit, MS4 Program Plan, and Subdivision & Land Development Ordinance

Responsible Party: City Administrator, Public Works Department and Engineer.

Schedule: Ongoing program

Items to Report: Stormwater management facility inspection reports and enforcement

Method of Evaluation: Pre- and post-training evaluations for maintenance inspection staff

MCM # 6 Pollution Prevention/Good Housekeeping for Municipal Operations

Pollution Prevention/Good Housekeeping for Municipal Operations BMPs

BMP 1: Identify and document all MS4-related facilities and activities.

Objective: Document all City owned and/or operated facilities and activities.

Measurable Goal: Develop and update list

Necessary Documents: Facility list

Responsible Party: City Administrator and Public Works Department

Schedule: Completion by end of Permit Year 2

Items to Report: N/A

Method of Evaluation: N/A

BMP 2: Develop, implement, and maintain a written Operation and Maintenance Program.

The following are municipal operations that could contribute to runoff of storm water to the MS4:

Street Sweeping: Street sweeping is an important BMP that the City utilizes for the MS4 program. Collecting debris, garbage, cinders, and other material off of the City roads prevents it from polluting the MS4. Monessen currently owns a street sweeper and the vehicle is stored in the Public Works garage every night to ensure that no pollutants will be carried within the runoff from a potential leak from the sweeper into the MS4 stormwater system. The street sweeper is utilized weekly and driven by a Public Works employee. Debris and materials collected from the roads are kept in the sweeper until full, and then disposed of at the storage yard adjacent to the City Garage.

Snow Removal/Deicing: Snow removal and deicing are important to the safety of Monessen residents. Salt has a large, and harmful, impact to surface water due to the solubility of chloride in water. Chloride is toxic to aquatic life and there is no natural

process to break down chloride to remove it from the environment. The result of high salt in water is low oxygen, making the water non-viable for aquatic life. Properly dispersing salt, and calibrating the plow trucks, ensures that the least amount of salt is used while keeping the residents safe. On average, the City uses 1,800 tons of salt per year, depending on the severity of winter and amount of snowfall and ice received in the surrounding area. The City roads are pre-treated in the winter before a snow storm. Salt is the material most used for deicing in Monessen. It is common practice for the City to use an additive (calcium) to the salt to increase the productivity. The salt is stored in a garage located in the Public Works storage yard. The salt is observed daily to ensure that it is kept under cover to prevent the contribution of pollutants to the abutting storm system. During a snow event, the City has 5 active plow trucks, which are all stored in the Public Works garage when not in use. All drains in the garage are tied into the sanitary sewer to ensure that no contaminants are reaching the MS4. Wash water is also diverted to the sanitary to prevent contaminants in the MS4 or infiltrating into groundwater.

Inlet/Outfall Cleaning: City of Monessen Public Works personnel and engineer screen every outfall and inlet in the City yearly. Inlets and catch basins frequently collect debris, garbage, and sediment, per their design, that requires maintenance or cleaning. All City inlets are inspected by Public Works personnel and the maintenance required is documented on an inspection sheet. This documentation is kept in the MS4 files located at the municipal building. When there is an observation made that an inlet, catch basin, or outfall needs maintenance, cleaned, or some form of attention, it is put on a schedule by the Public Works Director. The Public Works Director will judge the severity of the maintenance and schedule the work accordingly. All debris and sediment collected in the inlets or at the outfalls is removed by the City's vactor truck. The materials are then disposed of by placing the material at the City Garage.

Lawn/Ground Care: Lawn and open spaces are maintained by the City's Parks and Recreation department. Operations to maintain lawn and open spaces include grass cutting, litter cleanup, mulching, weeding and tree removal, when required.

Municipal Building Maintenance: The municipal building requires regular maintenance that may contribute to storm water. The exterior of the building is cleaned by the Public Works Department. While performing this task, the inlets are blocked, and the water is diverted to a gravel and grass area to prevent the contaminants in the water from entering the MS4. The parking areas surrounding the municipal building could also

contribute to pollution entering the MS4 from leaking vehicles. The parking lot is observed frequently for spills. All spills are cleaned up immediately if found. Trash is also picked up immediately to prevent it from reaching the inlets in the parking lot. Inlets in close proximity to fueling stations or maintenance buildings have an inlet filter, or

insert, placed in them for containment of pollutants. The inlet filters are rated to collect sediment as well as petroleum products. The filters are inspected to ensure proper function and replaced when necessary.

Fueling: Located on municipal grounds is a fueling station for small gasoline powered equipment. City personnel utilize the fueling station for all City owned gas-powered hand implements and lawn tractors. All trucks and large equipment are fueled at a local service station where the City has an account. The fueling station is a critical area for contamination and extra care is taken to prevent any spills. The station has signs locating the spill kit, and emergency contacts if there should be a large spill. The spill kit includes all the necessary materials to properly clean up a small or medium sized spill. The protocol for spills is located in the City of Monessen Municipal Facilities/Operations Pollution Prevention and Good Housekeeping Program and included within the Water Quality Related Standard Operating Procedures. All municipal employees that use the fueling station are trained on the proper procedure of cleanup of spills and disposal of used materials.

Washing: Vehicles and equipment are washed, as needed, to keep the equipment in good working condition. All washing takes place in the garages, with drains that are connected to the sanitary sewer. If a piece of equipment needs to be washed outside, it is done in a gravel, grass, or permeable area and away from any inlets tied to the MS4. Additionally, when washing equipment, the soap is biodegradable, phosphate-free, detergents that are environmentally friendly. Whenever possible, City personnel will not use detergents and will clean equipment with water only. It is also common practice to limit the use of power washers, whenever possible.

Maintenance of Equipment: Vehicles and equipment are maintained in the garage and work is performed by City mechanic. All fluids, such as oil and antifreeze, are stored properly and safely. The drums and containers that hold the materials are all labeled and have secondary containments placed under them to catch any leaks. The secondary containment racks and trays are observed frequently to ensure that nothing is leaking. If there should be an unforeseen breach in the secondary containment, all

fluids would go into the floor drain that is connected to the sanitary sewer. The garage is inspected weekly by a Public Works representative or councilman with oversight of the department.

Leaf/Yard Pickup:

Monessen residents have the opportunity to compile their yard waste, at designated times of the year, and place at the end of their driveway for the City to collect and dispose of. The City then takes the waste to a neighboring township where it is ground up and recycled. The dates of the leaf and yard waste pickups are placed on the municipal website and also in the Monessen newsletter.

Objective: Require that municipal contractors and employees use appropriate control measures and water quality related standard operating procedures while performing their routine activities.

Measurable Goal: Develop a program with written Water Quality related Standard Operating Procedure handbook.

Necessary Documents: Operation and maintenance handbook

Responsibility Party: City Administrator and Public Works Department

Schedule: Ongoing program

Items to Report: Documentation of handbook and record of training

Method of Evaluation: N/A

BMP 3: Develop and implement an employee training program.

All personnel employed by the City of Monessen are required to receive MS4 training at least annually and sign off that they understand what was presented. The training will be held by either the City Engineer, the department heads, or the Public Works Superintendent. Every training held is documented through a sign in sheet that is placed in the MS4 file and attached to the Progress Report to the PADEP. Information on the sign in sheet to be filled out includes the date of the training, the names and titles of the attendees, the topics covered, and presenter's name. If the training has materials, such as a PowerPoint presentation, a copy of all training materials will be given to the attendees. Training may be held multiple times a year, but no less than once, and will contain different material each session. The material presented will be tailored to the group contribution to the MS4 program.

Objective: Develop and implement training program including handbook for standard operating procedures for daily work operations that are water quality related.

Measurable Goal: Documentation of handbook and record of training.

Necessary Documents: Training program handbook

Responsible Party: City Administrator and Public Works Department

Schedule: Complete by end of Permit Year 3

Items to Report: Documentation of handbook and record of training schedule.

Method of Evaluation: N/A

SECTION 3

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
STORMWATER MANAGEMENT ORDINANCE
ADOPTED SEPTEMBER 14, 2021

STORMWATER MANAGEMENT ORDINANCE

ORDINANCE NO. 1247

CITY OF MONESSEN

WESTMORELAND COUNTY. PENNSYLVANIA

Adopted at a Public Meeting Held On

September 14, 2021

ATTEST

Cheryl Gordon
City Clerk

CITY OF MONESSEN

Matt Shorraw
Mayor and President of Council

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City of Monessen

Stormwater Management Ordinance

City of Monessen

Stormwater Management Ordinance

ARTICLE I General Provisions

§101. ***Short Title***

This Ordinance shall be known and may be cited as the City of Monessen Stormwater Management Ordinance."

§102. ***Findings*** **- The City Council of the City of Monessen finds that:**

A. Stormwater runoff from lands modified by human activities threatens public health and safety by causing decreased infiltration of rainwater and increased runoff flows and velocities, which overtax the carrying capacity of existing streams and storm sewers, causes property damage and risk to public safety, and greatly increases the cost to the public to manage stormwater.

B. Inadequate planning and management of accelerated stormwater runoff resulting from land development and redevelopment throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream-beds and stream-banks thereby elevating sedimentation), destroying aquatic habitat and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals and pathogens. Groundwater resources are also impacted through loss of recharge.

C. The City of Monessen is located in the Monongahela River Watershed and as such will endeavor to cooperate with other municipalities located in the watershed(s) to address issues of stormwater management, water quality, pollution and flooding.

D. Non-stormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth in the City of Monessen.

E. Stormwater can be an important water resource by providing groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.

F. Public education on the control of pollution of stormwater is an essential component in successfully managing stormwater.

G. A comprehensive program of stormwater management, including reasonable regulation of land development and redevelopment causing loss of natural infiltration, is fundamental to the public health, safety, welfare, and the protection of the people of the City of Monessen and all the people of the Commonwealth, their resources, and the environment.

H. The use of open space conservation, green infrastructure, low impact development (LID), and riparian buffers are intended to address the root cause of water quality impairment by using systems and practices which use or mimic natural processes to: 1) infiltrate and recharge, 2) evapotranspire, and/or 3) harvest and use precipitation near where it falls to earth. Green infrastructure practices, LID, and riparian buffers contribute to the restoration or maintenance of pre-development hydrology.

I. Stormwater structures are considered vital infrastructure and can pose a significant hazard.

Outlets and waterways which carry stormwater shall be maintained free of obstructions to allow for non-restricted flow of stormwater to avoid impoundment of water.

J. Occupancy and modification of floodplains shall be avoided wherever there is a practicable alternative to reduce long and short-term adverse impacts in order to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

K. Federal and State regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their municipal separate storm sewer systems (MS4) under the National Pollutant Discharge Elimination System (NPDES). The City of Monessen is subject to MS4 requirements within its designated MS4 District. Refer to Appendix A.

L. The Westmoreland Conservation District (WCD) is a recognized regulatory agency with authority in the county and this municipality to regulate erosion and sediment controls and stormwater management related to land development activities. Because WCD's authority crosses municipal boundaries they are enabled to oversee environmental issues for the general benefit of all county residents.

M. The Westmoreland County Integrated Water Resources Plan (2018) addresses all water resources and provides a decision-making tool for development and redevelopment with respect to those resources including stormwater and its management. Refer to www.paiwrp.com and www.westmorelandstormwater.org.

§103. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within the City of Monessen and its watersheds by minimizing the harms and maximizing the benefits described in this Section of this Ordinance, through provisions designed to:

A. Manage stormwater runoff impacts at their source by regulating activities that cause problems, reduce runoff volumes and mimic natural hydrology.

B. Maintain existing flows and quality of streams and watercourses.

C. Prevent scour and erosion of streambanks and streambeds.

D. Utilize and preserve the existing natural drainage systems as much as possible.

E. Restore and preserve the natural and beneficial values served by streamside and waterbody floodplains.

F. Focus on infiltration of stormwater, to maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.

G. Promote stormwater runoff prevention and emphasize infiltration and evapotranspiration through the protection and conservation of natural resource systems and the use of non-structural BMPs and other creative methods of improving water quality and managing stormwater runoff.

H. Promote the use of green infrastructure in development and redevelopment where it can also improve stormwater management within the broader watershed in which the project is located.

I. Meet legal water quality requirements under state law, including regulations at 25 Pa.Code, Chapter 93.4a, to protect and maintain "existing uses" and maintain the level of water quality to support those uses in all streams, and to protect and maintain water quality in "special protection" streams.

J. Provide review procedures and performance standards for stormwater planning and management.
K. Provide for proper operations and maintenance of all permanent stormwater management BMPs that are implemented in the City of Monessen.
L. Provide a mechanism to identify controls necessary to meet the NPDES and MS4 permit requirements, and to encourage infrastructure improvements that lead to separation of storm sewer systems from sanitary sewer systems.
M. Assist in detecting and eliminating illicit stormwater discharges into the City of Monessen'sseparate storm sewer system.

§104. Statutory Authority

A. The City of Monessen is empowered to regulate land use activities that affect stormwater runoff by the authority of the Stormwater Management Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, and the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.
B. The City of Monessen is also empowered to regulate land use activities that affect stormwater runoff by the authority of Third Class City Code and the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

§105. Applicability

A. All regulated activities as defined by this ordinance are subject to regulation by this Ordinance.
B. This Ordinance applies to any land development or regulated earth disturbance activities within the City of Monessen, and all stormwater runoff entering into the City of Monessen's separate or combined storm sewer system from lands within the boundaries of the municipality.
C. Earth disturbance activities and associated stormwater management controls are also regulated under existing State law and implementing regulations. This Ordinance shall operate in coordination with those parallel requirements; the requirements of this Ordinance shall be no less restrictive in meeting the purposes of this Ordinance than State law.

§106. Repealer

Any other ordinance provision(s) or regulation of the municipality inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

§107. Severability

If any word, phrase, section, sentence, clause or part of this Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, invalidity or illegality by a court of competent jurisdiction, shall not affect or impair any of the remaining words, phrases, sections, sentences, clauses or parts of this Ordinance. It is hereby declared to be the intent of the City Council of the City of Monessen that this Ordinance would have been adopted had such unconstitutional, illegal or invalid word, phrase, section, sentence, clause or part thereof not been included herein.

§108. Compatibility with Other Requirements

A. Approvals issued and actions taken under this Ordinance do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.

B. Conflicting provisions in other municipality ordinances or regulations shall be construed to retain the requirements of this Ordinance addressing state water quality requirements.

§109. Erroneous Permit

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the City of Monessen purporting to validate such a violation.

§110. Prohibitions

Shall be consistent with PAG-13 NPDES General Permit for stormwater discharges from MS4 communities and as listed here.

A. **Prohibited discharges**

1. No person in the City of Monessen shall introduce, or cause to introduce, permit or allow stormwater discharges in the MS4 District into the municipality separate storm sewer system which are not composed entirely of stormwater, except as permitted by this Ordinance, or
    a. as provided in paragraph 2. below, or
    b. discharges as authorized under a State or Federal permit.
2. Permissible discharges, based on a finding by the municipality that the discharge(s) do not significantly contribute to pollution to surface waters of the Commonwealth, are recommended to be discharged safely to a vegetated area or infiltration BMP, but can also be discharged to a storm sewer system, include but are not limited to:
    a. Discharges from firefighting activities.
    b. Potable water sources including dechlorinated water line and fire hydrant flushings.
    c. Non-contaminated irrigation drainage from agricultural practices.
    d. Routine external building washdown (which does not use detergents or other compounds).
    e. Non-contaminated air conditioning condensate.
    f. Water from individual residential car, boat or other residential vehicle washing that does not use detergents or other compounds.
    g. Springs.
    h. Non-contaminated water from basement or crawl space sump pumps.
    i. Non-contaminated water from foundation or from footing drains.
    j. Flows from riparian habitats and wetlands.
    k. Lawn watering.

l. Pavement wash-waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used.
m. Splash pad (recreational spray patio with no standing water) discharges.
n. Non-contaminated groundwater.

3. If the municipality determines that any of the discharges identified in paragraph 2 above significantly contributes to pollution of waters of the Commonwealth, or is so notified by DEP, the municipality will notify the landowner and/or the responsible person to cease the discharge.
4. Upon notice provided by the municipality under paragraph 3. above, the discharger will have a reasonable period not to exceeda 30 days, as determined by the municipality, to cease the discharge consistent with the degree of pollution caused by the discharge.
5. Nothing in this Section shall affect, limit or alleviate a discharger's responsibilities under State or Federal law.

B. **Prohibited connections**

The following sources, activities or connections are prohibited, except as provided in subsection A. 1. and 2. above:

1. Any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge including but not limited to, sewage, process wastewater and wash water, to enter the separate storm sewer system, and any connections to the storm drain system from indoor drains and sinks.
2. Any drain or conveyance connected from a commercial, industrial or other non-residential land use to the separate storm sewer system which has not been documented in plans, maps, or equivalent records, and approved by the City of Monessen.
3. Drains carrying non-contaminated stormwater or groundwater shall not be connected to or discharge to any public or private separate sanitary sewer system or facility.

C. **Prohibited activities**

1. A landowner may not alter the natural flow of surface water on his property by concentrating it in an artificial channel and discharging it upon lower land of his neighbor even though no more water is thereby collected than would naturally have flowed upon the neighbor's land in a diffused [shallow broad path or sheet flow] condition.
2. A landowner may not alter nor neglect maintenance of any BMPs, facilities or structures that were installed under the ordinance without written approval of the municipality.

D. **Roof Drains and Sump Pumps**

1. Roof drains and sump pumps shall discharge to infiltration or vegetative BMPs wherever feasible.
2. Roof drains and sump pumps shall not discharge into a combination sewer wherever feasible.
3. Roof drains and sump pumps shall not discharge into a separate sanitary sewer.

§111. Liability Disclaimer

A. Neither the granting of any approval under the stormwater management provisions of this Ordinance, nor the compliance with the provisions of this Ordinance, or with any condition imposed by any public body of the City of Monessen or by a City of Monessen official, employee or consultant hereunder, shall relieve any person from any responsibility for damage to person or property resulting therefrom, or as otherwise imposed by law, nor impose any liability upon the City for damages to persons or property.

B. The granting of a permit which includes any stormwater management does not constitute a representation, guarantee or warranty of any kind by the City or WCD, or by an official or employee thereof, of the practicability or safety of any structure, use or other plan proposed and shall create no liability upon or cause of action against such public body, official or employee for any damage that may result pursuant thereto.

ARTICLE II Definitions

§201. Interpretations and word usage

For the purposes of this Ordinance, the terms and words used herein shall be interpreted as follows:

A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

B. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.

C. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive.

§202. Definition of terms

Act 167– The Stormwater Management Act, Act of October 4, 1978, P. L. 864, No. 167, as amended by the Act of May 24, 1984, No. 63, 32 P.S. §§680.1 *et seq.* The City of Monessen is empowered to regulate land use activities that affect runoff and surface and groundwater quality and quantity by the authority of the Act, the "Storm Water Management Act."

Accelerated erosion – The removal of the surface of the land through the combined action of human activities and the natural processes at a rate greater than would occur because of the natural process alone.

Agricultural Activity – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops and raising livestock including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of Conservation Practices. Except for high tunnels that are exempt pursuant to the provisions of Act 15 of 2018, construction of new buildings or impervious areas is not considered an agricultural activity.

Applicant – A landowner, developer or other person who has filed an application for development or for approval to engage in any regulated earth disturbance activity at a project site in the City of Monessen.

Animal Concentration (heavy use) Areas – A barnyard, chicken coop, feedlot, loafing area, exercise lots, or other similar animal confinement areas that will not maintain a growing crop, or where deposited manure nitrogen is in excess of crop needs, but excluding areas managed as pastures or other cropland, and pasture access ways, if they do not cause direct flow of nutrients to surface water or groundwater.

BMP (best management practice) – Activities, facilities, designs, measures or procedures used to manage stormwater impacts from regulated development activities, to meet State water quality requirements, to promote groundwater recharge and to otherwise meet the purposes of this Ordinance. BMPs include, but are not limited to, infiltration, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, forested buffers, sand filters and detention basins.

Channel – A perceptible natural or artificial waterway which periodically or continuously contains moving water or which forms a connecting link between two bodies of water. It has a defined bed and banks which confine the water.

Chapter 102 – Title 25 Pa Code Chapter 102 Erosion and Sediment~~ation~~ Control.

Chapter 105 – Title 25 Pa Code Chapter 105 Dam Safety and Waterway Management.

City – The City of Monessen, Westmoreland County, Pennsylvania.

CS4 (combined sanitary storm sewer system) – A sewer system designed to serve as both sanitary sewer and storm sewer.

CS4 District – The area of the city not within the Grand Boulevard Sewer Shed that has a combined sanitary storm sewer system as indicated in Appendix A.

Commonwealth – The Commonwealth of Pennsylvania.

CSO, Combined sewer overflow – An intermittent flow or other untreated discharge from a municipal combined sewer system (including domestic, industrial and commercial wastewater and stormwater) which results from a flow in excess of the dry weather carrying capacity of the system.

Conservation District – The Westmoreland Conservation District (WCD), as defined in Section 3(c) of the Conservation District Law (3 P. S. § 851(c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

Conservation Plan – A plan written by an NRCS or SCS certified planner that identifies Conservation Practices and includes site specific BMPs for agricultural plowing or tilling activities and Animal Concentration Areas.

Conservation Practices – Practices installed on agricultural lands to improve farmland, soil and/or water quality which have been identified in a current Conservation Plan.

Conveyance –

(a) The transportation of runoff via a stormwater facility.
(b) The ability of a pipe, culvert, swale or similar facility to carry the peak flow from the design storm.

Culvert – A closed conduit for the free passage of surface drainage under a highway, railroad, canal or other embankment.

DEP – The Pennsylvania Department of Environmental Protection.

Demonstrated equivalency – A stormwater management project on an alternative site(s) within the same watershed as the proposed development that will provide equal or better achievement of the purpose of the Ordinance and will not substantially or permanently impair the appropriate use

or development of adjacent property. Examples include streambank stabilization, creation or enhancement of riparian buffers, removal of existing impervious surfaces and establishment of 'green' easements, installation of stormwater management and water quality facilities, etc.

Design criteria –

(a) Engineering guidelines that define the parameters for design and construction.

(b) Guidelines for hydrologic and hydraulic design and construction of the BMPs.

Design storm – See "storm frequency."

Detention – The slowing, dampening or attenuating of runoff flows entering the natural drainage pattern or storm drainage system by temporarily holding water on a surface area in a detention basin or within the drainage system.

Detention basin – A pond, basin, reservoir or underground system constructed to impound or retard surface runoff temporarily.

Developer – A person or entity that seeks to undertake or undertakes the activities associated with changes in land use or seeks to undertake or undertakes any regulated earth disturbance activities at a project site in the City of Monessen. The term "developer" includes, but is not limited to, the term subdivider, owner and builder, even though the person involved in successive stages of a project may change or vary.

Development – An "earth disturbance activity," as herein defined and any activity, construction, alteration, change in land use or practice that affects stormwater runoff characteristics. The term also includes redevelopment.

Development site – The specific tract of land where any development or earth disturbance activities in the City of Monessen are planned, conducted, undertaken or maintained.

Discharge – The flow or rate of flow from a canal, conduit, channel or other hydraulic structure.

Disturbed Area – A land area where an earth disturbance activity is occurring or has occurred.

Drainage – In general, the removal of surface water from a given area commonly applied to surface water and ground water.

Drainage area – Any of the following activities:

(a) The area of a drainage basin or watershed, expressed in acres, square miles or other unit of area (also called "catchment area," "watershed," "river basin").

(b) The area served by a sewer system receiving storm and surface water, or by a watercourse.

Earth disturbance activity – A construction or other human activity which disturbs the surface of the land including, but not limited to, clearing and grubbing, grading, excavations, embankments, road maintenance, land development, building construction, oil and gas activities, well drilling,

mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Encroachment – Any structure or activity which in any manner changes, expands or diminishes, the course, current or cross-section of any watercourse, floodway or body of water.

Erosion – The process by which land, including channels, is worn away by water, wind, or chemical action.

Erosion control – The application of measures to reduce erosion of land surfaces.

E&S Permit – A permit required for earth disturbance activities where the earth disturbance is associated with harvesting, road maintenance activities, oil and gas activities, and any other such activities.

Erosion and sediment control plan (E&S) – A plan for a project site which identifies BMPs to minimize accelerated erosion and sedimentation of land.

Existing Condition – The dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA – Federal Emergency Management Agency.

Floodplain – Any land area susceptible to inundation by water from any natural source or delineated by applicable FEMA maps and studies as being a special flood hazard area. Also includes areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by DEP).

Floodway – The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed--absent evidence to the contrary--that the floodway extends 50 feet away from the top of the bank of the stream.

Forest Management/Timber Operations – Planning and activities necessary for the management of forestland. These include conducting a timber inventory, preparation of forest management plans, silvi-cultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation, and reforestation.

Grand Boulevard Sewer Shed - The area of the City that has a separate sanitary sewer and is part of the municipal separate storm sewer system (MS4). It is identified as the MS4 District. Refer to Appendix A.

Green Infrastructure – Systems and practices that use or mimic natural processes to infiltrate, evapotranspire, or reuse stormwater on the site where it is generated.

Ground cover – Materials and/or vegetation covering the ground surface.

Ground water – Subsurface water occupying the saturation zone, from which wells and springs are fed.

Groundwater recharge – Replenishment of existing natural underground water supplies.

High Tunnel – A structure which meets the following:

(a) Is used for the production, processing, keeping, storing, sale or shelter of an agricultural commodity as defined in section 2 of the act of December 19, 1974 (P.L.973, No.319), known as the Pennsylvania Farmland and Forestland Assessment Act of 1974, or for the storage of agricultural equipment and supplies.

(b) Is constructed consistent with all of the following:
   i. Has metal, wood or plastic frame
   ii. When covered, has plastic, woven textile or other flexible covering
   iii. Has a floor made of soil, crushed stone, matting, pavers or a floating concrete slab

Hot spots - Areas where land use or activities generate highly contaminated runoff, with concentrations of pollutants that are higher than those typically found in stormwater (e.g., vehicle salvage yards and recycling facilities, vehicle fueling stations, fleet storage areas, vehicle equipment and cleaning facilities, vehicle service and maintenance facilities, and certain industrial/commercial activity areas).

Hydrologic Soil Group (HSG) – Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less permeable as the HSG varies from A to D (NRCS1,2).

Impervious surface – A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to: roofs, additional indoor living spaces, patios, garages, storage sheds, and similar structures; and any streets or sidewalks. Decks, parking areas, gravel areas, and driveway areas are counted as impervious areas if they directly prevent infiltration.

Infiltration – Any of the following activities:

(a) The flow or movement of water through the interstices or pores of a soil or other porous medium.

(b) The absorption of liquid by the soil.

Land development – Any of the following activities:

(a) The improvement of one lot or two or more contiguous lots, tracts or parcels of land for any purpose involving:
    i A group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single residential/nonresidential building on a lot or lots regardless of the number of occupants or tenure.
    ii The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.

(b) A subdivision of land.

Land disturbance – Any activity involving the changing, grading, transportation, fill and any other activity which causes land to be exposed to the danger of erosion.

Low Impact Development (LID) – Site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site.

Maintenance – The upkeep necessary for efficient operation of physical properties.

MS4 (municipal separate storm sewer system) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(a) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by 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.
(b) Designed or used for collecting or conveying stormwater;
(c) Which is not a combined sewer; and
(d) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

MS4 District – The area of the City within the Grand Boulevard Sewer shed with a separate storm sewer system and a separate sanitary sewer system. Refer to Appendix A.

Municipalities Planning Code – Act 247 of 1968, as amended by Act 170 of 1988, 53 P.S. §10101 *et seq.*

Municipality –City of Monessen, Westmoreland County, Pennsylvania.

Native Vegetation – Plant species that have historically grown in Pennsylvania and are not invasive species, controlled plants or noxious weeds as defined by PA DCNR, or PA Department of Agriculture.

Natural stormwater runoff regime – A watershed where natural surface configurations, runoff characteristics and defined drainage conveyances have attained the conditions of equilibrium.

NPDES – National Pollutant Discharge Elimination System, the Federal government's system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

NRCS – Natural Resources Conservation Service (previously Soil Conservation Service).

Outfall – "Point source" as described in 40 CFR §122.2 at the point where the City of Monessen storm sewer system discharges to surface waters of the Commonwealth. Also, the point, location or structure where drainage discharges from a sewer, drain or other conduit as well as the conduit leading to the ultimate discharge point.

Outlet control structure – The means of controlling the relationship between the head water elevation and the discharge, placed at the outlet or downstream end of any structure through which water may flow.

Overland flooding – Flooding that occurs for a variety of reasons all stemming from excessive stormwater runoff including too much rain in too little time, added impervious development, change in land use, malfunction or clogging of existing stormwater systems.

Peak discharge – The maximum rate of stormwater runoff from a specific storm event.

Peak flow – Maximum flow.

Pennsylvania DEP – Pennsylvania Department of Environmental Protection.

Perimeter BMPs – BMPs place or constructed along the perimeter of an earth disturbance area, or to capture and treat stormwater runoff prior to leaving the site.

Permanent Stabilization – Long term protection of soil and water resources from accelerated erosion.

Pervious Area – Any material or surface that allows water to pass through at a rate equal to or greater than natural ground cover.

Performance standard – A standard which establishes an end result or outcome which is to be achieved but does not prescribe specific means for achieving it.

Person – An individual, partnership, public or private association or corporation, firm, trust, estate, municipality, governmental unit, public utility or any other legal entity whatsoever which is recognized by law as the subject of rights and duties. Whenever used in any section prescribing

or imposing a penalty, the term "person" shall include the members of a partnership, the officers, members, servants and agents of an association, officers, agents and servants of a corporation, and the officers of a municipality or county, but shall exclude any department, board, bureau or agency of the Commonwealth.

Point source – Any discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which stormwater is or may be discharged, as defined in State regulations at 25 Pa.Code §92.1.

Pollutant – Any contaminant or other alteration of the physical, chemical or biological integrity of surface water which causes or has the potential to cause pollution as defined in Section 1 of the Clean Water Law.

Pollutant Reduction Plan (PRP) – A plan required by the MS4 permit to calculate existing pollutants of concern and the minimum reduction in loading from stormwater discharges, and to select the best management practices to achieve the minimum reductions.

Project site – The specific area of land where any development or regulated earth disturbance activities in the City of Monessen are planned, conducted, undertaken or maintained.

Qualified Professional – Any person licensed by the Pennsylvania Department of State or otherwise qualified under Pennsylvania law to perform the work required by this Ordinance.

Record drawings – Drawings showing the stormwater management system of a site as built, created after the completion of construction and intended for use as a permanent record of the stormwater management system.

Redevelopment – Earth disturbance activities on land which has previously been disturbed or developed.

Regulated development activity – Any earth disturbance activities or any activities that involve the change of land cover, alteration or development of land in a manner that may affect stormwater runoff as listed in the Regulated Development Activity table. This includes earth disturbance on any portion of, part, or during any stage of, a larger common plan of development. With regard to road maintenance activities the term only includes activities involving 1 acre or more or earth disturbance. Refer to the Regulated Development Activity Table in Article III of this ordinance.

Release Rate – The percentage of existing conditions peak rate of runoff from a site or subarea to which the proposed conditions peak rate of runoff must be reduced to protect downstream areas.

Release rate percentage – The watershed factor determined by comparing the maximum rate of runoff from a subbasin to the contributing rate of runoff to the watershed peak rate at specific points of interest.

Resource extraction – Any activity that involves withdrawing materials from the natural environment.

Retention basin – A pond, basin, usually enclosed by artificial dikes, that is used to retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate.

Retention Volume/Removed Runoff – The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or immediately after a storm event.

Return period – The average interval in years over which an event of a given magnitude can be expected to recur.

Riparian Buffer – A permanent area of native vegetation including herbaceous material, shrubs and/or trees located adjacent to streams, lakes, ponds and wetlands.

Road maintenance – Earth disturbance activities within the existing road cross-section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches and other similar activities.

Runoff – That part of precipitation which flows over the land.

Runoff characteristics – The surface components of any watershed which affect the rate, amount and direction of stormwater runoff. These may include, but are not limited to, vegetation, soils, slopes and manmade landscape alterations.

SALDO – Subdivision and Land Development Ordinance.

Sediment – Mineral or organic solid material that is being transported or has been moved from its site of origin by air, water or ice and has come to rest.

Sedimentation – The process by which mineral or organic matter is accumulated or deposited by moving water, wind or gravity.

Separate sanitary sewer system – A sewer collection system designed to serve exclusively as a sanitary sewer.

Separate storm sewer system – Aconveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) primarily used for collecting and conveying stormwater runoff. Refer to MS4.

Small project – Regulated development activities that, measured on a cumulative basis from 5 years prior to the application, create additional impervious areas of 501 to 3,000 square feet or involve earth disturbance activity an area of 2,501 to 5,000 square feet and do not involve the alteration of stormwater facilities or water courses.

Stabilization – The proper placing, grading, constructing, reinforcing, lining and covering of soil, rock or earth to ensure resistance to erosion, sliding or movement.

State water quality requirements – As defined under State regulations– protection of designated and existing uses (See 25 Pa.Code, Chapters 93 and 96)–including:

(a) Each stream segment in Pennsylvania has a "designated use," such as "cold water fishery" or "potable water supply," which are listed in 25 Pa.Code, Chapter 93. These uses must be protected and maintained, under State regulations.

(b) "Existing uses" are those attained as of November 1975, regardless whether they have been designated in 25 Pa.Code, Chapter 93. Regulated earth disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in special protection streams.

(c) Water quality involves the chemical, biological and physical characteristics of surface water bodies. After regulated earth disturbance activities are complete, these characteristics can be impacted by addition of pollutants such as sediment, and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect the stream bank, streambed and structural integrity of the waterway, to prevent these impacts.

Storage facility – Any surface or sub-surface facility that stores stormwater runoff, see "detention basin" and "retention basin."

Storm frequency – The average interval in years over which a storm event of a given precipitation volume can be expected to occur. The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24 hours) used in the design and evaluation of stormwater management systems. Also see Return Period.

Storm sewer – A sewer that carries intercepted surface runoff, street water and other drainage but excludes domestic sewage and industrial waste.

Stormwater – Runoff from the surface of the land resulting from precipitation; snowmelt or ice melt; and drainage.

Stormwater collection systems – Natural or manmade structures that collect and transport stormwater through or from a drainage area to the point of final outlet including, but not limited to, any of the following: conduits and appurtenant features, canals, channels, ditches, streams, culverts, streets and pumping stations.

Stormwater management facility – A constructed measure for detention, retention, infiltration, and water quality treatment of stormwater runoff.

Stormwater management plan – The plan for managing stormwater runoff rate, volume and water quality as required by the Stormwater Management Act, 32 P.S. §680.1 *et seq.*

Stormwater Management Performance District – An area designated by the Watershed Stormwater Performance District Map which includes standards for stormwater rate, volume and water quality. Refer to Appendix A.

Subdivision – As defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, as amended.

Swale – A low-lying stretch of land which gathers or carries surface water runoff.

Top of Streambank – First substantial break in slope between the edge of the streambed and surrounding terrain. It can be either natural or man-made lying parallel to the watercourse.

USDA – United States Department of Agriculture.

Watercourse – A channel or conveyance of surface water, such as a run, stream or creek, having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Waters of the Commonwealth – Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watershed – The entire region or area drained by a river or other body of water whether natural or artificial. A "designated watershed" is an area delineated by the Pennsylvania DEP and approved by the Environmental Quality Board for which Counties are required to develop watershed stormwater management plans.

Watershed stormwater management plan – The plan for managing stormwater runoff throughout a designated watershed as required by the Pennsylvania Stormwater Management Act (Act 167), 32 P.S. §680.1 *et seq.*

Wetland – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

ARTICLE III Stormwater Management Performance Standards.

§301. Stormwater Management Performance Districts.

The City of Monessen is located in the Monongahela River Watershed, which is not included in a Stormwater Management Performance District As recommended by the Westmoreland Conservation District for areas not covered by a Stormwater Performance District, the release rate shall be 80% of the pre-development peak flow as set by the City of Monessen. For more information refer to www.westmorelandstormwater.org.

§302. General Requirements.

A. Preparation and implementation of a stormwater management site plan is required for all regulated activities unless preparation of a SWM site plan is specifically exempted.
B. Projects that propose greater than 1 acre of earth disturbance are subject to NPDES Permit requirements and will require a Stormwater Management Plan.
C. No regulated activities, unless exempted, shall commence until the municipality issues written approval of an SWM Plan, which demonstrates compliance with the requirements of this Ordinance.
D. Regulated Development Activities shall be as follows:

[REGULATED DEVELOPMENT ACTIVITY TABLE]

SWM Plan Requirement	**New Impervious Area for New and Redevelopment**	**Disturbed Area***	**Next Steps**
Exempt	0	Less than 1 acre	Comply with **Exemption** section of this ordinance
No-Harm	500 square feet or less	2,500 square feet or less	Comply with **No-Harm** section of this ordinance
Waiver / Modification / Demonstrated Equivalency	Less than 1 acre, subject to municipal approval	Less than 1 acre	Comply with **Waiver / Modification / Demonstrated Equivalency** section of this ordinance
Small Project (per definition), refer to Appendix C	501 square feet to 3,000 square feet	2,501 to 5,000 square feet	Submit **Small Project Site Plan** complete with all attachments
Stormwater Management Plan meeting the Ordinance requirements	Greater than 3,000 square feet	Greater than 5,000 square feet	Consult a qualified professional

*The above Table is only applicable for new development or redevelopment projects with earth disturbance less than 1 acre and that have not had cumulative impacts, within 5 years preceding the permit application date, that are in excess of the square foot limits.

§303. Exemption from performance standards.

A. The following regulated activities are specifically **exempt** from the Stormwater Management Plan preparation and submission requirements set forth in this Ordinance:
   1. Agricultural activity limited to plowing or tilling activities, for animal concentrated (heavy) use areas provided the activities are performed according to the requirements of Chapter 102, or Conservation Practices being installed as part of the implementation of a Conservation Plan written by an NRCS or SCS-certified planner. This exemption does not include any other type of earth disturbance subject to NPDES permit requirements such as earth disturbance equal to or greater than one (1) acre.
   2. A high tunnel, if proof is provided that the high tunnel is exempt pursuant to the provisions of Act 15 of 2018. Such an exemption does not exempt high tunnels from other requirements applicable under Federal, State or municipal laws.
   3. Forest management and timber operations provided the activities are performed according to the requirements of Chapter 102.
   4. Resource extraction activities provided they are done in accordance with applicable PA DEP regulations.
   5. Roadway resurfacing and maintenance projects, which do not increase impervious area, and underground infrastructure projects are exempt from the provisions of this ordinance, provided the activities meet the requirements of all other municipal, state and federal requirements,
   6. Domestic landscaping and/or vegetable gardening.
   7. Voluntary Green Infrastructure (GI) or the retrofit of stormwater management infrastructure as conversion to green infrastructure BMPs to correct existing problems, that are solely intended to better manage runoff from existing development, are not part of new development or redevelopment, and that do not fall under the requirements of this or other development ordinances.

B. The City of Monessen may deny or revoke any exemption pursuant to this Section at any time for any project that the City of Monessen believes may pose a threat to public health, safety, property or the environment.

§304. No-Harm Option]

Applicants may request approval of a 'no-harm option' regarding stormwater management for their project. 'No-harm option' requests must meet the following criteria deemed appropriate by the City of Monessen *and in compliance with all Commonwealth laws and regulations*:

A. Project located near or adjacent to significantly larger body of water.
B. Project able to discharge directly into existing flood control feature.

C. Project of a small size 500 square feet or less of new impervious surface or 2,500 square feet or less of land use changes. Refer to the Regulated Development Activity Table in Article III this ordinance.
D. Project will generate less than 0.5 cubic feet per second for the ten-year storm peak rate increase as compared to pre-development peak rate.
E. Project is not part of a larger development being 'piecemealed' in order to avoid stormwater management regulations.
F. Project is not part of a larger development which has grown 'piecemeal' over the past five years without SWM.
G. Project is a small percentage <5% of a much larger site and is incidental to the much larger site
H. Project is not located in a neighborhood, watershed, or location where known stormwater problems exist, such as overland flooding like flooding of structures or roadways.
I. Project does not discharge to a combined sewer.
J. Project will not degrade water quality of the receiving stream. Refer to the Westmoreland County Integrated Water Resources Plan www.westmorelandstormwater.org for maps of impaired streams to determine if the project area is not within an impaired stream corridor or provide documentation that further degradation will not occur.

To qualify for the 'no-harm' option, applicant may, at the request of the municipality, submit calculations, drawings, and details showing that the project meets the above criteria. Projects approved for the 'no-harm' option may be exempted from constructing all or some of the usual stormwater management practices regularly required for similar projects. To be approved, no-harm requests must be reviewed and approved by both the City Engineer and by the WCD, but final approval rests with the City of Monessen.

§305. Waivers / Modifications / Demonstrated Equivalency

A. If the City of Monessen, in conjunction with the City Engineer, WCD, or DEP as applicable, determines that any requirement under this Ordinance cannot be achieved for a particular regulated activity, the City may, after an evaluation of alternatives, approve measures other than those in this Ordinance, subject to this Section paragraphs B, C and D *and in compliance with all Commonwealth laws and regulations*. The request for a waiver, modification, or demonstrated equivalency shall originate with the Landowner, shall be in writing, include a study of downstream effects, and accompany the Stormwater Management Plan submission to the City. The request shall provide the facts on which the request is based, the provision(s) of the Ordinance involved and the proposed modification or demonstrated equivalency. The City Engineer and WCD shall review the request to determine if it meets the requirements of the Ordinance including this Section, paragraphs B, C and D. If acceptable to the City and WCD, and the regulated stormwater activity involving earth disturbance is less than one (1) acre, the City may grant the waiver or modification. If the regulated stormwater activity involving earth disturbance is equal to or greater than one acre, the plan will be subject to the NPDES requirements of DEP.

B. Waivers, modifications, or demonstrated equivalency of the requirements of this Ordinance may be approved by the City if enforcement will exact undue hardship because of unique physical circumstances or pre-existing site conditions peculiar to the land in question,

provided that the modifications or demonstrated equivalency will not be contrary or detrimental to the public interest and shall achieve the intended outcome, and that the purpose of the Ordinance is preserved. Hardship must be due to such unique physical circumstances or pre-existing site conditions and not the circumstances or conditions generally created by the provisions of the Stormwater Management Ordinance; and there is no possibility that the property can be developed in strict conformity with the provisions of the Stormwater Management Ordinance. Cost or financial burden shall not be considered a hardship. Hardship cannot have been created by the landowner or developer. Modification or demonstrated equivalency shall not substantially or permanently impair the appropriate use or development of adjacent property(s) not under the Landowner's control. Modification or demonstrated equivalency may be considered if an alternative standard or approach will provide equal or better achievement of the purpose of the Ordinance.

C. No waiver, modification or demonstrated equivalency of any regulated stormwater activity involving earth disturbance greater than or equal to one (1) acre may be granted by the City unless that action is approved in advance by the Department of Environmental Protection (DEP) or the Westmoreland Conservation District (WCD).

D. Applicants may request approval of a demonstrated equivalent stormwater activity for their project in lieu of performing traditional stormwater management. Demonstrated equivalent stormwater activity requests will be evaluated by the City Engineer and the WCD on a case-by-case basis. Prior approval of a demonstrated equivalent stormwater activity on a site does not set a precedent for future approval of the same or other alternative activities on any site. The approval of a demonstrated equivalent stormwater activity does not excuse the applicant from following standard E&S and SWM practices as applicable on the original site.
   1. Demonstrated equivalent stormwater activities shall only be approved when the following criteria are met:
      a) Traditional stormwater management activities on the site are precluded by a particular site limitation, such as contaminated soil, steep slopes, existing buildings/infrastructure, combined sewer;
      b) Construction of traditional stormwater management activities on the site would require extra permits or lead to excessive permitting activities and delays;
      c) The site in question does not already have a stormwater management problem; and
      d) The site in question is not already contributing to water quality problems in the receiving stream.
   2. Approvable demonstrated equivalent stormwater activities may include the following:
      a) Restoration of an existing degraded wetland, stream channel, floodplain, or riparian buffer, including daylighting of a stream.
      b) Restoration, retrofit or upgrade an existing stormwater management feature (inadequate detention pond, for example).

c) Creation of new stormwater management features, especially green infrastructure, for a previously unmanaged site
d) Provide a water-based benefit to the public other than stormwater management (for example, extend a public sewer to an area not already served).
e) Treatment of abandoned mine drainage.

3. The proposal for demonstrated equivalency shall be accompanied by documentation or methodology quantifying the equivalency of the proposed project to what would have been originally required. Acceptable documentation or methodology may include use of the Worksheets and Checklist found in PA DEP NPDES permit application, Appendix E or approved method showing the proposed equivalency:
   a) Controls approximately the same amount of runoff volume as what would originally have been proposed
   b) Improves approximately the same amount of runoff quality as would have been originally proposed
   c) Is located within an impaired watershed or stream segment which will benefit from the proposed project. Impairment may include stream impairment, reduced stream buffer, and pollutant loading. Refer to the Westmoreland County Integrated Water Resources Plan at website www.westmorelandstormwater.org.
4. The demonstrated equivalent stormwater activity shall:
   a) Be constructed concurrently with the project for which it is being applied;
   b) Be constructed according to plans approved by the municipality and the WCDincluding any erosion control and stormwater management practices as applicable;
   c) Obtain all necessary permits;
   d) Be located on land owned by or controlled by the applicant or by a cooperating public or private entity(s) (school, church, club, municipality, etc.);
   e) Be protected by a perpetual easement or deed restriction, or landowner agreement;
   f) Be located in the same general watershed as the project for which it is being applied; and
   g) Have an Operation and Maintenance Plan (O&M) specifying who is responsible for what tasks.

§306. Small Project

A. When a regulated development activity (refer to Table in Section 302 of this ordinance) creates impervious area between 501 and 3,000 square feet, or total earth disturbance of 2,501 to 5,000 square feet, the stormwater management requirements are as follows. Refer also to Appendix C.
B. For new impervious surfaces, the first 2 inches of runoff shall be permanently removed from the runoff flow and shall not be released to waters of the Commonwealth. Removal options include reuse, evaporation, transpiration and infiltration.
C. Facilities, to the greatest extent possible and subject to City approval, shall be designed to drain the permanently removed runoff volume in a period no greater than 72 hours. Runoff

volumes in excess of 2 inches shall be safely conveyed to a stable vegetated area, natural watercourse, the curb or gutter line of roadway or existing storm collection/conveyance/control system as applicable.

D. This method is exempt from the requirements of Section 402 of this ordinance.

E. A Small Project Stormwater Management Plan must be submitted to the City of Monessen and the WCD and shall consist of the following items and related support material needed to determine compliance with Sections 307 to 311 of this ordinance. The applicant can also use protocols listed in Appendix C.

1. Narrative: General description of proposed stormwater management techniques, including calculations, assumptions and criteria used in the design of the stormwater management facilities and BMPs, and construction specifications of the materials to be used for stormwater management facilities and BMPs.
2. Stormwater Management Plan: Showing locations of all stormwater management facilities and BMPs, especially green infrastructure, limits of disturbance, including the type and amount of proposed impervious area, structures, roads, paved areas and buildings;
3. Small Project Stormwater Management Worksheet for each BMP proposed.
4. Signed agreement page for operation and maintenance of stormwater facilities and BMPs (Refer to Appendix C); and
5. Erosion and Sediment Control Plan including all reviews and letters of adequacy from the Conservation District.

§307. General Standards.

A. Proposed land development must consider avoiding, minimizing, and mitigating impacts to the site that may increase stormwater runoff from the proposed project. Applied sequentially, these three low impact development strategies should be an overall guide as a project is planned and carried out.

B. The Westmoreland County Integrated Water Resources Plan provides an online decision-making tool to assist developers, designers, property owners in addressing all water resources during development and redevelopment and should be consulted. Refer to website www.paiwrp.com and website www.westmorelandstormwater.org.

C. The following provisions shall be considered the overriding performance standards against which all proposed stormwater control measures shall be evaluated and shall apply throughout the City of Monessen.

1. Any landowner and any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety or other property. For alteration or development taking place in stages, the cumulative development must be used in determining conformance with this ordinance. Such measures shall include such actions as are required:
    a. To assure that the maximum rate of stormwater runoff is no greater after development than prior to development activities for the 2-, 10-, 50-, and 100-year storms. Rainfall data shall be obtained from NOAA Atlas 14, the E&S manual, Table 5.1 for NRCS calculations, and PennDOT Publication 584,

Chapter 7, Appendix A for Rational Method calculations, or other source approved by the municipality.

b. To manage the water quality, rate and volume and direction of resulting stormwater runoff in a manner which otherwise adequately protects health and property from possible injury.
c. To notify adjacent property owners or owners of affected properties of any alteration or increase of stormwater flows.

2. Runoff treatment BMPs must be employed where necessary to ensure the water quality, rate and volume requirements are met.
3. Volume control BMPs shall be used to maintain existing hydrologic conditions for small storm events by promoting groundwater recharge and/or evapotranspiration. For the 2-year storm event, runoff volume controls shall be implemented using the PA DEP Stormwater BMP Manual 2006. For all other storm events use an approved method such as those listed in the following chart:

Acceptable Computation Methodologies for Stormwater Management Plans:

METHOD:	**DEVELOPED BY:**	**APPLICABILITY:**
Win TR-20 (or commercial computer package based on TR-20)	USDA NRCS	Applicable where use of full hydrologic computer model is desirable or necessary.
Win TR-55 (or commercial computer package based on TR-55 ie. VT/PSUHM	USDA NRCS	Applicable for land development plans within limitations described in TR-55
HEC-1, HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
PennDOT 584 (based on rational method)	PennDOT	Applicable under standards established by PennDOT
SWMM	EPA	Applicable in urban and suburban areas subject to limits established by EPA
PA DEP BMP Manual 2006	PA DEP	Applicable under standards established by PA DEP
Other Methods	Varies	Submit the methodology to the City for review and approval.

D. The project plan shall specify permanent stormwater BMPs to be implemented, operated and maintained to meet legal water quality, rate and volume requirements. If methods other than low impact development (LID) and green infrastructure methods are proposed to achieve the volume and rate controls required under this ordinance, the SWM Plan must include a detailed justification demonstrating that the use of LID and green infrastructure is not practicable.

E. To protect and maintain water quality, additional stormwater runoff created by the development project must be captured, stored and treated. In addition, post construction stormwater infiltration of runoff must replicate preconstruction infiltration of runoff to the maximum extent possible with the exception of **hot spots**. As a minimum, this shall be a volume of additional runoff generated by a 2-year, 24-hour storm. Preferred BMP's for a **hot spot** include storm inlet filters, proprietary stormwater quality devices, underground detention tanks, detention ponds with forebays, tree planting, green roof. Permeable pavement, infiltration BMP's, and rain gardens are not recommended for hotspots.

F. In addition to the provisions set forth in paragraphs A. through C., inclusive, as set forth above, all regulated development activities within the City of Monessen shall be designed, implemented, operated and maintained to meet the purposes of this Ordinance, through these two elements:

1. Erosion and sediment control during the earth disturbance activities (e.g., during construction).
2. Water quality, rate and volume protection measures after completion of earth disturbance activities (e.g., post-construction stormwater management), including operations and maintenance.

G. No regulated development activities within the City of Monessen shall commence until the requirements of this Ordinance are met.

H. All best management practices (BMPs) used to meet the requirements of this Ordinance shall conform to the State water quality requirements, and any more stringent requirements as determined by the City of Monessen.

I. LID and green infrastructure techniques described in the PA DEP Stormwater BMP Manual 2006 or most current edition are encouraged.

J. Projects must comply with the City's approved MS4 permit, including compliance with the six Minimum Control Measures (MCM's) and with the City's Pollutant Reduction Plan (PRP).]

§308. Watershed Standards

A. The stormwater management performance standards in this Ordinance are intended to implement the provisions, standards and criteria contained in the Pennsylvania Stormwater Management Act (Act 167), 32 P.S. §680.1 *et seq*. If there is any discrepancy between the provisions of this Ordinance and the provisions, standards and criteria of the Act, or if a stormwater management plan is subsequently approved and adopted by the appropriate governmental agency or body, then the provisions, standards and criteria of the current watershed plan shall govern.

B. Management of stormwater runoff is a key objective of 25 Pa.Code, Chapter 93, of the DEP Regulations, because runoff can change the physical, chemical, and biological integrity of waterbodies thereby impacting rate, volume and water quality.

C. The project plan shall describe how these rate, volume and water quality protection requirements will be met. Infiltration BMPs shall be evaluated and utilized to the maximum extent possible to manage the net change in stormwater runoff generated so that post construction discharges do not degrade the physical, chemical or biological characteristics of the receiving waters. These BMPs may be used to satisfy all or part of the requirements found within this Ordinance.

D. Refer to the Stormwater Performance Districts outlined in Appendix A, and the Westmoreland County Integrated Water Resources Plan (IWRP) at www.westmorelandstormwater.org. The project plan shall describe how the proposed project will address performance standards, impairments, and pollutant loading found in the IWRP. The release rate shall be 80% of the pre-development peak flow as set by the City of Monessen.

§309. Design Criteria for Stormwater Management Facilities and BMPs

A. General Criteria.

1. Applicants may select runoff control techniques, or a combination of techniques, which are most suitable to control stormwater runoff from the development site. Refer to the Acceptable Computation Methodologies table of this ordinance. All controls must be subject to approval of the City Engineer and the WCD. The City Engineer may request specific information on design and/or operating features of the proposed stormwater controls in order to determine their suitability and adequacy in terms of the standards of this Ordinance.
2. If the proposed development site is located in an impaired water shed according to Category 4 of the PA Integrated Water Quality Monitoring and Assessment Report, or in a watershed with a TMDL according to Category 5 of the same Report, the applicant shall identify the source and cause of impairment and shall propose, if required or applicable the use of BMPs to mitigate any impacts to the waters.
3. The applicant should consider the effect of the proposed stormwater management techniques on any special soil conditions or geological hazards which may exist on the development site. In the event such conditions are identified on the site, the City Engineer may require in depth studies by a competent geotechnical engineer. Not all stormwater control methods may be advisable or allowable at a particular development site.
4. The applicant shall consider the effect of the proposed stormwater management techniques on existing stream impairments and pollutant loading. Refer to the Westmoreland County Integrated Water Resources Plan (IWRP) at www.westmorelandstormwater.org .
5. The applicant shall consider existing conditions on the site for the prior five years to determine prevailing land use and impervious cover and shall consider 20% of existing impervious cover as meadow for pre-existing conditions on redevelopment sites.
6. The stormwater management practices to be used in developing a stormwater management plan for a particular site shall be selected according to the following order of preference:

a. Site planning for locating proposed buildings, impervious areas and grading which minimizes disruption of the natural site characteristics especially utilizing low impact development techniques.
b. Minimization of impervious areas and promotion of retentive grading.
c. Implementation of non-structural measures (refer to the PA DEP Stormwater BMP Manual 2006 or current edition).
d. Implementation of innovative / green infrastructure structural measures (refer to the PA DEP Stormwater BMP Manual 2006 or current edition).
e. Stormwater detention/retention structures.

7. Any BMP which is a dam, culvert, stream obstruction or encroachment or outfall as defined in 25 Pa.Code, Chapter 105, shall be designed according to the requirements in those regulations.
8. Drainage easements shall be provided for all stormwater conveyance and BMPs serving multiple properties and not located within a public right of way. Easements shall include ingress and egress to a public right of way, and shall be recorded at the County with the final plan. Terms of easement shall prohibit excavation or placement of fill or structures and any alteration that may adversely affect the flow of stormwater within any portion of the easement.
9. No person shall install, create, modify, remove, fill, landscape or otherwise alter or place any structure, soil, rock, material or vegetation in or on, or otherwise adversely affect, any stormwater management facility or any area within a stormwater easement without the written approval of the City of Monessen and approval of the WCD.
10. Persons engaged in land development activities shall provide the required [financial security, O&M Agreements] to the [municipality] as outlined in the Appendix B.

B. Criteria for Stormwater Management Facilities and BMPs.

1. If stormwater management facilities and BMPs are utilized for the development site, the facilities shall be designed such that post-development peak runoff rates from the developed site are controlled to the 80% release rate for the 2-, 10-, 50-and 100year storm frequencies. Rainfall data shall be obtained from NOAA Atlas 14 or other source as approved by the municipality.
2. All stormwater management facilities and BMPs shall be equipped with outlet/overflow structures to provide rate discharge control for the designated storm frequencies. Provision shall also be made to safely pass the entire post-development 100-year storm without breaching or otherwise damaging the facilities, downstream or neighboring properties.
3. Release of stormwater flow from a development site must be to an existing stormwater conveyance or easement whether natural or man-made. Calculations and information shall be presented as to the ownership, responsible party, capacity, and stability of such conveyance. Release of 'sheet flow' as from a level spreader, when it is the only option available will be permitted on a case-by-case basis as approved by the municipality and WCD.
4. All stormwater management facilities and BMPs shall be designed to control volume and water quality as defined by 80% release rate for the 2, 10, 50 and 100-year storm frequencies.

5. Shared stormwater management facilities and BMPs, which provide control of runoff for more than one development site within a single subarea may be considered and are encouraged. Such facilities shall meet the criteria contained in this Section. In addition, runoff from the development sites involved shall be conveyed to the facility in a manner that avoids adverse impacts (such as flooding or erosion) to channels and properties located between the development site and the shared storage facilities.
6. Where stormwater management facilities and BMPs will be utilized, multiple use facilities, such as wetlands, lakes, ballfields or similar recreational/open space uses are encouraged wherever feasible, subject to the approval of the City of Monessen.
7. Other considerations which shall be incorporated into the design of the stormwater management facilities and BMPs include:
    a. Inflow and outflow structures shall be designed and installed to prevent erosion and embankments, cuts, fills and bottoms of impoundment type structures should be protected from soil erosion.
    b. Control and removal of debris both in the storage structure and in inlet or outlet devices shall be a design consideration.
    c. Inflow and outflow structures, pumping stations and other structures shall be designed and protected, using safety benches, trash racks, energy dissipaters and other means to minimize safety hazards.
    d. . In appropriate instances as determined by the City, access may be restricted to include fencing in a minimum height of seven feet.
    e. Interior slopes of storage ponds shall not exceed a ratio of three to one horizontal to vertical dimension with a combination of interior and exterior slopes not exceeding five.
    f. Landscaping shall be provided for the facility which stabilizes disturbed areas and preserves the natural and beneficial values of the surrounding area. Woody vegetation shall not be located or planted on a BMP dam.
    g. Facility shall be located to facilitate maintenance, with an associated easement of adequate area considering the frequency and type of equipment that will be required.
    h. Underground detention / retention / infiltration facilities with an associated easement of adequate area shall be equipped with open grate inlet or manhole access to facilitate visual inspections

C. Criteria for Collection/Conveyance Facilities.

1. All stormwater runoff collection or conveyance facilities, whether storm sewers or other open or closed channels, shall be designed in accordance with the following basic standards:
    a. All building sites shall use measures to provide drainage away from and around the structure in order to prevent any potential flooding damage as much as practical. Such measures shall include grading the surrounding lawn or pavement area so that it slopes away from the structure by a minimum of 5% slope over a minimum distance of 10 feet; raising the floor of the structure so that it is a minimum of 6 inches above the predominate surrounding land elevation and a minimum of one foot above the base flood elevation in a floodplain; eliminating or waterproofing penetrations thru the structure's

walls or foundation; constructing berms, curbs, or swales to divert surface water around the structure; arranging roof and area drains to carry water away from the structure and to a stormwater BMP. Connection to a sanitary sewer is not allowed.

b. Developers proposing a land development or subdivision shall arrange internal drainage within the subdivision so that surface water is safely directed and channeled away from all structures within and adjacent to the development site to stormwater BMP.

c. Developers shall provide to all persons constructing a structure within a land development site, standards including drawings and specifications to ensure that those persons adhere to the general site plans and stormwater management plans for the development. Persons constructing a structure within a land development site shall submit to the municipal engineer and WCD drawings, calculations, and other information to show how they will meet the stormwater management requirements of the development site.

d. Lots located on the high side or low side of streets shall extend roof, trench and area drains to a stable vegetated area, natural watercourse, the curb or gutter line of roadway or storm collection/conveyance/control system (if applicable) in accordance with the approved stormwater management plan for the development site.

e. For all building sites and lots, the inclusion of rain barrels, rain gardens, drywells and other strategies for infiltration of roof runoff close to its source is required unless soil conditions prohibit their use.

f. Collection/conveyance facilities should not be installed parallel ~~and~~ less than 10 feet from the top or bottom of an embankment, greater than or equal to 15 feet height to avoid the possibility of failing or causing the embankment to fail, unless documented to be stable by a geotechnical analysis.

g. All collection/conveyance facilities shall be designed to convey the 100-year storm peak flow rate from the contributing drainage area and to carry it to the nearest suitable outlet such as a stormwater control facility, curbed street, storm sewer or natural watercourse. Where feasible avoid discharging into combination sewers in the CS4 District. Refer to Appendix A.

h. Where drainage swales or open channels are used, they shall be suitably lined to prevent erosion and designed to avoid erosive velocities.

2. Wherever storm sewers are proposed to be utilized, they shall comply with the following additional criteria:

   a. Where practical, designed to traverse under seeded and planted areas. If constructed within 10 feet of road paving, walks or other surfaced areas, drains shall have a narrow trench and maximum compaction of backfill to prevent settlement of the superimposed surface or development.

   b. Preferably installed after excavating and filling in the area to be traversed is completed, unless the drain is installed in the original ground with a minimum of 3 feet cover and/or adequate protection during the fill construction.

   c. *Designed.*

      i. With cradle when traversing fill areas of indeterminate stability.

      ii. With anchors when gradient exceeds 20 percent.

iii. With encasement or special backfill requirements when traversing under a paved area
iv. With encasement when installing within 18" vertical and 5' horizontal of a utility line or below a nearby sewer line.
v. All joints to be soil or watertight.

d. Designed to adequately handle the anticipated stormwater flow and be economical to construct and maintain. The minimum pipe size shall be 18 inches in diameter, with the exception of roof drains, foundation drains or similar conveyance.
e. Drainpipe, trenching, bedding and backfilling requirements and appropriate grates, catch basins, stormwater inlets, manholes and other appurtenances shall conform to the requirements of the City and/or applicable PennDOT specifications, Publication 408.
f. All corrugated metal pipe shall be polymer coated, and with paved inverts where prone to erode. Pipe within a municipality right-of-way shall be reinforced concrete pipe or high-performance polypropylene pipe with a minimum diameter of 18 inches.
g. Storm inlets and structures shall be designed to be adequate, safe, self-cleaning and unobtrusive and consistent with municipality standards with sufficient capture and conveyance capacity and spacing of inlets and cleanouts for maintenance.
h. Where a proposed sewer or conveyance connects with an existing storm sewer or conveyance system, the applicant shall demonstrate that sufficient capacity exists in the downstream system to handle the additional flow to its outfall.
i. Storm sewer outfalls shall be equipped with energy dissipation devices to prevent erosion and conform with applicable requirements of the Pennsylvania DEP for stream encroachments (Section 7 of the Dam Safety and Encroachments Act, 32 P.S. §693.1, et seq., and the rules and regulations promulgated thereunder at 25 Pennsylvania Code §105.441-105.449).
j. The use of storm sewers is permitted in the MS4 District, but not recommended to be utilized in the CS4 District unless no other alternative is practical and feasible as determined by the City Engineer and the WCD. Refer to Appendix A.

D. Criteria for Riparian Buffers
1. If a riparian buffer is required by PA DEP as part of an NPDES permit, then DEP regulations will govern.
2. If a Riparian Buffer is used to meet stormwater management requirements and/or MS4 pollutant load reduction credits it shall meet the following requirements:
   a. In order to protect and improve water quality, a Riparian Buffer Easement may be created and recorded as part of any subdivision or land development that encompasses a Riparian Buffer.
   b. Except as required by PA Code Title 25 Chapter 102, the Riparian Buffer Easement shall be a minimum of 35 feet measured from the top of the nearest bank (on each side), or an average of 35 feet with no distance from top of bank less than 25 feet.

c. Minimum Management Requirements for Riparian Buffers:
    i. Existing native vegetation shall be protected and maintained within the Riparian Buffer Easement.
    ii. Whenever practicable, invasive vegetation shall be actively removed and the Riparian Buffer Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.
    iii. There shall be no earth disturbance beyond which is necessary to establish or maintain a planted buffer.

3. The Riparian Buffer Easement shall be enforceable by the municipality and shall be recorded in the appropriate County Recorder of Deeds Office, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for the continued private ownership and shall count toward the minimum lot area a required by Zoning, unless otherwise specified in the municipal Zoning Ordinance.
4. Any permitted use within the Riparian Buffer Easement shall be conducted in a manner that will maintain the extent of the existing 100-year floodplain, improve or maintain the stream stability, and preserve and protect the ecological function of the floodplain.
5. Stormwater drainage pipes and all other linear utility lines as approved by the City shall be permitted within the Riparian Buffer Easement, but they shall cross the Easement in the shortest practical distance. Other stormwater management facilities and BMPs are not permitted within the Riparian Buffer Easement.
6. The following conditions shall apply when public and/or private recreation trails are permitted within Riparian Buffers:
    a. Trails shall be for non-motorized use only.
    b. Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.
7. Septic drain fields and sewage disposal systems shall not be permitted within the Riparian Buffer Easement and shall comply with setback requirements established under 25 Pa. Code Chapter 73.

E. Criteria for Stream Restoration Project

1. A stream restoration project may be eligible for stormwater management and/or MS4 load reduction credits if it meets qualifying criteria set by the City and as follows:
    a. Existing conditions, such as channel or streambank erosion and an actively enlarging or incising urban stream condition, shall be documented prior to restoration.
    b. Projects should be located on 1st to 3rd order (small) streams to be effective.
    c. Project should address a minimum of 100 linear feet of stream channel and both sides where need to do so is evident.
    d. Upstream impervious area should be sufficiently treated to address peak flows that may exceed engineering design thresholds or compromise channel form and function.

e. Utilize a comprehensive approach employing a mix of techniques appropriate to the site, creating long-term stability of the streambed, streambanks and floodplain.
f. Armored length of streams (ie. using riprap or gabions) may be used to maintain channel stability, but the same length shall not be included in the load reduction calculation.
g. Project shall maximize floodplain reconnection, with minimal channel invert elevation increase (ie bank height ratio = 1.0 or less) to achieve the objective.
h. Project shall include a minimum 35-foot permanent riparian buffer.
i. Project shall include an O&M plan identifying O&M activities, frequencies and responsible parties.

§310. ***Erosion and Sedimentation Controls.***

A. No regulated development activities within the City of Monessen shall commence until approval by the City of Monessen and the WCD of an erosion and sediment control plan for construction activities.
B. Any earth disturbance activity of 5,000 square feet or more requires an erosion and sedimentation control plan under 25 Pa.Code §102.4(b). Refer to the PA DEP Erosion and Sediment Pollution Control Manual 2012 or most recent version.
C. In addition, under Title 25 Pa.Code, Chapter 92, a DEP NPDES construction activities permit is required for regulated development activities.
D. Evidence of any necessary permit(s) for regulated development activities from the appropriate DEP regional office or Westmoreland Conservation District must be provided to the City prior to the start of the regulated development activity. The issuance of an NPDES construction permit (or permit coverage under the Statewide General Permit (PAG-2) may satisfy the requirements under subsection 1 upon review and approval by the City.
E. A copy of the erosion and sediment control plan and any permit required by DEP or the City shall be available at the project site at all times.

§311. ***Water Obstructions and Encroachments***

A. No regulated development activities which require Chapter 105 (Water Obstructions and Encroachment) permit from either PA DEP or Westmoreland Conservation District shall commence until all permits have received PA DEP or WCD approval, and City approval.
B. Evidence of any necessary Chapter 105 permit from PA DEP / WCD shall be provided to the City.
C. Proposed development shall avoid the long and short term adverse impacts associated with the occupancy and modification of floodplains as designated by FEMA, to the extent possible wherever there is a practicable alternative in order to reduce the risk of flood loss, minimize the impacts of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by flood plains.
D. Any proposed development found to be within the base floodplain of a waterway shall include the identification of impacts, an evaluation of practicable alternatives outside the floodplain via a hydrologic and hydraulics analyses, and when impacts cannot be avoided, the development of measures to minimize the impacts and restore and preserve the

floodplain as appropriate. Findings shall be presented at a public meeting and a determination made by the City Council of the City of Monessen.

E. Any proposed stormwater management plan should be consistent with the provisions of the PA Floodplain Management Act 166 of 1978 and applicable municipal floodplain ordinances.

ARTICLE IV Stormwater Management Plan Requirements.

§401. *General Requirements.*

No development plan, subdivision plat or land development plan shall be approved; no permit authorizing construction or development issued; nor any earth disturbance activity subject to this Ordinance shall be initiated or undertaken unless and until a stormwater management plan for such activity is reviewed and approved in accord with the provisions of this Ordinance.

A. No regulated development activities within the City shall commence until approval by the City of a stormwater management plan which demonstrates compliance with State water quality requirements after construction is complete. Refer to the Regulated Development Activity Table located in Article III of this ordinance.

B. The stormwater management plan must be designed, implemented and maintained to meet State water quality requirements, and any other more stringent requirements as determined by the City.

C. To control post-construction stormwater impacts from regulated development activities, State water quality requirements can be met by BMPs, including site design and green infrastructure, which provide for replication of pre-construction stormwater infiltration and runoff conditions, so that post-construction stormwater discharges do not degrade the physical, chemical or biological characteristics of the receiving waters. As described in the DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:

1. By maximizing the use of the site's natural characteristics.
2. *Infiltration.* Replication of pre-construction stormwater infiltration conditions.
3. *Treatment.* Use of water quality treatment BMPs to ensure filtering out of the chemical and physical pollutants from the stormwater runoff.
4. *Streambank and Streambed Protection.* Management of volume and rate of post-construction stormwater discharges, using detention / retention and other means, to prevent physical degradation of receiving waters (e.g., from scouring).

D. In the absence of an existing stormwater conveyance or easement whether natural or man-made for release of stormwater flow from a development site, an easement must be provided. Information shall be presented as to the ownership, responsible party, and agreement for said easement.

E. The stormwater management plan must meet DEP regulations that require municipalities to ensure design, implementation, and maintenance of best management practices (BMPs) that control runoff from new development and redevelopment after regulated development activities are complete. These requirements include the need to implement post-construction stormwater facilities and BMPs with assurance of long-term operations and maintenance of those BMPs.

F. Evidence of any necessary permit(s), such as Chapter 102 erosion and sedimentation control or Chapter 105 stream encroachment, for regulated development activities from WCD or the appropriate DEP regional office must be provided to the municipality. The issuance of an NPDES construction permit (or permit coverage under the Statewide General Permit (PAG-2) may satisfy the requirements of paragraph (A) above, after review and approval by the municipality.

G. Appropriate sections from the City's Subdivision and Land Development Ordinance (SALDO), and other applicable local ordinances, shall be followed in preparing the SWM Plans.

H. The City of Monessen shall not approve any SWM Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a SWM Plan is found to be deficient, the City may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, the City may accept submission of modifications.

I. *Professional Certification*. The stormwater management plan (including all calculations) must be prepared and sealed by a qualified professional with training and expertise in hydrology and hydraulics. Documentation of qualifications may be required by the City.

§402. *Stormwater Management Plan Contents.*

General Format. The stormwater management plan shall include a narrative and a set of plan drawings. Refer to checklist Appendix E.

A. A narrative describing the overall stormwater management concept for the project.
   1. A determination of site conditions in accordance with the PA DEP Stormwater BMP Manual. A detailed site evaluation shall be completed for projects proposed environmentally sensitive areas, such as brownfields.
   2. *Runoff Calculations*. Stormwater runoff design calculations for determining pre- and post-development discharge rates, for designing proposed stormwater control facilities and to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, must be submitted with the stormwater management plan. All calculations shall be prepared using the methods and data prescribed by general requirements in Section 302 of this Ordinance. Refer to the Acceptable Computation Methodologies table in Article III Section 307 of this Ordinance.
      a. Runoff volume and rate shall be calculated according to generally accepted methods such as those listed under Stormwater Management Performance Standards, General Standards.
      b. Detention/retention requirements, including volume, routing, etc. for BMPs shall be calculated using commonly acceptable standard method(s).
      c. Water quality calculations shall be determined by using the PA DEP Stormwater BMP Manual 2006 or current edition Worksheets 12 and 13.
   3. Expected project time schedule for the installation of all temporary and permanent stormwater control measures and devices. If the development is to be constructed in stages, the applicant must describe how stormwater facilities and BMPs will be sequentially installed to manage stormwater runoff safely during each stage of development.
   4. The effect of the project (in terms of runoff rate, volumes, and water quality) on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.
   5. If appropriate, the narrative should provide justification as to why any preferred stormwater management techniques, such as LID and green infrastructure, as listed

in this Ordinance, are not proposed for use. Refer to the PA DEP Stormwater BMP Manual 2006 or most recent edition for list of acceptable management techniques.

6. Operation and maintenance program and responsible party(s) for permanent stormwater facilities and BMPs. Refer to Article VI of this ordinance.

B. The stormwater management plan drawings shall be drawn to a scale of not less than 1-inch equals 50 feet. All sheets shall contain a title block with name and address of applicant and designer, scale, north arrow, legend and date of preparation.

1. *Existing and Proposed Features.* The plan shall show the following:

   a. *Watershed Location.* The City of Monessen is within the Monongahela River Watershed. Provide a key map (using USGS Topo maps) showing the location of the development site within the watershed. and watershed subarea(s). On all site drawings, show the boundaries of the watershedand subarea(s) as they are located on the development site and identify watershed name. name Refer to Appendix A Monongahela River Watershed and Appendix B Monessen Watershed Subareas Map.
   b. *Floodplain Boundaries.* Identify 100-year floodplains on the development site (as appropriate) based on the municipality Flood Insurance Study maps.
   c. *Natural Features.* Show all bodies of water (natural or artificial), watercourses (permanent and intermittent), swales, wetlands, and other natural drainage courses on the development site, or which will be affected by runoff from the development.
   d. *Soils.* Provide an overlay showing soil types and boundaries within the development site (consult WCD, SCS and U.S. Geological Survey for information).
   e. *Contours.* Show existing and final contours at intervals of 2 feet; in areas with slopes greater than 15 percent, 5-foot contour intervals may be used.
   f. *Land Cover.* Show existing and final land cover classifications, including existing and proposed improvements, as necessary to support and illustrate the runoff calculations performed.
   g. *Drainage Area Delineations.* Show the boundaries of the drainage areas and points of interest employed in the runoff calculations performed.
   h. *Utilities and easements.* Show the locations and easements of existing utilities, stormwater management or drainage controls and/or structures, such as sanitary sewers, water, gas, electric, telecommunications, storm sewers, swales, culverts, and any easements, which are located on the development site, or which are off site but may be affected by runoff from the development.
   i. Identify if the development site is within the municipal separate sanitary sewer system (MS4) or within the combination sanitary storm sewer system (CS4). Refer to Appendix A.
   j. For a listing of streets with a separate storm sewer system refer to Appendix G. Streets not listed in Appendix G have combination sanitary and storm sewers and are within the CS4 District. Refer to Appendix G.

2. *Proposed Stormwater Facilities and BMPs.* All proposed stormwater runoff control Measures must be shown on the plan including methods for collecting, conveying and storing stormwater runoff onsite, which are to be used both during and after

construction. Erosion and sedimentation controls shall be shown in accordance with applicable City and WCD requirements. The plan shall provide information on the exact type, location, sizing, design and construction of all proposed facilities and relationship to the existing watershed drainage system.

a. If the development is to be constructed in stages, the applicant must demonstrate that stormwater facilities will be installed to manage stormwater runoff safely during each stage of development.

b. A schedule for the installation of all temporary and permanent stormwater control measures and devices shall be included in the narrative and shown on the site plan.

c. Operation and maintenance program and responsible party(s) for permanent stormwater BMPs shall conform to the requirements of DEP and shall be approved by the City. Refer to Article VI of this ordinance.

3. *Easements, Rights of Way, Deed Restrictions.* BMPS and stormwater management facilities that provide control for more than one lot shall be located on a separate dedicated lot or in an easement. All existing and proposed easements for any BMPs and stormwater management facilities and controls for access, inspections, maintenance, repair, preservation, and use shall be shown on the plan and, if required, dedicated to the entity, association or person required. The easement and the purpose for the same shall be set forth on the plan and in the agreement required by the Ordinance.

§403. *Other Permits/Approvals.*

A list of any approvals/permits relative to stormwater management that will be required from other governmental agencies (e.g., Chapter 102 Erosion and Sedimentation Control, PennDOT HOP, Chapter 105 Water Obstruction and Encroachment Permit from PA DEP) and anticipated dates of submission/receipt should be included with the stormwater plan submission. Copies of permit applications may be requested by the City where they may be helpful for the plan review.

§404. *Operation and Maintenance Plan.*

The application shall contain a proposed operation and maintenance plan (O&M) for all stormwater control facilities in accordance with the following and as described in Article VI of this ordinance:

A. Identify the responsible party and their responsibilities as described in Article VI Section 601 (e.g., municipality, property owner, private corporation, homeowner's association or other entity).

B. Include an operation and maintenance plan for all stormwater facilities, outlining the routine maintenance actions and schedules necessary to ensure proper operation of the stormwater control facilities as described in Article VI Section 602.

C. Submit any legal agreements required to implement the maintenance program and an executed O & M Agreement as required by this Ordinance. Refer to Article VI Section 603 and Appendix C.

D. A record of inspections and repairs performed shall be provided to the City and WCD in accordance with the approved O & M Plan.

E. Identify method of financing continuing operation and maintenance if the facility is to be owned by other than the City or governmental agency. Refer to Article VI Section 604.

§405. ***Financial Guarantees***

Submit fees and financial guarantees in accordance with the provisions of this Ordinance. Refer to the Article VI Section 604 and Appendix F.

ARTICLE V Stormwater Management Plan Submission and Review Procedures.

§501. *Preapplication Phase.*

A. The Westmoreland County Integrated Water Resources Plan provides an online decision-making tool to assist developers, designers, property owners in addressing all water resources during development and redevelopment and should be consulted. Refer to www.paiwrp.com for the decision-making tool and www.westmorelandstormwater.org .

B. Applicants should refer to the Westmoreland County Integrated Water Resources Plan (IWRP) located at www.westmorelandstormwater.org, for mapping of impaired streams, riparian buffers and pollutant loading to determine appropriate BMPs to address sources of impairments.

C. Before submitting the stormwater management plan, and any other plan required by a reviewing agency, applicants are urged to consult with the City, Westmoreland County Department of Planning and Development and Westmoreland Conservation District, and PennDOT where applicable, on the requirements for safely managing the development site in a manner consistent with the City ordinances, applicable watershed stormwater management plan and Federal and State requirements. These agencies may also be helpful in providing necessary data for the stormwater management plan.

D. Applicants are encouraged to submit a sketch plan with a narrative description of the proposed stormwater management controls for general guidance and discussion with the City and other agencies.

E. The pre-application phase is not mandatory; any review comments provided by the City or other agencies are advisory only and do not constitute any legally binding action on the part of the City or any County agency.

§502. *Stormwater Management Plan Submission and Review.*

A. *Submission of Plans*. Stormwater management plan application shall be submitted with the preliminary and final subdivision/land development applications or if no subdivision or land development is involved, then with the application for development. Copies of the SWM Plan shall be submitted to the following agencies as determined by City:

1. Two copies to the City.
2. One copy to the City Engineer (when applicable).
3. One copy to the Westmoreland Conservation District (when applicable).
4. One copy to the local Sanitary Authority (when applicable).
5. One copy to the Westmoreland County Department of Planning and Development. (if applicable)
6. One copy to the Westmoreland County Department of Public Safety / local emergency management coordinator (when applicable)
7. One copy to DEP (when applicable)

B. *Notification of Affected Municipalities*. The City shall notify municipalities upstream and downstream of the development site which may be affected by the stormwater runoff and proposed controls for the site. Copies of the plans will be made available to the affected municipalities upon request. Comments received from any affected municipalities will be considered by the City Engineer and County agencies in their reviews.

C. *Review by City Engineer and Westmoreland Conservation District (WCD).* Stormwater management plans shall be reviewed by the City Engineer and WCD. A pre-application meeting with the City Engineer and WCD is recommended. BMPs shall be shown on all stormwater management plans and erosion and sedimentation control plans, as applicable. At its discretion, the City and/or WCD may also engage other specialists in hydrology or hydraulics to assist with the stormwater management plan review. The WCD will review the plan for general compliance with the watershed plan standards and criteria and watershed-wide impacts and, where appropriate, may consult with adjacent municipalities and counties for their comments. If the WCD review identifies the improper application of the watershed standards and criteria or the possibility of harmful impacts downstream from the development site's proposed stormwater management system, the applicant and City Engineer will be notified so that the necessary modifications can be made to promote safe stormwater management.

The City and the WCD shall notify the applicant in writing within 45 days whether the SWM site plan is approved or disapproved. If the SWM site plan involves a subdivision and land development plan, the notification shall occur within 90 days, unless the applicant is notified that a longer notification period is provided by other statute regulation or ordinance. If modifications are required, the review period may be extended by the City and the WCD, in order for the applicant to address inadequacies.

D. A disapproved stormwater management plan may be resubmitted, with the revisions addressing the City's and/or WCD's concerns, to the City and the WCD in accordance with this Article.

E. *City Engineer Review.* The City Engineer shall upon receipt of WCD's review, approve or disapprove the stormwater management plan based on the requirements of the City ordinances, the standards and criteria of the watershed plan, applicable State and Federal requirements and good engineering practice. The City Engineer shall submit a written report, along with supporting documentation, stating the reasons for approval or disapproval.

F. *Status of the Engineer's Determination.* The approval/disapproval of the site's stormwater management plan by the municipality engineer shall be submitted to the City Council for final action. Final approval of the plan rests with the City.

G. *Permits Required from other Governmental Agencies.* Where the proposed development requires a permit from the Pennsylvania DEP, PennDOT, or an erosion/sedimentation permit or Chapter 105 permit from the Westmoreland Conservation District, then final stormwater management plan approval shall be conditional upon receipt of such permits. However, no building permit shall be issued, nor construction or development started, until the permits are received, the O & M Agreement, easement and/or right-of-ways are recorded. and copies filed with the City.

H. Reviews by the City and WCD may be subject to fees as outlined in Article VII section 706 of this Ordinance.

§503. *Status of Stormwater Management Plan after Approval.*

A. Upon final stormwater management plan approval and receipt of all necessary permits, fees, financial guarantees and agreements, easements and right-of-ways the applicant may

commence to install or implement the approved stormwater management plan, BMPs plan or erosion and sedimentation plan controls.

B. If site development or building construction does not begin within one year of the date of final approval of the stormwater management plan, then before doing so, the applicant shall re-submit the stormwater management plan, BMPs plan or erosion or sedimentation plan to verify that no condition has changed on the property, adjacent to the site or within the watershed that would affect the feasibility or effectiveness of the previously approved stormwater management controls. Further, if for any reason development activities are suspended for two year or more, then the same requirement for re-submission of the stormwater management plan shall apply.

C. The applicant shall submit a fee with the re-submission of the stormwater management plan. The fee for the re-submission shall be the same as the fee for a new stormwater management plan.

§504. ***Modification of Stormwater Management Plan.***

If the request for a plan modification is initiated before construction begins, the stormwater management plan must be resubmitted and reviewed according to the procedures, contained in this ordinance.

A. If the request for a plan modification is initiated after construction is underway, the City Engineer and / or the WCD shall have the authority to approve or disapprove the modification based on field conditions; provided:

1. The requested changes in stormwater controls do not result in any modifications to other approved municipality land use/development requirements (e.g., building setbacks, yards, etc.).
2. The performance standards in this Ordinance are met. Notification of the Engineer's and / or WCD's action shall be sent to the City which may issue a stay of the plan modification within five days and require the permittee to re-submit the plan modification for full stormwater management plan review in accordance with this ordinance.

B. It shall be unlawful to, and no person shall, alter, replace, modify, landscape or remove, or otherwise adversely affect, any permanent stormwater management facilities, BMP controls, or any area within a stormwater easement or dedicated or designated area for stormwater facilities and BMPs required by an approved stormwater management plan, BMP operations and maintenance plan, or to allow the property to remain in a condition which does not conform to an approved stormwater management plan, BMP operations and maintenance plan, unless an exception is granted in writing by the municipality and/or approval is secured from all relevant agencies of the Commonwealth.

§505. ***Inspection of Stormwater Management Facilities and BMPs.***

A. The City Engineer or a designated representative shall inspect the implementation, construction, condition, operation and maintenance of the temporary and permanent stormwater management system and controls for the development site. The City or a designated representative shall have the right to temporarily locate on any BMP in the City

such devices as are necessary to conduct monitoring and/or sampling the discharge from such BMP.

B. The permittee shall notify the City Engineer and the WCD 48 hours in advance of the completion of the following key development phases:
   1. At the completion of preliminary site preparation including stripping of vegetation, stockpiling of topsoil and construction of temporary stormwater management control facilities.
   2. At the completion of rough grading but prior to placing topsoil, permanent drainage or other site development improvements and ground covers.
   3. Before the commencement and during construction of the permanent stormwater facilities and BMPs at such times as specified by the plan and City Engineer.
   4. Completion of permanent stormwater management facilities and BMPs including established ground covers and plantings.
   5. Completion of final grading, vegetative control measures or other site restoration work done in accordance with the approved plan and permit.

C. The City and/or WCD may conduct inspections during construction as it deems appropriate.

D. No work shall commence on any subsequent phase until the preceding one has been inspected and approved. If there are deficiencies in any phase, the City Engineer and/or WCD shall issue a written description of the required corrections and stipulate the time by which they must be made.

E. If, during construction, the contractor or permittee identifies any site condition, such as subsurface soil conditions, alterations in surface or subsurface drainage, which could affect the feasibility of the approved stormwater facilities, or erosion and sedimentation controls he/she shall notify the City Engineer and/or WCD within 24 hours of the discovery of such condition and request a field inspection. The City Engineer and/or WCD shall determine if the condition requires a modification of the stormwater management plan, BMPs plan or erosion and sedimentation control plan. If the conditions affect the BMP's design or construction, work shall be terminated until an approved correction is received in writing. All cost for the review shall be borne by the permittee.

F. In cases where stormwater facilities or erosion and sedimentation controls are to be installed in areas of landslide-prone soils or other special site conditions exist, the City may require special precautions such as a geotechnical study, soil tests and core borings, full-time inspectors and/or similar measures. All costs of any such measures shall be borne by the permittee.

§506. *Record Drawings, Completion Certificate, and Final Inspection*

A. The permittee shall be responsible for providing record drawings of all stormwater management facilities and BMPs as built and included in the approved Stormwater Management Plan. The record drawings and an explanation of any discrepancies with the construction plans shall be submitted to the City and WCD.

B. The record drawing submission shall include a certification of completion signed by the professional engineer and qualified personnel responsible for verifying that all permanent stormwater management facilities and BMPs have been constructed according to the approved plans and specifications. The latitude and longitude coordinates for all permanent stormwater management facilities and BMPs must also be submitted, at the central location

of the BMPs. If any licensed qualified professionals contributed to the construction plans, then a licensed qualified professional must sign the completion certificate.

C. After receipt of the completion certification, the City and/or WCD may conduct a final inspection.

ARTICLE VI Operation and Maintenance of Stormwater Facilities and BMPs

§601. *Operation and Maintenance Responsibilities*

A. The stormwater management plan for the development site shall contain an operation and maintenance (O&M) plan prepared by the developer and approved by the City and/or WCD. The operation and maintenance plan shall outline the responsible party(ies) and required routine maintenance actions and schedules necessary to insure proper operation of the stormwater control facility(ies).

B. The stormwater management plan for the development site shall establish responsibilities for the continuing O&M of all stormwater facilities and BMPs, consistent with the following:

1. If a development consists of structures or lots which are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the City, stormwater facilities and BMPs should also be dedicated to and maintained by the municipality, except for those individual on-lot facilities and BMPs for privately owned structures.
2. If a development site is to be held in single ownership or if sewers and other public improvements are to be privately owned, operated and maintained, then the operation and maintenance of stormwater facilities and BMPs should be the responsibility of the owner or private management entity.
3. Person(s) responsible for operation and maintenance of stormwater facilities and BMPs shall be named with contact information provided.

C. The City Council, upon recommendation of the City Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The City Council reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management facilities and BMPs.

D. If the development site involves land located in both the City of Monessen and Rostraver Township, then the plan shall be reviewed by the City, Rostraver Township and Conservation District to determine if all activities both within and without the municipality meets the requirements of this Ordinance.

E. Stormwater facilities and BMPs shall be inspected by the owner/responsible party named in the O&M plan after every storm event. or as approved in the O&M plan. The owner shall document the inspections with reports that shall include photographs, written reports detailing the condition of the facility, measured drawings as necessary to document conditions of the facility(ies) and repair completed. The report shall be provided to the City within two weeks of the inspection.

§602. *Stormwater Facility and BMP Operations and Maintenance Plan Requirements*

A. No regulated development activities within the City will be considered complete until approval by the City of BMP operations and maintenance plan which describes how the

permanent (i.e., post-construction) stormwater facilities and BMPs will be properly operated and maintained.

B. The following items shall be included in the BMP operations and maintenance plan:
   1. Map(s) of the project area, in a form that meets the requirements for recording at the Office of the Recorder of Deeds of Westmoreland County, refer to the http://www.wcdeeds.us/dts/ . The contents of the maps(s) shall include, but not be limited to:
      a. Ownership and operation and maintenance responsibilities of stormwater facilities and BMPs.
      b. Clear identification of the location and nature of permanent stormwater facilities and BMPs.
      c. The location of the project site relative to highways, municipality boundaries or other identifiable landmarks.
      d. Existing and final contours at intervals of 2 feet are required if the general slope of the site is less than 15 percent, and at vertical intervals of 5 feet if the general slope is equal to or greater than 15 percent.
      e. Existing streams, lakes, ponds, or other bodies of water within the project site area.
      f. Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, and areas of natural vegetation to be preserved.
      g. The locations of all existing and proposed utilities, sanitary sewers, and water lines within 50 feet of property lines of the project site.
      h. Proposed final changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added.
      i. Proposed final structures, roads, paved areas, and buildings.
      j. A 15 foot wide access easement around all stormwater facilities and BMPs that would provide ingress to and egress from a public right-of-way.
   2. A description of how each permanent stormwater facilities and BMPs will be operated and maintained, and the identity of the person(s) responsible for operations and maintenance.
   3. The name of the project site, the name and address of the owner of the property, and the name of the individual or firm preparing the plan.
   4. A statement, signed by the landowner, acknowledging that the stormwater facilities and BMPs are fixtures that can be altered or removed only after approval by the City.

C. Each stormwater facility and BMP shall be recorded with the County as permanent real estate appurtenances, and as deed restrictions or conservation easements that run with the land. Prior to final approval of the stormwater plan the property owner shall sign and record an O&M agreement for those facilities and BMPs. Refer to Appendix B of this ordinance.

D. If the owner fails, refuses or neglects to maintain any stormwater facility and/or BMP, the City reserves the right to conduct maintenance work and charge and assess the owner any and all costs, expenses incurred and fees set by the City. The City reserves the right to take enforcement actions for failure to perform required O&M. Refer to article VII of this ordinance.

E. The owner shall submit a financial guarantee for timely installation and proper construction of stormwater facilities and BMPs as specified in Article VII of this ordinance.

§603. *Operations and Maintenance Agreement for Privately Owned Stormwater Facilities and BMPs*

A. Prior to final approval of the site's stormwater management plan the property owner shall sign and record a maintenance agreement covering all stormwater facilities and BMPs which are to be privately owned. The agreement (refer to Appendix B) shall stipulate that:

1. The owner, successors and assigns shall maintain all facilities in accordance with the approved maintenance schedule and shall keep all facilities in a safe and functional manner and consistent with the surrounding natural area.
2. The owner, successors and assigns shall convey to the City easements and/or rights-of-way to assure access for periodic inspections by the City and maintenance, if required.
3. The owner, successors and assigns shall keep on file with the City the name, address and telephone number of the person or company responsible for maintenance activities; and in the event of a change, new information will be submitted to the City within 10 days of the change.
4. If the owner, successors and assigns fails to maintain the stormwater facilities and BMPs following due notice by the City to correct the problem(s), the City may perform the necessary maintenance work or corrective work and the owner shall reimburse the municipality for all costs.

B. Other items may be included in the agreement where determined necessary to guarantee the satisfactory inspection and maintenance of all stormwater facilities and BMPs for a 10 year period. The maintenance agreement shall be subject to the review and approval of the City's Solicitor and the City Council and shall be in a form such as may be recorded in the Office of the Recorder of Deeds in the County in which the facility is located.

C. The property owner shall sign an operations and maintenance agreement with the City covering all stormwater facilities and BMPs that are to be privately owned. The agreement shall be substantially the same as the agreement in the Appendix of this Ordinance.

§604. *City of Monessen Stormwater Facility and BMP Operation and Maintenance Fund*

A. Persons installing stormwater facilities or BMPs shall be required to pay a specified amount to the City stormwater facilities and BMPs fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:

1. If the stormwater facilities and/or BMPs are to be privately owned and maintained, the deposit shall cover the cost of periodic inspections performed by the City for a period of four years, Refer to Appendix F. After that period of time, inspections will be performed at the expense of the City.
2. If the stormwater facilities and/or BMPs are to be accepted, owned and maintained by the City, the deposit shall cover the estimated costs for maintenance and

inspections for 10 years. The City Engineer will establish the estimated costs utilizing information submitted by the applicant.

3. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The City Engineer shall determine the present worth equivalents which shall be subject to the approval of the City Council of the City of Monessen.

B. If stormwater facilities and BMPs are proposed that also serves as a recreation facility (e.g., ball field, lake), the City may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purposes, or the City may accept the maintenance fund deposit on behalf of the agency managing the recreation resource and make said fees available to the agency's maintenance department.

C. If at some future time stormwater facilities and BMPs (whether publicly or privately owned) are eliminated due to the installation of storm sewers or other stormwater facilities and BMPs, the unused portion of the maintenance fund deposit will be applied to the cost of abandoning the facility and connecting to the storm sewer system or other facility. Any amount of the deposit remaining after costs of abandonment are paid will be returned to the depositor.

ARTICLE VII Fees, Financial Guarantees and Dedication of Public Improvements

§701. *Guarantee of Completion*

A completion guarantee or financial security in the form of a bond, cash deposit, cashier's check or other negotiable securities acceptable to the municipality shall provide for, and secure to the municipality, the completion of any improvements which may be required on or before the date fixed in the formal action of approval or accompanying agreement for completion of the improvements. The guarantee or security shall cover any and all stormwater management facilities, BMPs, erosion and sedimentation controls and other required improvements (collectively, "improvements") and shall be equal to 110% of the cost of completion estimated as of 90 days following the date scheduled for completion by the developer. Annually the City may adjust the amount of financial security by comparing the actual cost of the improvements which have been completed and the estimated cost for the completion of the remaining improvements as of the expiration of the 90th day after either the original date scheduled for completion or a rescheduled date of completion. Subsequent to said adjustment, the City may require the developer to post additional security in order to assure that the financial security equals said 110%. Any additional security shall be posted by the developer in accordance with this subsection. The amount of the guarantee or financial security required shall be determined utilizing the provisions of §509 (g) of the Municipalities Planning Code.

§702. *Release of Completion Guarantee*

The completion guarantee or financial security shall be returned or released upon written certification by the City Engineer or a designated agent that improvements and facilities have been installed and completed in accordance with the approved plan and specifications. The procedures for requesting and obtaining a release of the completion guarantee shall be in a manner prescribed by the §510 of the Municipalities Planning Code.

§703. *Default of Completion Guarantee*

If improvements are not installed in accordance with the approved final plans, the City Council may enforce any corporate bond or any security by appropriate legal and equitable remedies. If proceeds of such bond or other security are insufficient to pay the cost of installing or making repairs or corrections to all the improvements covered by said security, the City Council may at its option install part of such improvements in all or part of the development and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the improvements. All proceeds, whether resulting from the security or from any legal or equitable action brought against the developer, or both, shall be used solely for the installation of the improvements covered by such security and not for any other City purpose.

§704. *Dedication of Public Improvements*

When streets, sanitary sewers, stormwater management facilities, BMPs, erosion and sedimentation controls or other required improvements in the development have been completed in accordance with the final plans, such improvements shall be deemed private until such time as they have been offered for dedication to the City and accepted by separate ordinance or resolution or until they have been condemned for use as a public facility. The City shall be under no obligation

to accept such facilities or controls unless and until the City so determines that it is in the best interest of the City to do so.

A. Prior to acceptance of any improvements or facilities, the municipality engineer shall inspect the same to ensure that the same are constructed in accordance with the approved plans and are functioning properly.

B. The owner shall submit as-built plans for all facilities proposed for dedication.

§705. *Maintenance Guarantee*

Prior to acceptance of any improvements or facilities, the applicant shall provide financial security to secure the structural integrity and functioning of the improvements. The security shall:

A. Be in the form of a bond, cash, cashier's check or other negotiable securities acceptable to the City.

B. Be for a term of 18 months.

C. Be in an amount equal to 15 percent of the actual cost of the improvements and facilities so dedicated.

§706. *Fee Schedule*

The City Council may adopt by resolution, from time to time, a reasonable schedule of fees to cover the cost of pre-submitted and pre-construction meetings, plan reviews, inspections and other activities necessary to administer, monitor and enforce the provisions of this Ordinance. All fees shall be set in accordance with the applicable provisions of the Municipalities Planning Code, 53 P.S. §10101 *et seq.*, and any dispute over the fee amount shall be resolved in the manner prescribed by the Municipalities Planning Code.

ARTICLE VIII Enforcement Procedures and Remedies

§801. *Right of Entry*

Upon presentation of proper credentials, duly authorized representatives of the City may enter at reasonable times upon any property to inspect, investigate or ascertain the condition of the subject property in regard to an aspect related to stormwater management regulated by this Ordinance. Prohibitions and unreasonable delays in allowing the City access to a stormwater management facility pursuant to this Ordinance is a violation of this Ordinance. The failure of any person or entity to grant entry or to undertake any action which impedes or prevents entry is prohibited and constitutes a violation of this Ordinance. Unless in the event of an emergency, the City shall notify the property owner and/or developer within twenty-four hours prior to entry.

§802. *Enforcement Generally*

A. It shall be unlawful for a person to undertake any regulated activity except as provided in an approved SWM Plan, unless specifically exempted in Article III Section 303 of this Ordinance.

B. It shall be unlawful to alter any BMPs, facilities or structures that were installed under the Ordinance without written approval of the City.

C. In the event that the applicant, permittee, developer, owner or his/her agent fails to comply with the requirements of this Ordinance or fails to conform to the requirements of any permit a written notice of violation shall be issued. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of the violation(s). Upon failure to comply within the time specified, unless otherwise extended by the City, the applicant, permittee, developer, owner or his/her agent shall be subject to the enforcement remedies of this Ordinance. Such notice may require without limitation:

   1. Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the City may order compliance by written notice to the responsible person. Such notice may require without limitation, any or all of the following:
      a. The performance of monitoring, analyses, and reporting.
      b. The elimination of prohibited connections or discharges.
      c. Cessation of any violating discharges, practices, or operations.
      d. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property.
      e. Payment of a fine to cover administrative and remediation costs.
      f. The implementation of stormwater management measures or facilities.
      g. Operation and maintenance of stormwater management measures and/or facilities
      h. Assessment and payment of any and all costs and expenses relative to corrective measures taken or to be taken and reasonable costs, expenses and attorney fees incurred by the City in and related to enforcement and collection proceedings.
   2. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the

work will be done by the City or designee and the expense thereof shall be charged to the violator.

3. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the City from pursuing any and all other remedies available in law or equity.

§803. ***Suspension and Revocation***

A. Any approval or permit issued by the City pursuant to this Ordinance may be suspended or revoked for:
   1. Non-compliance with or failure to implement any provision of the approved SWM Plan or O&M Agreement.
   2. A violation of any provision of this Ordinance or any other applicable law. ordinance, rule, or regulation related to the Regulated Activity.
   3. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers the life or property of others.

B. A suspended approval may be reinstated by the City when:
   1. The City has inspected and approved the corrections to the violations that caused the suspension.
   2. The City is satisfied that the violation has been corrected.

C. An approval that has been revoked by the City cannot be reinstated. The applicant may apply for a new approval under the provisions of this Ordinance.

D. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the City may provide a limited time period for the owner to correct the violation. In these cases, the City may provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the City may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

§804. ***Preventative Remedies***

A. In addition to other remedies, the City may institute and maintain appropriate actions by law or in equity to restrain, correct or abate a violation, to prevent unlawful construction, to recover damages and to prevent illegal occupancy of a building or premises.

B. In accordance with the Municipalities Planning Code, 53 P.S. §10101 *et seq.*, the City may refuse to issue any permit or grant approval to further improve or develop any property which has been developed in violation of this Ordinance.

§805. ***Violations and Penalties***

A. Any person who has violated or knowingly permitted the violation of the provisions of this Ordinance or has refused, neglected or failed to perform any of the actions required pursuant to the Notice set forth in Section 802. above, upon conviction thereof in an action brought before a magisterial district judge in the manner provided for the enforcement of

summary offenses under the Pennsylvania Rules of Criminal Procedure, shall be guilty of a summary offense, and shall be sentenced to pay a fine of not less than $100.00 nor more than $1,000.00 for each violation, plus costs, together with reasonable attorney fees; and, in default or failure of full and timely payment of such fine, costs and fees, to a term of imprisonment not to exceed ninety (90) days or to a term of imprisonment to the extent permitted by law for the punishment of violations of summary offenses, whichever is less. Each day that a violation of this Ordinance continues or each Section of this Ordinance which shall be found to have been violated shall constitute a separate offense and be deemed a public nuisance. No judgment shall commence or be imposed, levied or be payable until the date of the determination of a violation by the magisterial district judge.

B. If the defendant neither pays nor timely appeals the judgment, the City may enforce the judgment pursuant to applicable rules of civil procedure.

C. Each day that a violation continues shall constitute a separate violation unless the magisterial district judge further determines that there was a good faith basis for the person violating this Ordinance to have believed that there was no such violation. In such case there shall be deemed to have been only one such violation until the fifth day following the date of the district justice's determination of the violation; thereafter each day that a violation continues shall constitute a separate violation.

D. All judgments, costs and reasonable attorney fees collected for the violation of this Ordinance shall be paid over to the City.

E. The Court of Common Pleas, upon petition, may grant an order of stay, upon cause shown, tolling the per diem fine pending a final adjudication of the violation and judgment.

F. Nothing contained in this Section shall be construed or interpreted to grant to any person or entity other than the City, the right to commence any action for enforcement pursuant to this Section.

G. Each day that a violation of any provision of this Ordinance shall constitute a separate violation and be deemed a public nuisance.

§806. *Additional Remedies*

In addition to the above remedies, the City may also seek the remedies and penalties under applicable Pennsylvania statutes, or regulations adopted pursuant thereto including, but not limited to, the Third Class City Code, the Stormwater Management Act, 32 P.S. §§693.1 *et seq.*, and the erosion and sedimentation regulations, 25 Pa.Code, Chapter 102. Any activity conducted in violation of this Ordinance or any Pennsylvania approved watershed stormwater management plan may be declared a public nuisance by the City and abatable as such.

§807. *Appeals.*

A. Appeals.

1. Any person aggrieved by a decision of the City or any of its authorized persons or agencies, may appeal in writing said decision to either (i) the Zoning Hearing Board for any matter relating to the zoning ordinance or official map of the City, or (ii) the Planning Commission for any other matter hereunder within thirty (30) days of any

decision. Any appeal must be filed with the Planning Commission.If a decision appealed is from an authorized person or agency of the City, a copy of the written appeal must be filed with such person or agency by such appellant within thirty (30) days of such decision.

2. The appellant shall pay to the City at the time of filing the appeal, any and all fees and charges as set forth in a Resolution of the City.

B. Procedure. Any Appeal filed pursuant to this section shall be governed by the Local Agency Law of the Commonwealth of Pennsylvania (2 Pa. C.S.A. §105, specifically 2 Pa. C.S.A. §551-§555).

C. Hearing. The Planning Commission or, if applicable, the Zoning Hearing Boardshall schedule a hearing within sixty (60) days of receipt of said Appeal. Written notice of the hearing shall be given to the party filing the Appeal and any authorized person or agency of the City involved, not less than fifteen (15) days prior to said hearing.

D. Hearing Procedure.

1. All testimony may be stenographically recorded and a full and complete record be kept of the proceedings. In the event all testimony is not stenographically recorded and a full and complete record of the proceedings is not provided by the local agency, such testimony shall be stenographically recorded and a full and complete record of the proceedings and shall be kept at the request of any party agreeing to pay the costs thereof.
2. The Planning Commission and Zoning Hearing Board shall not be bound by technical rules of the evidence at the aforesaid hearing, and all relevant evidence of reasonably probative value may be received. Reasonable examination and cross-examination shall be permitted.

E. Adjudication.
The adjudication of the Planning Commission and Zoning Hearing Boardshall be in writing, shall contain findings and the reasons for the adjudication, and shall be served upon all parties to the Appeal or their counsel personally, or by mail.

F. Appeal from Adverse Adjudication.
Pursuant to 2 Pa. C.S.A. Section 751 et seq. any person aggrieved by the adjudication of Planning Commission and Zoning Hearing Boardwho has a direct interest in such adjudication shall have the right to appeal therefrom to the Court vested with jurisdiction of such appeals by or pursuant to Title 42 (Relating to Judiciary and Judicial Procedure).

REFERENCES

1. U.S. Department of Agriculture, National Resources Conservation Service (NRCS). *National Engineering Handbook.* Part 630: Hydrology, 1969-2001. Originally published as the ***National Engineering Handbook***, Section 4: Hydrology. Available from the NRCS online at: http://www.nrcs.usda.gov/.

2. U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. ***Technical Release 55: Urban Hydrology for Small Watersheds***, 2nd Edition. Washington, D.C.

3. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. ***Pennsylvania Stormwater Best Management Practices Manual.*** Harrisburg, PA.

4. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (March 31, 2012), as amended and updated. ***Erosion and Sediment Pollution Control Program Manual.*** Harrisburg, PA.

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. ***Precipitation-Frequency Atlas of the United States, Atlas 14***, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

6.PennDOT **Publication 408 – Construction Specifications, Publication 584 - Drainage Manual** current editions.

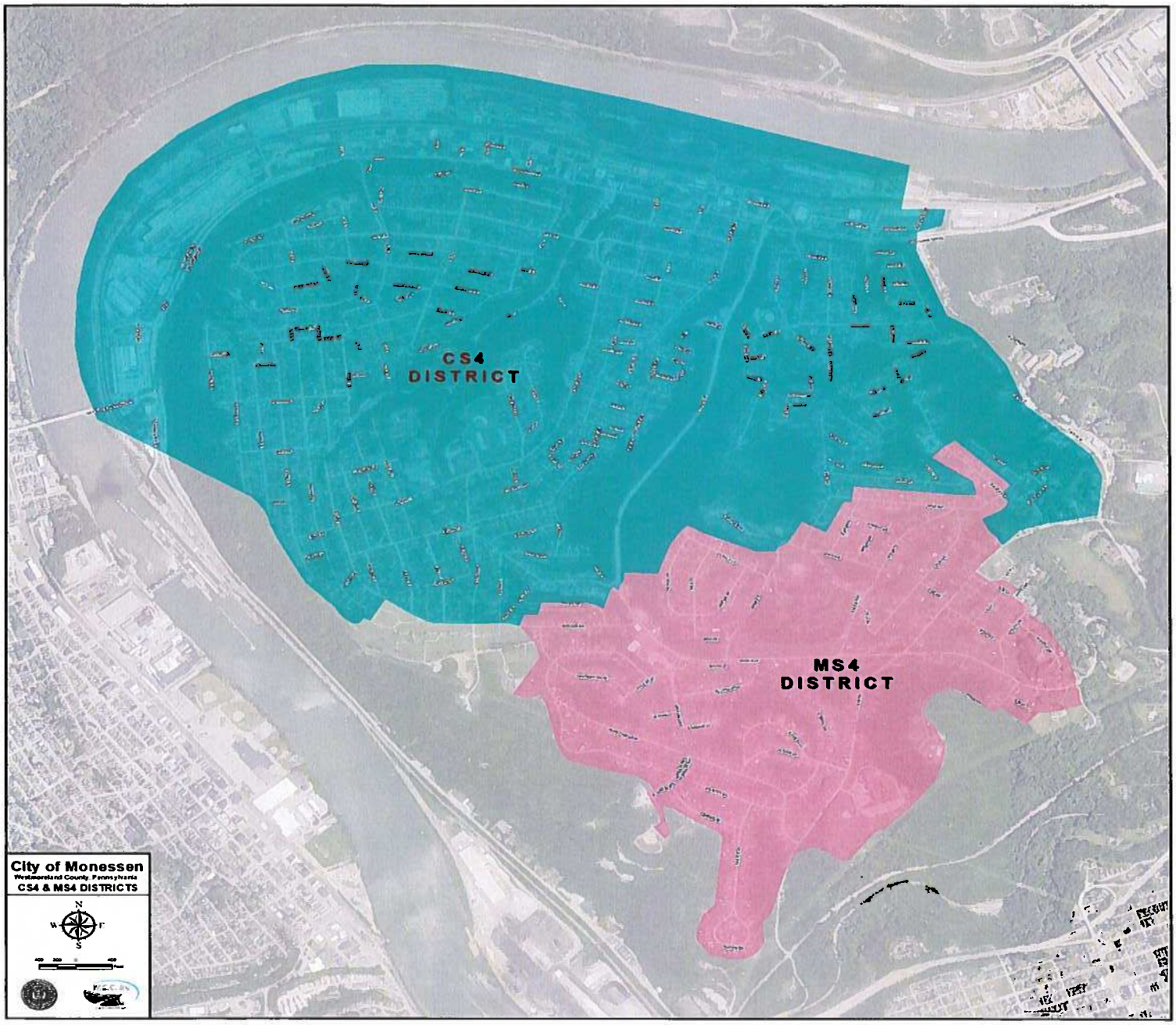
Appendix A	Combination Sanitary Storm Sewer System (CS4) and Municipal Separate Sanitary Sewer System (MS4) Districts
Appendix B	Monessen Watershed Subareas
Appendix C	Operation and Maintenance (O&M) Agreement
Appendix D	Small Project Stormwater Management Site Plan
Appendix E	Stormwater Management Plan Checklist
Appendix F	Fees
Appendix G	Streets with Municipal Separate Storm Sewer System (MS4)

Stormwater Management Ordinance

APPENDIX A

COMBINATION SANITARY STORM SEWER SYSTEM (CS4)

AND MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISTRICTS



The entire City of Monessen is within the Monongahela River Watershed and has a release rate of 80% of the pre-development peak-flow

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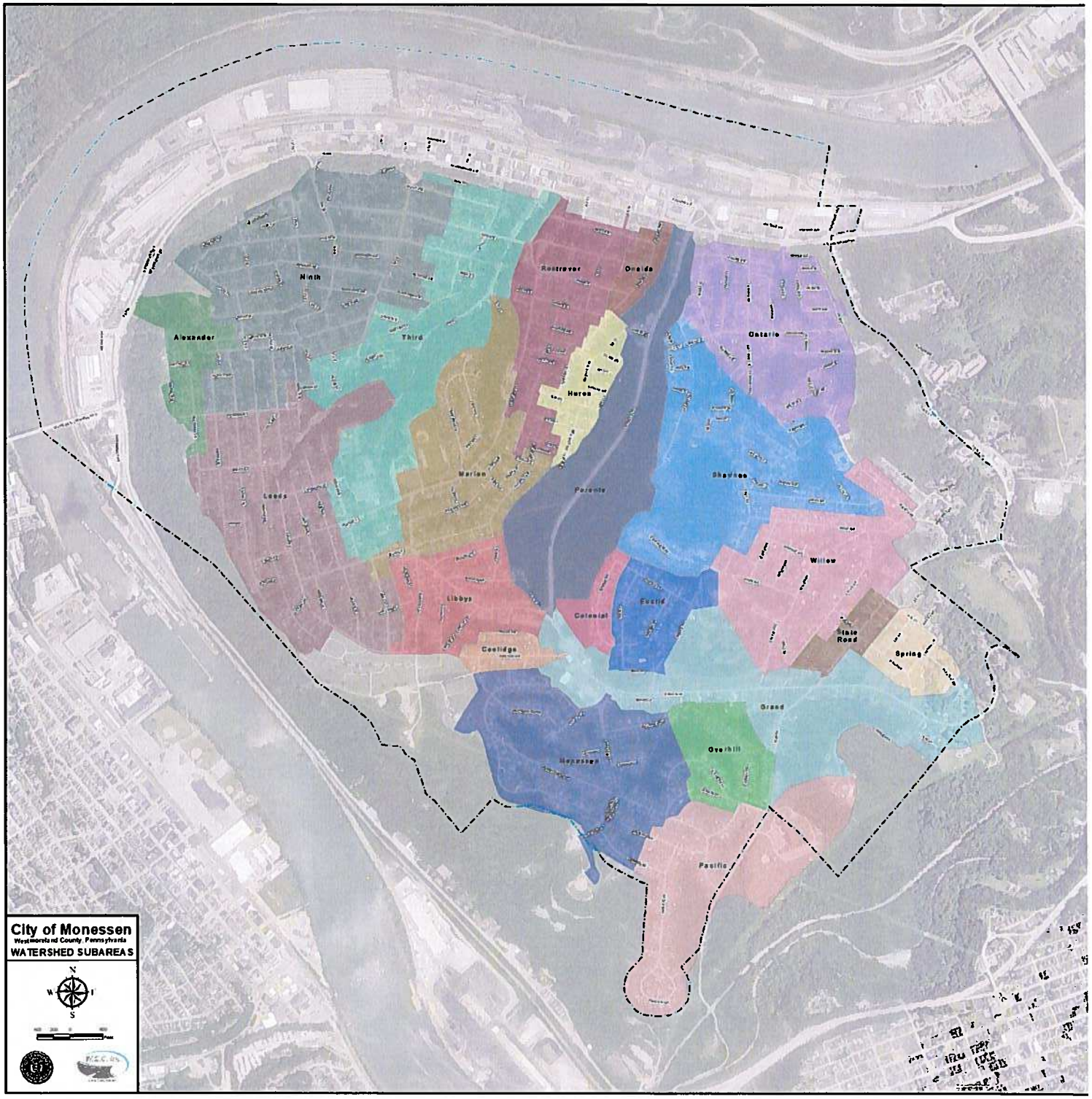
Stormwater Management Ordinance

APPENDIX B

Monessen Watershed Subareas



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APPENDIX C

OPERATION AND MAINTENANCE (O&M) AGREEMENT STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (SWM BMPs)]

THIS AGREEMENT, made and entered into this day _____of _____, 20_____ , by and between _____ (hereinafter the "Landowner"), and _____, Westmoreland County, Pennsylvania (hereinafter "Municipality");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Westmoreland County, Pennsylvania, Deed Book _____ at page_____ , (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the Stormwater Management Best Management Practices (SWM BMP) Operation and Maintenance (O&M) Plan approved by the Municipality (hereinafter referred to as the "O&M Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the City, provides for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, the City, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the City and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, the City requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said SWM Site Plan and the City's Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the BMPs as shown on the SWM Site Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.

3. The Landowner hereby grants permission to the City, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the City shall notify the Landowner prior to entering the property.

4. In the event the Landowner fails to operate and maintain the BMPs per paragraph 2, the City or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMPs. It is expressly understood and agreed that the City is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the City.

5. In the event the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the City for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the City.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the City from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or City.

8. The City intends to inspect the BMPs at a minimum of once every four years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Westmoreland County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs, and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the City:

_____

For the Landowner:

_____

ATTEST:

_____(City, Borough, Township)

County of Westmoreland, Pennsylvania

I, _____ , a Notary Public in and for the county and state aforesaid, whose commission expires on the day _____ of _____ , 20_____ , do hereby certify that whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____, 20_____, has acknowledged the same before me in my said county and state.

GIVEN UNDER MY HAND THIS _____ day of _____ , 20 _____.

_____ _____

NOTARY PUBLIC **(SEAL)**

Stormwater Management Ordinance

APPENDIX D

City of Monessen

SMALL PROJECT STORMWATER MANAGEMENT PLAN

This small project stormwater management plan has been developed to assist those proposing residential projects to meet the requirements of the *City of Monessen Stormwater Management Ordinance* (SWO) without having to draft a formal stormwater management plan. This small project stormwater management plan is only permitted for projects with new impervious area with 501 to 3,000 square feet, or total earth disturbance of 2,501 to 5,000 square feet, (Section 302 Regulated Development Activity Table of the SWO) and by using the recommendations in this Appendix for Volume Control. Additional information can be found in Chapter 6 of the PA SW BMP Manual 2006 or most recent version.

This appendix shall not be used for larger projects that are developed piece meal or multi-lot projects. This appendix shall be used to design single parcel, on-lot best management practices (BMPs). A blanket access easement shall be provided for City inspections and included on the signed agreement.

For applicants not knowledgeable with SWM BMPs, a pre-application meeting with City Engineer is recommended.

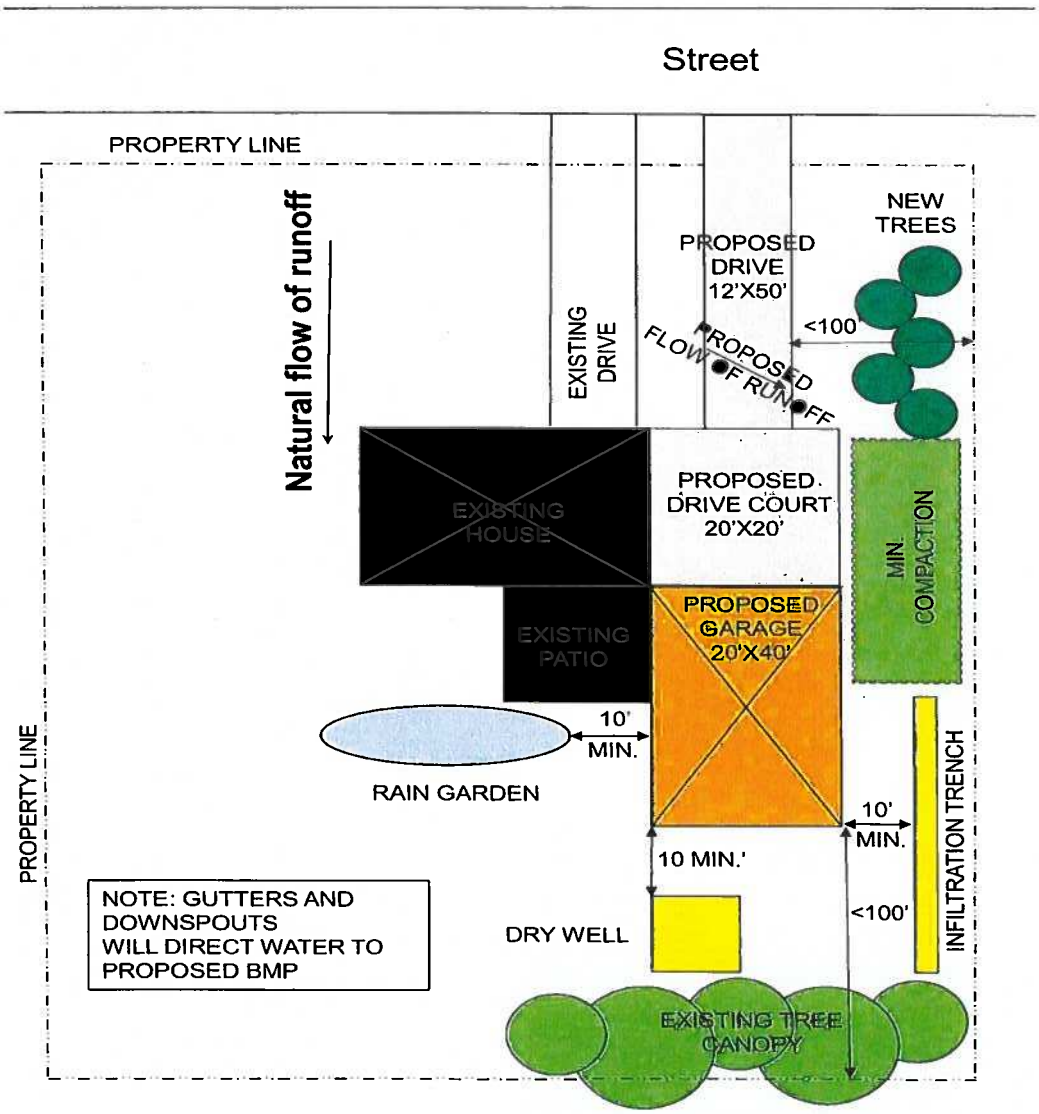
A. What is an applicant required to submit?
All requirements of Section 306 of the City Stormwater Management Ordinance, including:

- A narrative including a brief description of the proposed stormwater facilities and BMPs, types of materials to be used, total square footage of proposed impervious areas, volume calculations;
- A sketch plan showing location of existing and proposed structures, driveways, or other paved areas with approximate surface area in square feet; location of any existing or proposed utilities, especially onsite septic system and/or potable water wells showing proximity to infiltration facilities, location and dimensions of all proposed stormwater facilities and BMPs;
- Infiltration Test Report from a licensed geotechnical engineer. The test locations shall be close to the proposed BMP location.
- Small Project Stormwater Management Worksheet;
- Signed agreement page for installation, operation, maintenance, and inspection of stormwater facilities and BMPs (Refer to Appendix C); and
- Conservation District erosion and sediment control "Adequacy" letter as required by Municipal, County or State regulations.
- Review Fees

B. Determination of Required Control Volume and Sizing Stormwater Facilities and BMPs
By following the simple steps outlined below in the provided example and Small Project Stormwater Management Worksheet, an applicant can determine the runoff volume that is required to be controlled and how to choose the appropriate stormwater facility or BMP to permanently remove the runoff volume from the site. Impervious area calculations must include all proposed areas on the lot proposed to be covered by roof area or pavement which would prevent rain from naturally percolating into the ground, including proposed impervious surfaces such as sidewalks, driveways, parking areas, patios or swimming pools. Sidewalks, driveways or patios that are designed and constructed to allow for infiltration (permeable paving systems) are not included in this calculation.

Small Project Sketch Plan: ***Example***

Project Name: _____ **Date:**_____.
Location:_____.



Step 1: Determine Total Impervious Surfaces and Required Control Volume:

TABLE 1: ***Example***

New Impervious Surface	Dimensions (width x length) (FT)	Area in SF	2" storm Multiplier 0.167	Required Control Volume 2" in CF
Garage Roof	*20'x40'*	*800* SF	0.167	*133* CF
Driveway Court	*20'x20'*	*400* SF	0.167	*67* CF
Driveway	*12'x50'*	*600* SF	0.167	*100* CF
		SF		CF
		SF		CF
		SF		CF

Total Required Control Volume (enter in Table 2): ***300*** **CF**

In Table 1, as in the example above and as shown on the Figure 1 example sketch plan, list each of the new improvements that create impervious area on the property along with their dimensions and total area in square feet in the first three columns. Then, depending on the design storm required by the municipality, multiply the area in square feet by the design storm multiplier to determine required control volume and list in the last column. Add each of the required control volumes together to equal the Total Required Control Volume and enter in Table 2.

Step 2: Sizing the Selected Volume Control BMP(s)

Several Best Management Practices (BMPs) are suitable for small stormwater management projects. However, their application depends on the volume required to be controlled, how much land is available, and the site constraints. Proposed residential development activities can apply both nonstructural and structural BMPs to control the volume of runoff from the site. A number of these different volume control BMPs are described below. Note that Figure 1 is an example of how these BMPs can be utilized on a property to control the total required control volume.

Credit can be taken for non-structural best management practices (BMPs) on a site to reduce the total volume required to be controlled. Credits must follow the requirements listed in this Appendix. Fill out Table 2 with proposed non-structural BMP credits and structural BMP control volumes entered in Tables 6 and 10 to meet the total required control volume.

TABLE 2: ***Example***

Required Control Volume (from **Table 1**)	*300* CF
Non-structural BMP Credit (from Table 6)	*137* CF
Adjusted Required Control Volume (after credits) (from Table 1 - Table 6)	***163*** **CF**
Structural BMP Control Volume (from Table 10)	*202* CF
TOTAL Volume Controlled (from Table 6 +Table 10)	***338*** **CF**

NOTE: Total Volume Controlled shall be **greater than or equal to** Required Control Volume.

Step 3: Choosing and Measuring Non-Structural BMPs

1. Tree Planting and Preservation

Trees and forests reduce stormwater by capturing, storing and evapotranspiring rainfall through their roots and leaves. Tree roots and leaf litter also create soil conditions that promote infiltration of rainwater into the soil and that breakdown excessive nutrients and pollutants. For more information refer to the PA DEP BMP Manual 5.6.3.

Considerations for credit:

- New tree plantings must be at least 6 feet in height and have at least a 2-inch caliper trunk, and the quantity entered in Table 3
- New tree plantings must be native to Pennsylvania. Refer to http://www.dcnr.pa.gov/Conservation/WildPlants/Pages/default.aspx
- Existing trees must have at least a 4" caliper trunk, and must be located within 100 feet of impervious surfaces
- Measure existing tree canopy by determining the square foot area covered within the drip line of the tree(s), and enter the area in Table 4
- Site runoff should be directed via sheet flow to the area(s) of trees being used for volume control

TABLE 3: New Tree(s)

New Trees	Volume Control Multiplier	Tree Quantity	Volume Controlled (CF)
Deciduous	6 CF	2	12 CF
Evergreen	10 CF	3	30 CF

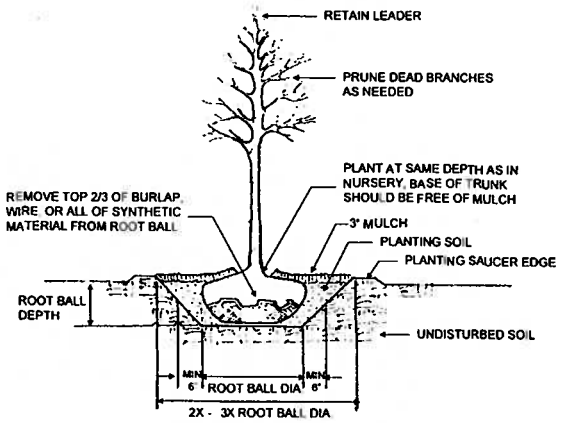
Total Volume Control Credit (new trees) **enter in Table 6**: 42 CF

TABLE 4: Existing Tree Canopy

Existing Tree Canopy (SF)	Distance of Impervious to Canopy (FT)	Volume Control Multiplier	Volume Controlled (CF)
SF	0 FT to 20 FT	0.0833	CF
2000 SF	20 FT to 100 FT	0.0416	83 CF

Total Volume Control Credit (ex. trees) **enter in Table 6**: 83 CF

Remove all synthetic material from the root ball before planting



TREE PLANTING

WCD 2009 N T S

2. Minimize Soil Compaction and Revegetate (lawn or meadow seeding)

When soil is overly compacted during construction it can cause a drastic reduction in the permeability of the soil and rarely is the soil profile completely restored. Runoff from overly compacted vegetated areas can resemble increased runoff from impervious areas. Minimizing soil compaction during the construction process, or restoring and amending compacted soils and revegetating them after construction can greatly increase natural infiltration on a site. For more information refer to the PA DEP BMP Manual 5.6.2 and 5.6.3.

Considerations for credit:

- Area(s) shall not be stripped of topsoil and areas shall be protected from construction vehicles and lay down space with construction fencing or mats. Enter square foot area in Table 5.
- Soil ripping and soil amendments can be used to restore the soils
- Vegetation should be used, especially native plants and meadow mixes as an alternative to lawn

TABLE 5: Minimize Soil Compaction *Example*

Type of stabilization	Area of minimal compaction (SF)	Volume Control Multiplier	Volume Controlled (CF)
Meadow	SF	0.0275	CF
Lawn	*600* SF	0.0208	*12* CF

Total Volume Control Credit (min. compaction) **enter in Table 6**: *12* CF

Plywood sheets protect lawn from compaction

Fencing protects areas from compaction

Step 4: Determining Non-Structural BMP Credit:

TABLE 6: Non-Structural BMP Credit Summary: *Example*

Non- structural BMP	Storage Volume Credit (CF)
New Tree	*42* CF
Existing Tree Canopy	*83* CF
Minimized Soil Compaction	*12* CF
TOTAL (enter in Table 2)	*137* CF

Step 5: Choosing and Sizing Structural BMPs

1. Infiltration Trench

An infiltration trench is a linear stormwater management BMP consisting of a continuously perforated pipe at a minimum slope in a stone-filled trench. During small storm events, infiltration trenches can significantly reduce volume and serve in the removal of fine sediments and pollutants. Runoff is stored in the pipe and between the stones and infiltrates through the bottom of the facility and into the surrounding soil matrix. Runoff should be pretreated using vegetative buffer strips or swales to limit the amount of coarse sediment entering the trench which can clog and render the trench ineffective. In all cases, an infiltration trench should be designed with a positive overflow to a stable outlet point. For more information refer to the PA DEP BMP Manual 6.4.4. Website link:
(http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4673)

Design Considerations:

- Continuously perforated pipe (min 4" diameter) set at a minimum slope (1%) in a stone filled, nearly level-bottomed trench on un-compacted soils.
- The trench width and depth can vary, but it is recommended that infiltration trenches be no wider than four (4) feet, and a minimum of thirty (30) inches and maximum six (6) feet in depth.
- Stone fill should be clean, angular stone, separated from soil layers by four (4) inches of straw (top and bottom) or a nonwoven geotextile (top, sides, and bottom).
- A minimum of 6" of topsoil can be placed over trench and vegetated.
- Cleanouts or inlets should be installed at both ends and at intersections of the infiltration trench and at appropriate intervals to allow access to the perforated pipe.
- The discharge or outlet from the infiltration trench should be safely conveyed to a stable vegetated area, natural watercourse, the curb or gutter line of roadway or existing storm collection/conveyance/control system as applicable.
- Volume of facility = Depth x Width x Length x Void Space of the gravel bed (assume 40%).

Maintenance:

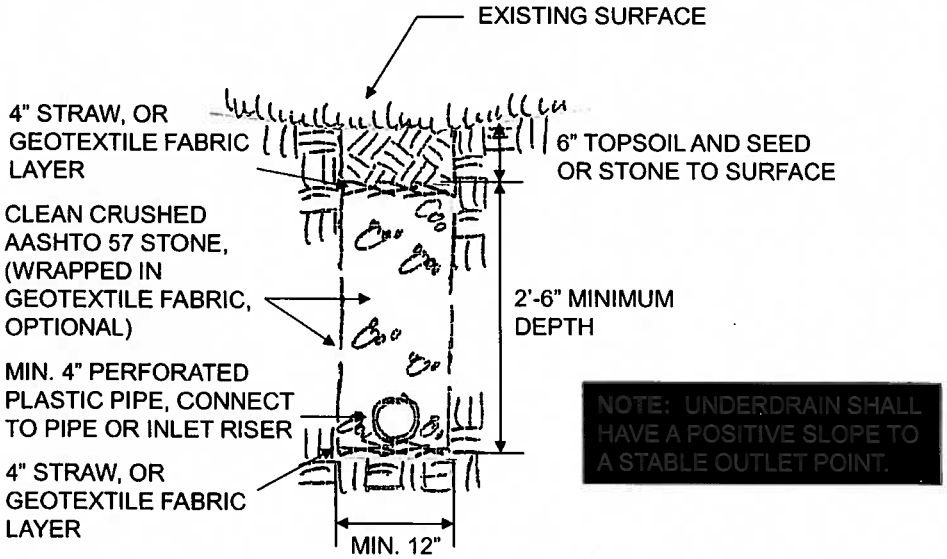
- Cleanouts, catch basins and inlets should be inspected at least two times a year and cleaned out as necessary to maintain function of the system.
- The vegetation along the surface of the infiltration trench should be maintained in good condition and any bare spots should be re-vegetated as soon as possible.
- Vehicles should not be parked or driven on the trench and care should be taken to avoid soil compaction by lawn mowers.

TABLE 7 - Determining size of infiltration trench for volume control: *Example*

Required Control Volume (CF) From Table 2	Storage Volume Divider	Trench Volume (CF)	Trench Depth (FT)	Trench Width (FT)	Trench Length (FT)	Volume Controlled
163	0.4	*413 CF*	*3FT*	*3FT*	*46FT*	*165 CF*

Total Volume Control Credit (Inf. trench) **enter in Table 10**: *165* CF

Infiltration Trench Construction:



Perforated pipe covered with stone and wrapped in fabric

Perforated pipe covered in stone with straw separation layers

2. Rain Garden

A rain garden is a landscaped shallow depression that uses mulch, soil mix, and deep rooted plants to capture, adsorb and infiltrate stormwater runoff from roofs, and pavement. For more information refer to the PA DEP BMP Manual 6.4.5. Website link: (http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4673)

Design considerations:

- A rain garden should be located on nearly level to gently sloping ground and no closer than 10 feet to a building foundation and 25 feet from septic field or wellhead.
- A rain garden can vary in length, width and depth, but should have a ponding depth of 6 to 12 inches, and a total surface depth of no greater than 18 inches.
- Side slopes within the garden should not exceed 3:1 horizontal to vertical.
- The rain garden should be constructed in layers with a (min 4") perforated underdrain in a clean angular stone envelope, separated from soil layers by four (4) inches of straw (top and bottom) or a nonwoven geotextile (top, sides, and bottom), covered with 12 inches to 36 inches of 50-30-20 topsoil-sand-compost mix or as approved by the municipality, and 3 inches of shredded bark mulch or vegetated cover. Soil depth should be determined by plant choices and control volume requirements.
- Vegetation should be deep rooted and tolerant of wet and dry conditions, salts and environmental stress.
- An emergency overflow should be set in the rain garden such as a vertical pipe or inlet box, with basket type grate set even with the ponding depth, below the surrounding ground elevation and connected to the perforated underdrain and an outlet pipe.
- The outlet from the rain garden should be safely conveyed to a stable vegetated area, natural watercourse, the curb or gutter line of roadway or existing storm collection/conveyance/control system as applicable.

Maintenance:

- Cleanouts, catch basins and inlets should be inspected at least two times a year and cleaned out as necessary to maintain function of the system. Detritus should be removed from the rain garden as necessary to prevent clogging of the overflow outlet.
- The vegetation should be maintained in good condition and replaced as necessary. Rain garden plants may need to be watered during dry spells.
- Rain garden should be weeded and shredded bark mulch should be amended as necessary to prevent volunteer weeds.

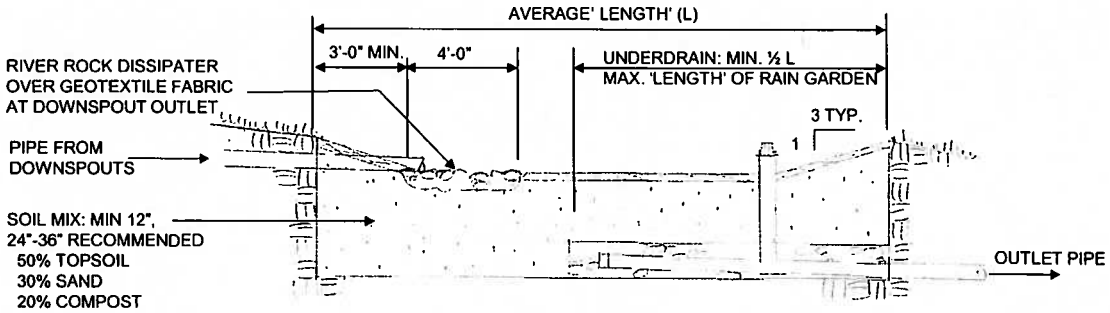
TABLE 8 – Determining Size of Rain Garden for volume control: *Example*

(surface volume, soil storage volume should **each** be greater than or equal to required control volume)

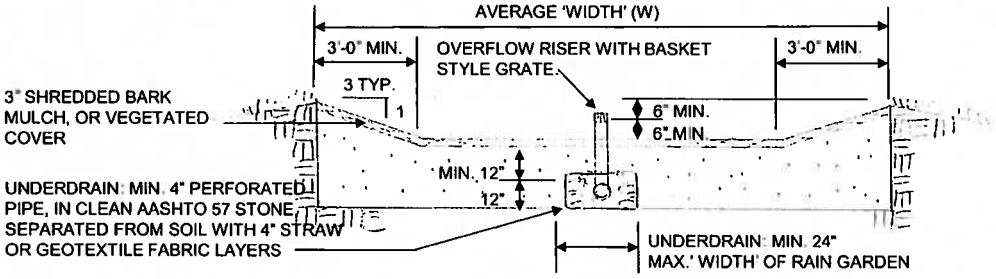
Required Control Volume (CF) from Table 2	Ponding Depth (0.5 FT to 1.0 FT) Divider	Rain Garden Surface Area (SF)	Rain Garden Width (FT)	Rain Garden Length (FT)	Soil Mix Depth (1 FT to 3 FT) Multiplier	Soil Storage Volume Multi-plier	Soil Storage Volume (<= RCV)	Volume Controlled (soil)
165 CF	**0.5**	*330 SF*	*12 FT*	*28FT*	*2 FT*	0.3	*202 CF*	*202 CF*

Total Volume Control Credit (rain garden) **enter in Table 10**: *202* CF

Rain Garden Construction:



SECTION AA



SECTION BB

Mark rain garden location to avoid utilities

Excavate rain garden at least 10' from foundation

Separate underdrain layer from soil with fabric or straw

Use decorative but tolerant plants for seasonal interest

3. Dry Well / Seepage Pit

A dry well or seepage pit is a subsurface storage facility that temporarily stores stormwater runoff from roofs and infiltrates it into the surrounding soils. Roof downspouts connect directly to a dry well or seepage pit that is an excavated pit filled with clean angular stone with an overflow pipe to ensure the system will not be overwhelmed. Prefabricated chamber systems or perforated pipe sections are commercially available for use as dry wells and should be designed, constructed and maintained according to the manufacturer's recommendations. For more information on dry wells and seepage pits refer to the PA DEP BMP Manual 6.4.6. Website link: (http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4673)
Design considerations:

- A dry well / seepage pit should be located on nearly level to gently sloping ground and no closer than 10 feet to a building foundation and 25 feet from septic field or wellhead.
- A dry well / seepage pit can vary in length, width and depth, but should be a minimum depth of 3 feet.
- A downspout should direct water to the surface, a system of perforated pipes should distribute the water throughout the system with an inspection/cleanout pipe to the surface, and an over flow pipe should outlet excess water during intense storms.
- The storage system can be clean angular stone, separated from soil layers by four (4) inches of straw (top and bottom) or a nonwoven geotextile (top, sides, and bottom).
- The outlet from the dry well / seepage pit should be safely conveyed to a stable vegetated area, natural watercourse, the curb or gutter line of roadway or existing storm collection/conveyance/control system as applicable.

Maintenance:

- Drywells and seepage pits should be inspected at least 4 times a year, and after each storm event exceeding 1 inch.
- Remove sediment, debris, detritus and any other waste material from the system as necessary.
- Regularly clean out gutters and downspouts to ensure proper connections and to maintain effectiveness of the system.
- Replace any filter screen or clean out any sump box that may intercept roof runoff as necessary.

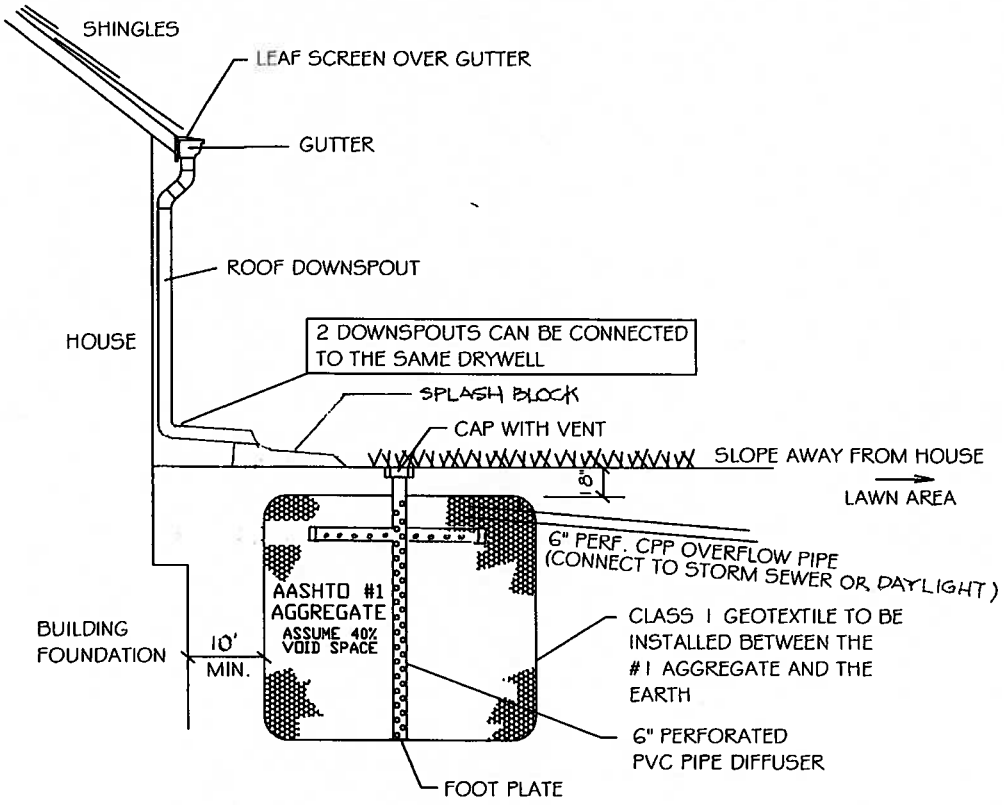
Table 9: Determining Size of Dry Well (stone filled) for volume control: *Example*

Required Control Volume (CF) from Table 2	Storage Volume Divider	Dry Well Volume (CF)	Dry Well Depth (FT)	Dry Well Width (FT)	Dry Well Length (FT)	Volume Controlled (CF)
165	**0.4**	*413 CF*	*5 FT*	*9 FT*	*9.2 FT*	*165 CF*

Total Volume Control Credit (dry well) **enter in Table 10**: *165* CF

NOTE: Applicants are required to utilize the manufacturer's recommendations for sizing proprietary stormwater infiltration systems, and to submit supporting documentation for meeting the required control volume and maintenance requirements.

Dry Well (stone filled) Construction:



Excavate a drywell at least 10' from foundation

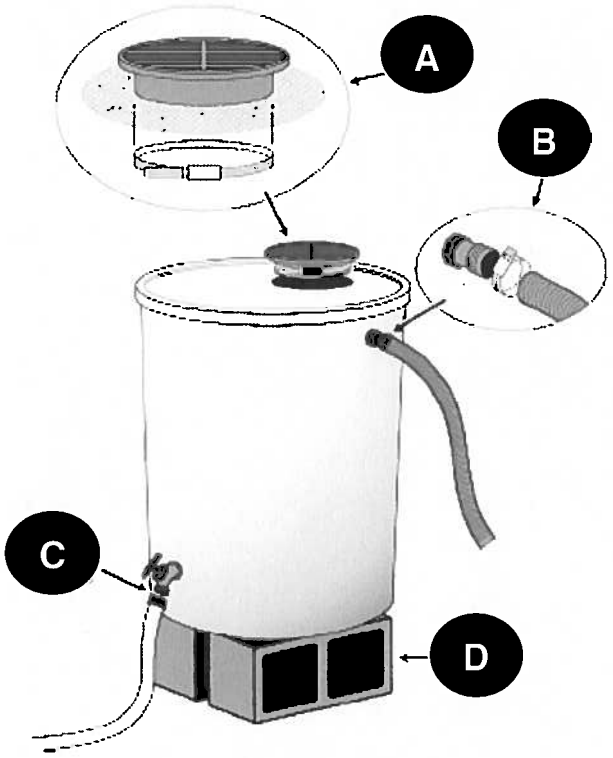
Separate stone fill from soil with straw layers or fabric

A. Alternative BMP Capture and Re-Use (rain barrel / cistern)

Rain barrels and cisterns are above or below ground containers used for temporary storage of rainwater, to be used for landscape irrigation and other similar uses after the rain has ended. A rain barrel or cistern **cannot be used** as a volume control because infiltration is not guaranteed after a storm event, but they are viable alternative method to capture and reuse stormwater.

Considerations:

- Rain barrels and cisterns should be directly connected to a downspout with a mosquito screen
- There should be a means to release the water after a storm event to provide storm volume for the next event
- An overflow, near the top of the container should direct water to a vegetated area away from any structures
- Barrels can be connected in series to provide more volume collection



ANATOMY OF A RAIN BARREL

A – hole in top for downspout connection, with screen for mosquitoes

B – hole on side near top for overflow hose

C – hole on side near

Step 6: Determining BMP Volume Control

TABLE 10: Structural BMP Volume Control Summary:

Structural BMP	Storage Volume (CF)	
Infiltration Trench		CF
Rain Garden	*202*	CF
Dry Well		CF
TOTAL (enter in Table 2)	*202*	CF

Use Small Project Stormwater Management Worksheet

Step 7: Post-Installation Operation and Maintenance Requirements

It is the property owner's responsibility to properly maintain any stormwater facilities and BMPs in accordance with the minimum maintenance requirements listed in this Appendix. The property owner shall submit a signed agreement (refer to Appendix C), to the City for installation, and maintenance of any proposed stormwater management facilities and BMPs. It is also the property owner's responsibility to inform any future owners of the function, operation and maintenance needed for any BMPs on the property prior to the purchase of the property.

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SMALL PROJECT STORMWATER MANAGEMENT WORKSHEET
City of Monessen

Project Name: _____ **Date:** _____.
Location: _____.

TABLE 1: Determination of Control Volume Requirements:

New Impervious Surface	Area in SF	2" storm Multiplier (0.167)	Required Control Volume 2" in CF
	SF		CF
	SF		CF
	SF		CF
	SF		CF
	SF		CF
	SF		CF

Total Required Control Volume (enter in Table 2): _____ **CF**

TABLE 2: Determination of Volume Controlled:

Required Control Volume (Table 1)	CF
Non-structural BMP Credit (Table 6)	CF
Adjusted Required Control Volume (after credits) (Table 1 – Table 6)	**CF**
Structural BMP Control Volume (Table 10)	CF
TOTAL Volume Controlled (Table 6 + Table 10)	**CF**

NOTE: Total Volume Controlled shall be **greater than or equal to** Required Control Volume.

Determining Non-Structural BMP Credit:

TABLE 3: New Tree(s)

New Trees	Volume Control Multiplier	Tree Quantity	Volume Controlled (CF)
Deciduous	6 CF		CF
Evergreen	10 CF		CF

Total Volume Control Credit (new trees) **enter in Table 6**: _____ CF

TABLE 4: Existing Tree Canopy

Existing Tree Canopy (SF)	Distance of Impervious to Canopy (FT)	Volume Control Multiplier	Volume Controlled (CF)
SF	0 FT to 20 FT	0.0833	CF
SF	20 FT to 100 FT	0.0416	CF

Total Volume Control Credit (ex. trees) **enter in Table 6**: _____ CF

TABLE 5: Minimize Soil Compaction

Type of stabilization	Area of minimal compaction (SF)	Volume Control Multiplier	Volume Controlled (CF)
Meadow	SF	0.0275	CF
Lawn	SF	0.0208	CF

Total Volume Control Credit (min. compaction) **enter in Table 6**:_____ CF

TABLE 6: Non-Structural BMP Credit Summary:

Non- structural BMP	Storage Volume Credit (CF)
New Tree	CF
Existing Tree Canopy	CF
Minimized Soil Compaction	CF
TOTAL (enter in Table 2)	**CF**

Sizing of Structural BMPs:

TABLE 7: Infiltration Trench (stone filled)

Required Control Volume (CF)	Storage Volume Divider	Trench Volume (CF)	Trench Depth (FT)	Trench Width (FT)	Trench Length (FT)	Volume Controlled
CF	0.4	CF	FT	FT	FT	CF

Total Volume Control Credit (Inf. trench) **enter in Table 10**: _____ CF

TABLE 8: Rain Garden (surface & soil storage volume should be greater than or equal to required control vol.

Required Control Volume (CF)	Ponding Depth (0.5 FT to 1.0 FT) Divider	Rain Garden Surface Area (SF)	Rain Garden Width (FT)	Rain Garden Length (FT)	Soil Mix Depth (1 FT to 3 FT) Multiplier	Soil Storage Volume Multi-plier	Soil Storage Volume (<= RCV)	Volume Controlled (soil)
CF	FT	SF	FT	FT	FT	0.3	CF	CF

Total Volume Control Credit (rain garden) **enter in Table 10**: _____ CF

TABLE 9: Dry Well (stone filled)

Required Control Volume (CF)	Storage Volume Divider	Dry Well Volume (CF)	Dry Well Depth (FT)	Dry Well Width (FT)	Dry Well Length (FT)	Volume Controlled (CF)
CF	0.4	CF	FT	FT	FT	CF

Total Volume Control Credit (dry well) **enter in Table 10**: _____ CF

TABLE 10: Structural BMP Volume Control Summary:

Structural BMP	Volume Controlled (CF)
Infiltration Trench	CF
Rain Garden	CF
Dry Well	CF
TOTAL (enter in Table 2)	**CF**

Stormwater Management Ordinance

APPENDIX E

City of Monessen

Stormwater Management Plan Checklist

See City's Stormwater Ordinance for complete requirements

Project Name:_____Date:_____

Location:_____Performance District:_____.

Type of Plan:___ Residential, ___Commercial, ___Institutional, ___Industrial, ___Recreational, __Other

Owner: _____Contact Information:_____.

Plan Preparer:_____Contact Information:_____.

Submission Requirements

- Checklist
- Application
- Fees
- Location map (USGS)
- Construction Plans
- Three sets of the PCSM plans and narrative
- E&S plan, as submitted for approval
- Operation and Maintenance Plan and Agreement
- Municipal notification(s)
- Financial guarantees, maintenance fund

General Requirements

Narrative:

- Project description, including CS4/MS4 District, existing and proposed features and improvements, soils and limitations, landform, land cover, drainage areas, utilities, proposed SWM facilities and BMPs, easements and other information required by the [Municipality] stormwater ordinance
- stormwater BMP calculations
- Project schedule
- Construction sequence, including phases if applicable
- Justification for SWM facilities and/or BMPs
- Operation and Maintenance requirements and responsible party(s)

Post-Construction Stormwater Management (PCSM) Plans:

- Location map (USGS) and Index Map
- Plan notes (construction, BMP operation, BMP maintenance, critical inspection milestones, et. al.)
- CS4 or MS4 District
- Existing natural features
- Soils; infiltration test pit locations and profiles, and limitations
- Landform; existing and proposed contours at 2' intervals, or 5' intervals for slopes >15%
- Landscape Plans - existing and proposed land covers~~; improvements~~
- Drainage Area Plans; existing and proposed conditions
- Utilities; existing and proposed

- SWM facilities and BMPs; existing and proposed
- Easements, including offsite easements for drainage
- Stormwater construction details and sections (as applicable)
- Stormwater construction notes and sequence
- Operation and Maintenance requirements and responsible party(s)

APPENDIX F
FEE SCHEDULE

(See Regulated Development Activity Table §302)
Fee Schedule is subject to change by ordinance or resolution of City Council

Exemptions
(Sites with 0 square feet of new impervious area and less than 1 acre of disturbed areas)

1. Application Fee: $100
2. Review Fee: $300 + Subsequent Review Fee (if required): $100/hour
3. Site Inspection Fee: $300.00 per inspection (if required)

No-Harm Evaluations
(Sites 500 square feet or less of new impervious area or 2,500 square feet or less of disturbed area)

1. Application Fee: $100
2. Review Fee: $300 + Subsequent Review Fee (if required): $100/hour
3. Site Inspection Fee: $300.00 per inspection (if required)

Waiver / Modification / Demonstrated Equivalency (Subject to City Approval)
(Sites with less than 1 acre of new impervious area and less than 1 acre of disturbed area)

1. Application Fee: $100
2. Review Fee: $600 + Subsequent Review Fee (if required): $100/hour
3. Site Inspection Fee: $300 per inspection (if required)

Small Project Site Plan
(Sites with 501 to 3,000 square feet of new impervious area or 2,501 to 5,000 square feet of disturbed area)

1. Application Fee: $100
2. Review Fee: $500 + Subsequent Review Fee (if required): $100/hour
3. Site and Construction Inspection Fee: $600.00
4. Post-Construction Inspections Deposit: $1,200 ($300/inspection for 4 inspections)
5. Post-Construction Maintenance Deposit: To be determined according to ordinance (deposit, bond, or nonrefundable payment)

Stormwater Management Site Plan
(Sites with more than 3,000 square feet of new impervious area or more than 5,000 square feet of disturbed area)

1. Application Fee: $500
2. Review Fee: $600 + Subsequent Review Fee (if required): $100/hour
3. Site and Construction Inspection Fee: $1,000.00
4. Post-Construction Inspections Deposit: $1,600 ($400/inspection for 4 inspections)
5. Post-Construction Maintenance Deposit: To be determined according to ordinance (deposit, bond, or nonrefundable payment)

NOTE: All Subsequent Review Fees may be invoiced to the applicant.

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Stormwater Management Ordinance

APPENDIX G

STREETS WITH MUNICIPAL SEPARATE STORM SEWER SYSTEM

MS4 Streets

Grand Boulevard Sewer Shed

Anderson Court
Arch Avenue
Balazia Avenue
Center Drive
Circle Drive
City Park Road
Colonial Drive
Columbus Drive
Coolidge Drive
Crest Drive
Crestcent Drive
Delrose Drive
Euclid Drive
Fairfield Drive
Grand Boulevard (1)
Hale Avenue
Hartung Court
Helen Avenue
High Street
Jackson Drive
Jefferson Drive
Jo Ann Drive
Keystone Drive
Lee Drive
McKinley Avenue
Mellon Avenue
Merando Drive
Monessen Boulevard
Overhill Drive
Park Manor Drive
Pennsylvania Boulevard
Pioneer Drive
Pleasant Drive
Rex Boulevard
Ridge Avenue
Scenery Drive
Shady Drive
Shaw Drive
Skurkay Street
Spring Drive
Stanton Drive
State Road
Surrey Street
Washington Drive
Westmoreland Drive
Willow Drive
Woodcrest Avenue

(1) Grand Boulevard from Pleasant Drive to Parente Boulevard

MS4 Streets

Non-Grand Boulevard Sewer Shed

Street	From	To
Alexander Avenue	Spruce Street	Alley between Walnut Avenue and Maple Avenue
Alley between Schoonmaker Avenue and Donner Avenue	Second Street	Third Street
Summit Avenue	Ella Street	Alexander Avenue
Donner Avenue	First Street	Midway between Third Street and Fourth Street
Donner Avenue	Fourth Street	Midway between Eighth Street and Ninth Street
Fifth Street	Schoonmaker Avenue	Monongahela River
Maple Avenue	Western most 300 feet	
Schoonmaker Avenue	First Street	Second Street
Schoonmaker Avenue	Fourth Street	Sixth Street
Second Street	McKee Avenue	Monongahela River
Walnut Street	Ella Street	Alexander Avenue