Storm Water Management Program

Ohio EPA MS4 Permit Number OHQ000003

2014-2019

December 2016 Update

City of Wilmington, Ohio
Storm Water Management Program

Prepared By:

STRAND ASSOCIATES®

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Executive Summary

The previous National Pollutant Discharge Elimination System (NPDES) permit for authorization for small Municipal Separate Storm Sewer Systems (MS4s) to discharge storm water (NPDES Permit No. OHQ000002) required the development and implementation of a Storm Water Management Program (SWMP) that satisfied the appropriate water quality requirements of Ohio Revised Code (ORC) 6111 and the Clean Water Act. The SWMP document is intended to identify and describe the best management practices (BMPs) selected by the City of Wilmington (City) to meet the requirements of the six minimum control measures (MCMs) described in the permit, why those BMPs were selected in light of local water quality issues, and performance standards for BMP implementation. The six MCMs are:

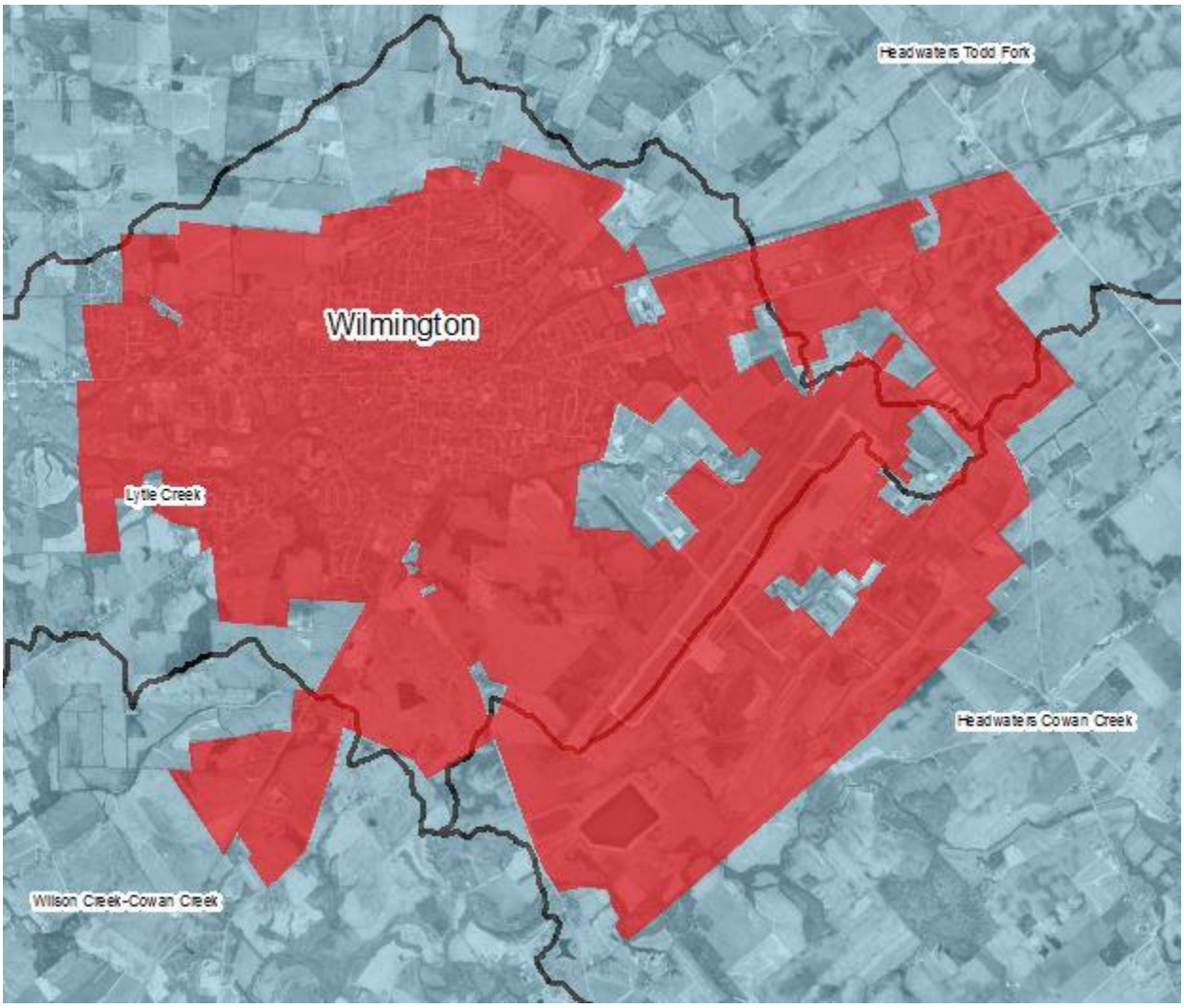
1. Public Education and Outreach on Storm Water Impacts
2. Public Participation / Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Runoff Control
5. Post-Construction Storm Water Management in New Development and Redevelopment
6. Pollution Prevention / Good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

The NPDES small MS4 permit was reissued on September 11, 2014 (NPDES Permit No. OHQ000003), and requires MS4 communities which are renewing coverage under this permit to update their SWMP to be consistent with the permit and submit the updated SWMP to Ohio EPA for review. Permit No. OHQ000003 requires that where applicable, BMPs shall be selected to address U.S. EPA approved Total Maximum Daily Load (TMDL) recommendations for identified water quality problems associated with MS4 discharges within the City of Wilmington's watershed(s).

System Overview and Total Maximum Daily Loads (TMDLs)

The City of Wilmington is located in Clinton County in southwest Ohio. The City has a population of approximately 12,500 people and covers 11 square miles within the Lower Little Miami River watershed. The City is partially contained in four HUC 12 watersheds:

- Headwaters Todd Fork (050902020602)
- Lytle Creek (050902020603)
- Headwaters Cowan Creek (050902020604)
- Wilson Creek-Cowan Creek (050902020605)



City of Wilmington boundary (shown in red)

The Lower Little Miami River Watershed TMDL report was approved by U.S. EPA on March 28, 2011. Information about each of the four sub-watersheds the City drains into is included within the Lower Little Miami River Watershed TMDL report. Information on each of the sub-watersheds and current TMDL status is described in the table below. The TMDL does include specific references to Wilmington's MS4, particularly related to bacteria (*E. coli*) TMDLs at locations along Lytle Creek, Todd Fork, Turtle Creek, and the Lower Little Miami River. Although the ABX Airpark is located within the City limits, storm water runoff from the airport is regulated through its own NDPES discharge permit and has specific waste load allocations that are included in the Lower Little Miami River Watershed TMDL report. The requirements of the ABX Airpark are separate from the City of Wilmington MS4.

Watershed	TMDL	Applicability and Cause/Source*
Headwaters Todd Fork (50902020602)	None	N/A
Lytle Creek (050902020603)	E coli TMDL Nutrient TMDL Sediment TMDL DO/COD TMDL	E coli TMDL attributed to the WWTP, sanitary sewer overflows, urban runoff, and agricultural runoff. Sediment and nutrient impairment at RM 9.3, Townsend Field. **Cause:** sedimentation, nutrient/eutrophication biological indicators. **Source:** New Construction and permitted industrial/commercial storm water discharge. Non-attainment. Sediment and nutrient impairment at RM 7.01, Lytle Creek at Nelson Road. **Cause:** sedimentation, nutrient/eutrophication biological indicators. **Source:** permitted industrial/commercial storm water discharge. Partial attainment. Sediment and nutrient impairment at RM 5.95, Lytle Creek discharge from WWTP. **Cause**: sedimentation, nutrient/eutrophication biological indicators. **Source:** municipal point source discharges and permitted industrial/commercial storm water discharge. Partial attainment.
Headwaters Cowan Creek (050902020604)	Sediment TMDL DO/COD TMDL	N/A
Wilson Creek-Cowan Creek (050902020605)	None	N/A

*RM = River Mile

Table of Organization or Organizational Chart

The City of Wilmington's MS4 program is implemented through various departments within the City as well as in coordination with various other agencies. The following organizational chart provides a visual representation of how these entities work collaboratively to accomplish the goals outlined in this Storm Water Management Program.

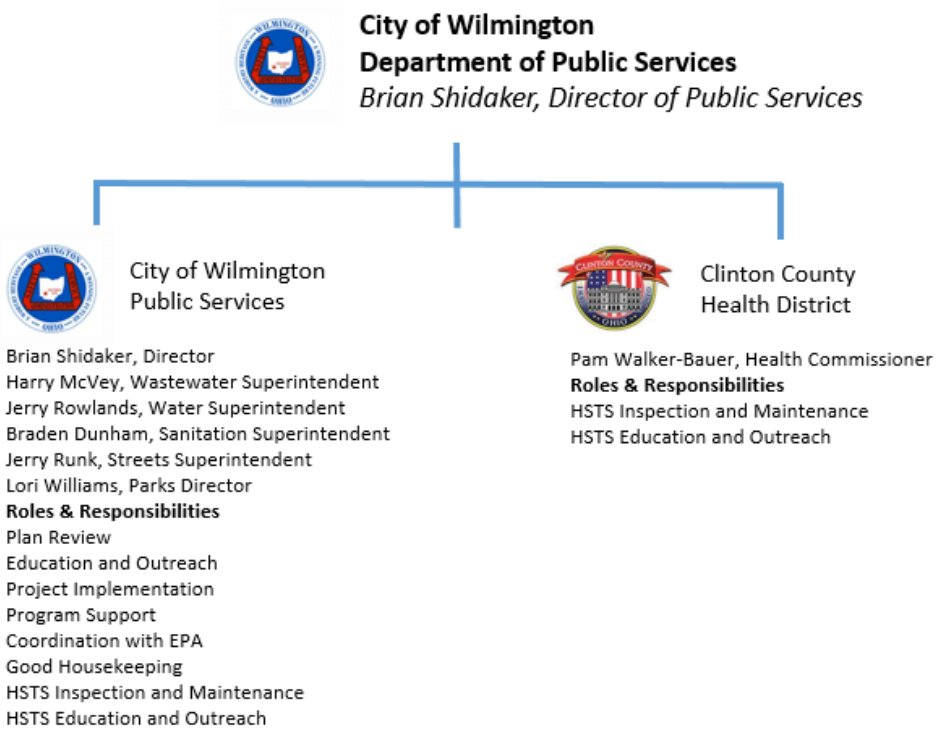


Table of Organization		
Primary Point of Contact: Eric Green, Storm Water Program Manager *Roles and Responsibilities: Program Oversight*		
Entity	**Name, Title**	**Roles and Responsibilities**
Public Services Department	Brian Shidaker, Service Director Harry McVey, Wastewater Superintendent Jerry Rowlands, Water Superintendent Braden Dunham, Sanitation Superintendent Jerry Runk, Streets Superintendent Lori Williams, Parks Director Michelle Horner, Building and Zoning	Project Implementation; Education and Outreach; Coordination with EPA; Coordination with County SWCD; Plan Review, HSTS Education and Outreach; HSTS Inspection and Maintenance
Clinton County Health District	Pam Walker-Bauer, Health Commissioner	HSTS Education and Outreach; HSTS Inspection and Maintenance

Minimum Control Measure 1: Public Education and Outreach on Storm Water Impacts

Minimum Control Measure 1:
Public Education and Outreach on Storm Water Impacts

The City of Wilmington MS4 permit requires public education and outreach efforts to do the following:

> ***Shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.***

Performance Standards: *Program shall include more than 1 mechanism and at least five different storm water themes or messages over the permit term, at least one theme shall be targeted to the development community, and reach at least 50% of the population.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 1. The City has the legal authority to implement all identified BMPs.

BMP Type: Media Communications		
Description of BMP: The City will provide media communications, via the City's website, to promote education and outreach of the storm water program and related issues. At least one storm water themes will be added to the website on an annual basis, including a theme targeted at the development community.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Document the date and information added each time the storm water page on the City's website is updated on an annual basis.	Annually	City of Wilmington Public Services Department
Rationale for BMP: Online communication is a growing way to provide current information to people of a wide variety of demographics. **Target Audience:** General public. **How BMP addresses TMDL:** A website link to Ohio EPA's TMDL program will be added, as well as a link to the Lower Little Miami River TMDL. Several of themes used for media communications will be focused on water quality impairments identified in the Lower Little Miami River TMDL, including for bacteria.		

BMP Type: Storm Water Management and Erosion Control Pamphlets		
Description of BMP: The City will provide various storm water management and erosion control pamphlets at municipal offices and local events.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Document the number of pamphlets distributed to the development community.	Annually	City of Wilmington Public Services Department
Rationale for BMPs: Repeatedly providing written information on this topic to residents and developers will remind them of the importance of proper watershed management practices and construction site erosion protection and sediment control (EPSC). **Target Audience:** General public, Home-builders/development community. **How BMP addresses TMDL:** Repeatedly providing written information on this topic to residents will provide avenues for education on various pollutants throughout the service area and create awareness for stakeholder involvement. Developers will reduce the occurrence of construction site EPSC violations, and reduce sediment loads from active construction sites. Water quality impairments due to bacteria and sediment were identified in the Lower Little Miami River TMDL.		

MCM 1 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. How you will inform individuals and households about the steps they can take to reduce storm water pollution?

See above tables for information on pamphlets and website updates. These methods will help inform individuals and households about steps they can take to reduce storm water pollution. The five themes that will be included as part of the MCM are as follows;

- Nutrient Pollution
- Erosion Control and Sediment Control (Targeted to the Development Community)
- Residential Storm Water Management
- Litter and Trash
- Hazardous Waste Disposal

ii. How you plan to inform individuals and groups on how to become involved in the storm water program (with activities such as local stream restoration activities).

Website updates and pamphlets will be utilized to notify individuals about upcoming and reoccurring opportunities to get involved.

iii. Who are the target audiences for your education program who are likely to have significant storm water impacts (including commercial, industrial and institutional entities) and why those target audiences were selected.

For the City of Wilmington, target audiences can generally be divided into three groups: (1) Development Community who is responsible for erosion control and detention to reduce sediment loads, (2) Homeowners who can reduce their residential runoff pollution and (3) Businesses who have parking lot urban runoff.

iv. What are the target pollutant sources your public education program is designed to address?

Bacteria pollution (*E.coli*) is one of the main pollutants of concern as outlined in the TMDL, so this will be a key focus of the education programs, along with general urban runoff pollution (trash, oil, pet waste etc.) and nutrient pollution.

v. What is your outreach strategy, including the mechanisms (e.g., printed brochures, newspapers, media, workshops, etc.) you will use to reach your target audiences, and how many people do you expect to reach by your outreach strategy over the permit term?

See above tables for detailed strategies to reach people through printed media and digital media. All residents, businesses, and developers will have direct access to updated information via the City's website. Several times a year residents are referred to the City's stormwater program website from their utility bills. In this manner, the City anticipates that at least 50% of the target audience will be reached during the permit term.

vi. Who (person or department) is responsible for overall management and implementation of your storm water public education and outreach program and, if different, who is responsible for each of the BMPs identified for this program?

See above tables for responsible party for each listed BMP. Generally, this responsibility is held by the City of Wilmington Public Services Department.

vii. How will you evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs?

The measureable goals were selected to be specific, measureable, achievable and realistic.

Minimum Control Measure 2: Public Involvement/Participation

Minimum Control Measure 2:
Public Involvement/Participation

The City of Wilmington MS4 permit requires the public involvement/participation efforts to do the following:

> ***Shall comply with State and local public notice requirements and satisfy this minimum control measure's minimum performance standards when implementing a public involvement/participation program.***

Performance Standards: *Include, at a minimum, five public involvement activities over the permit term.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 2. The City has the legal authority to implement all identified BMPs.

BMP Type: Various Watershed Improvement Activities		
Description of BMP: The City will work with local volunteer groups and public organizations to provide targeted watershed improvement initiatives utilizing public involvement.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of participants of the activity	3 activities per permit cycle	City of Wilmington Public Services Department
Rationale for BMP: Engaging the public in watershed activities provides opportunity for hands-on education and outreach while also providing tangible benefit throughout the watershed. **Target Audience:** General public, citizen/student groups. **How BMP addresses TMDL:** Water quality benefits anticipated through various watershed improvement activities.		

BMP Type: Wastewater Treatment Plant Tours		
Description of BMP: The City will continue to provide tours of its Wastewater Treatment Plant. A portion of the tour is focused on storm water management and associated impacts.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of tours provided	2 tours per permit cycle	City of Wilmington Public Services Department
Rationale for BMP: Involving the general public in learning the various processes of a wastewater treatment plant and how it relates to their local streams and rivers. **Target Audience:** Students, general public. **How BMP addresses TMDL:** The general public can better understand and involved in how wastewater treatments plants reduce bacteria loads to local streams.		

MCM 2 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. Have you involved the public in the development and submittal of your NOI and SWMP description?

A draft of this storm water management plan was posted on the City's website for public review and comment.

ii. What is your plan to actively involve the public in the development and implementation of your program?

A draft of this storm water management plan was posted on the City's website for public review and comment. The proposed SWMP includes various opportunities for the public to get involved in the implementation of the SWMP.

iii. Who are the target audiences for your public involvement program, including a description of the types of ethnic and economic groups engaged. You are encouraged to actively involve all potentially affected stakeholder groups, including commercial and industrial businesses, trade associations, environmental groups, homeowner's associations, and educational organizations, among others.

The target audiences are listed in the above tables and include volunteer groups, students, and the general public. By casting a broad net there is no bias towards specific ethnic and economic groups.

iv. What are the types of public involvement activities included in your program. Where appropriate, consider the following types of public involvement activities: citizen representatives on a storm water management panel, public hearings, working with citizen volunteers willing to educate others about the program, volunteer monitoring or stream/beach clean-up activities.

As outlined in the above tables, we have included wastewater treatment plant tours and education, and various watershed activities through local volunteer groups such as educational stream walks, tree planting, stream clean-up, etc.

v. Who (person or department) is responsible for the overall management and implementation of your storm water public involvement/participation program and, if different, who is responsible for each of the BMPs identified for this program.

See above tables.

vi. How will you evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

The measureable goals were selected to be specific, measurable, achievable and realistic.

Minimum Control Measure 3:
Illicit Discharge Detection and Elimination

Minimum Control Measure 3:
Illicit Discharge Detection and Elimination

The City of Wilmington MS4 permit requires the illicit discharge detection and elimination efforts to do the following:

Shall develop, implement and enforce a program to detect and eliminate illicit discharges.

Shall develop a comprehensive storm water system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls; MS4 system (catch basins, pipes, ditches, detention/retention ponds, post construction water quality BMPs), and private water quality BMPs.

Shall submit to EPA a list of HSTSs including addresses; a map of HSTS's including type and size of conduits that receive discharges.

Shall effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges including enforcement procedures.

Shall development and implement a plan to detect and eliminate non-storm water discharges, including illegal dumping and HSTS. At a minimum this includes:

- ***i. Working with applicable agencies and/or departments to identify HSTS's that could be connected to central sewers, and require connection for any HSTS not operating properly.***
- ***ii. Working with the health department to develop a proactive O&M program.***
- ***iii. Actively investigating contamination sources during dry weather screening.***
- ***iv. Evaluating the planned/possible installation of sewers in areas with high densities of HSTS's.***

Shall informs public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

Shall address the following categories of non-storm water discharges or flows if identified as significant contributors of pollutants: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, and discharges or flows from fire-fighting activities.

Performance Standards: *Initial dry weather screening of all storm water outfalls over the permit term. Establish priorities and goals for long-term system wide surveillance of MS4. System map shall be updated as needed.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 3. The City the legal authority to implement all identified BMPs.

BMP: Update System Mapping		
Description of BMP: Update system GIS mapping to include all information required in the permit.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of features mapped.	Ongoing	City of Wilmington Public Services Department
Number of HSTS's and receiving ditches mapped.	Ongoing	City of Wilmington Public Services Department
Rationale for BMP: Updating the storm system mapping to include additional assets will create a more accurate representation of the entire storm system network. **How BMP addresses TMDL:** No direct tie to the pollutants identified in the TMDL, but having accurate mapping will be useful to identify sources of illicit discharges to the MS4.		

BMP: Identifying Illicit Discharges		
Description of BMP: Identifying and eliminating illicit discharges systematically.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Identify number of HSTS systems that could feasibly be connected to sewers.	Ongoing	City of Wilmington Public Services Department
Number of HSTS's identified.	Ongoing – all known HSTS's are inspected on a case by case basis. Only four (4) known HSTS's within City limits.	City of Wilmington Public Services Department and Clinton County Health District
Number of outfalls with dry weather screening completed.	Ongoing – all known outfalls will be screened once over the permit term.	City of Wilmington Public Services Department
Rationale for BMP: Identifying illicit discharges allows for these to be addressed systematically. **How BMP addresses TMDL:** Identifying and eliminating illicit discharges will improve water quality, and could help achieve specific bacteria (*E. coli*) loads included in the Lower Little Miami River TMDL.		

BMP: Eliminating Illicit Discharges		
Description of BMP: Eliminating illicit discharges systematically.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Review and revise existing ordinance prohibiting illicit discharges including enforcement procedures.	Prior to end of permit cycle	City of Wilmington Public Services Department
Number of HSTS owners connected to sewer.	Ongoing	City of Wilmington Public Services Department
Number of illicit discharge reports resolved.	Ongoing – all reports of illicit discharges will be investigated and resolved.	City of Wilmington Public Services Department
Rationale for BMP: Eliminating illicit discharges results in a successful program. **How BMP addresses TMDL:** Identifying and eliminating illicit discharges will improve water quality, and could help achieve specific bacteria (*E. coli*) loads included in the Lower Little Miami River TMDL.		

MCM 3 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. How you will develop a comprehensive storm sewer map showing the location of all outfalls and the names and location of all receiving waters. Describe the sources of information you used for the maps, and how you plan to verify the outfall locations with field surveys. If already completed, describe how you developed this map. Also, describe how your map will be regularly updated.

The City will conduct GIS mapping updates throughout the City based on best available field data and record data. The City will utilize additional City resources to keep GIS shapefiles updated as changes are needed.

ii. The mechanism (ordinance or other regulatory mechanism) you will use to effectively prohibit illicit discharges into the MS4 and why you chose that mechanism. If you need to develop this mechanism, describe your plan and a schedule to do so. If your ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with your program.

The City put in place ordinance 2455 (Chapter 922.02, which passed on 11-1-1984) and 3198 (Chapter 922.19, which passed on 5-2-1991) to prohibit illicit discharges. The City's ordinance also includes penalties for non-compliance, as part of ordinance 3234 (Chapter 922.50, which passed on 9-5-1991). The relevant sections are included as an appendix to this document. These provisions will be reviewed and potentially updated as needed by the end of the permit term.

iii. Your plan to ensure through appropriate enforcement procedures and actions that your illicit discharge ordinance (or other regulatory mechanism) is implemented.

The City's ordinance 3234 (Chapter 922.50, which passed on 9-5-1991) includes penalties for non-compliance – this is the enforcement mechanism. The relevant sections are included as an appendix to this document. This provision will be reviewed and potentially updated as needed by the end of the permit term.

iv. Your plan to detect and address illicit discharges to your system, including discharges from illegal dumping and spills. Your plan shall include dry weather field screening for non-storm water flows and Ohio EPA recommends field tests of selected chemical parameters as indicators of discharge sources. You shall describe the mechanisms and strategies you will implement to ensure outfalls which have previously been dry-weather screened will not have future illicit connections. Your plan shall also address on-site sewage disposal systems (including failing on-lot HSTSs and off-lot discharging HSTSs) that flow into your storm drainage system. Your description shall address the following, at a minimum:

1. **Procedures for locating priority areas which include areas with higher likelihood of illicit connections (e.g., areas with older sanitary sewer lines, for example) or ambient sampling to locate impacted reaches;**

   Priority areas will be located by considering areas with concentrated HSTS's, areas with concentrated resident complaints/reports, and areas of the system noted by City staff as a possible concern. However, there are only four (4) known HSTS's within the City limits, listed below;
   - 380 North Nelson Avenue
   - 456 North Nelson Avenue
   - 1110/1180 Fife Avenue (shared HSTS)
   - 1150 Fife Avenue

2. **Procedures for tracing the source of an illicit discharge, including the specific techniques you will use to detect the location of the source;**

   City crews have the ability to provide general field investigations, CCTV inspection, and dye testing, to help locate the source of illicit discharges. Water quality sampling may also be utilized where needed. Available GIS information will be utilized to augment field efforts in identification of the source of illicit discharges.

3. **Procedures for removing the source of the illicit discharge.**

   Illicit discharges will be resolved on a case by case basis given the unique nature of each situation.

4. **Procedures for program evaluation and assessment.**

   Mapping of all outfall screening and issues will be prepared to serve as a tool during evaluation and assessment of the program.

v. How you plan to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. Include in your description how this plan will coordinate with your public education

minimum measure and your pollution prevention/good housekeeping minimum measure programs.

The hazards of illicit discharges will be a topic that is covered under the media communications BMPs described under MCM 1 earlier in this document.

vi. Who is responsible for overall management and implementation of your storm water illicit discharge detection and elimination program and, if different, who is responsible for each of the BMPs identified for this program.

Responsibilities are listed in the previous tables.

vii. How you will evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

The measureable goals were selected to be specific, measureable, achievable and realistic.

Minimum Control Measure 4: Construction Site Storm Water Runoff Control

Minimum Control Measure 4:
Construction Site Storm Water Runoff Control

The City of Wilmington MS4 permit requires the construction site storm water runoff control efforts to do the following:

> ***Shall develop, implement, and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre including projects less than one acre that are part of a larger common plan of development. At a minimum this includes:***
>
> ***i.*** ***Ordinance or other requirements for construction site operators to require erosion and sediment controls as well as sanctions to ensure compliance.***
>
> ***ii.*** ***Requirements for construction site operators to implement appropriate erosion and sediment control BMPs.***
>
> ***iii.*** ***Requirements for construction site operators to control waste at the construction site that may cause adverse impacts to water quality.***
>
> ***iv.*** ***Procedures for storm water pollution prevention plan review which incorporates consideration of potential water quality impacts.***
>
> ***v.*** ***Procedures for the receipt and consideration of information submitted by the public.***
>
> ***vi.*** ***Procedures for site inspection and enforcement of control measures.***

Performance Standards: *Program shall include a pre-construction SWPPP for all land disturbances greater than 1 acre. Applicable sites shall be initially inspected. Frequency of follow up shall be monthly unless otherwise documented.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 4. The City has the legal authority to implement all identified BMPs.

BMP: Tools and Program Updates		
Description of BMP: The City will review existing relevant ordinances and update them as needed to meet the requirements of this MCM. The City will focus on tools and program updates to meet this MCM.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Review and revise procedures for- construction site inspection program.	Prior to end of permit cycle.	City of Wilmington Public Services Department
Review and revise as necessary existing ordinances and sanctions. (Chapter 922)	Prior to end of permit cycle.	City of Wilmington Public Services Department
Review and revise existing storm water regulations.	Prior to end of permit cycle.	City of Wilmington Public Services Department
Develop a checklist for SWPPP plan review by City staff.	Prior to end of permit cycle.	City of Wilmington Public Services Department
Rationale for BMP: Standardized tools and updated program regulations will aid the City in the successful implementation of this MCM. **How BMP addresses TMDL:** Sediment is a pollutant of concern identified in the Lower Little Miami River TMDL. Updating the construction site tools and requirements will provide benefit through sediment load reduction.		

BMP: Construction Site Runoff Control Implementation		
Description of BMP: This BMP includes implementation of the program in accordance with the ordinances and regulations already in place.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of construction site inspections completed.	As needed	City of Wilmington Public Services Department
Number of SWPPP's reviewed as part of plan review process.	Ongoing	City of Wilmington Public Services Department
Number of construction runoff issues reported.	Ongoing	City of Wilmington Public Services Department
Rationale for BMP: Implementation protocol and follow through are critical on active construction sites. **How BMP addresses TMDL:** Given the emphasis on sediment loadings in the TMDL, this BMP is very important and will address the TMDL by providing oversight of construction sites.		

MCM 4 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. The mechanism (ordinance or other regulatory mechanism) you will use to require erosion and sediment controls at construction sites and why you chose that mechanism. If you need to develop this mechanism, describe your plan and a schedule to do so. If your ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with your SWMP description.

The City passed ordinance 3587 (Section 1125.03) on 1-10-2000 to address sediment and erosion control. The City also maintains a storm water manual which details requirements for contractors to follow for site erosion control. These provisions will be reviewed and revised as necessary.

ii. Your plan to ensure compliance with your erosion and sediment control regulatory mechanism, including the sanctions and enforcement mechanisms you will use to ensure compliance. Describe your procedures for when you will use certain sanctions. Possible sanctions include non-monetary penalties (such as a stop work orders), fines, bonding requirements, and/or permit denials for non-compliance.

The City's regulations include penalties for non-compliance. These provisions will be reviewed and revised as necessary.

iii. Your requirements for construction site operators to implement appropriate erosion and sediment control BMPs and control waste at construction sites that may cause adverse impacts to water quality. Such waste includes, but is not limited to, discarded building materials, concrete truck washouts, chemicals, litter, and sanitary waste.

All requirements are detailed in the City's regulations as well as the storm water manual. These provisions will be reviewed and revised as necessary.

iv. Your procedures for pre-construction storm water pollution prevention plan review which incorporate consideration of potential water quality impacts. Describe the estimated number of sites that will have pre-construction site plans reviewed.

All proposed construction sites in the City are obligated to go through the plan review process which includes the development. As part of this permit cycle, these provisions will be reviewed and revised as necessary and a checklist will be developed to further standardize the plan review process.

v. Your procedures for receipt and consideration of information submitted by the public. Consider coordinating this requirement with your public education program.

Information submitted by the public related to construction erosion issues are inspected by the City of Wilmington staff, and the City coordinates with the contractor to resolve the issue.

vi. Your procedures for site inspection and enforcement of control measures, including how you will prioritize sites for inspection.

The City will develop and implement a construction site inspection program during this permit cycle.

vii. Who is responsible for overall management and implementation of your construction site storm water control program and, if different, who is responsible for each of the BMPs identified for this program.

The City of Wilmington Public Services Department is responsible for the review and approval of plan submittals including SWPPPs.

viii. Describe how you will evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

The measurable goals were selected to be specific, measurable, achievable and realistic.

Minimum Control Measure 5: Post-Construction Storm Water Management in New and Redevelopment

Minimum Control Measure 5:
Post-Construction Storm Water Management in New and Redevelopment

The City of Wilmington MS4 permit requires the post-construction storm water management in new and redevelopment efforts to do the following:

> ***Shall develop, implement, and enforce a program to address storm water runoff from new development and 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.***
>
> ***Shall develop and implement strategies which include a combination of structural and/or non-structural BMPs.***
>
> ***Shall use an ordinance, or other regulatory mechanism, to address post-construction runoff from new and redevelopment.***
>
> ***Shall ensure adequate long-term operation and maintenance of BMPs.***

Performance Standards: *Post construction SWMP shall include a pre-construction SWPPP review of all projects which disturb greater than 1 acre. Site shall be inspected to ensure controls are installed per requirements. Program shall ensure long term O&M plans are developed and agreements are in place.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 5. The City has the legal authority to implement all identified BMPs.

BMP: Tools and Program Update		
Description of BMP: The City will review and revise its storm water manual and ordinances to include post construction BMP considerations.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Review existing ordinances and guidelines and update as needed.	Prior to end of permit cycle	City of Wilmington Public Services Department
Develop and implement post construction BMP inspection program.	Prior to end of permit cycle	City of Wilmington Public Services Department
Rationale for BMP: Standardized tools and updated program objectives will aid the City in the successful implementation of this MCM. **How BMP addresses TMDL:** Sediment is a pollutant of concern identified in the Lower Little Miami River TMDL. Updating the construction site tools and requirements will provide benefit through sediment load reduction.		

BMP: Post-Construction Runoff Control Implementation		
Description of BMP: The City will review and update its storm water manual and appropriate ordinances to continue implementation of its post-construction program.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of privately owned post-construction BMPs installed.	Annually following forthcoming revisions to existing ordinances by the end of the permit term.	City of Wilmington Public Services Department
Number of maintenance agreements put in place.	Annually following forthcoming revisions to existing ordinances by the end of the permit term.	City of Wilmington Public Services Department
Number of post-construction BMPs inspected.	Annually following forthcoming revisions to existing ordinances by the end of the permit term.	City of Wilmington Public Services Department
Rationale for BMP: Management and implementation of the post construction program is the key to the program being successful and impactful. **How BMP addresses TMDL:** Program management and implementation will keep the designers and contractors accountable for the proper design and installation of BMPs which will provide water quality benefits to help meet the TMDLs.		

MCM 5 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. Your program to address storm water runoff from new development and redevelopment projects. Include in this description any specific priority areas for this program.

The City of Wilmington Storm Water Management Regulations will be revised to require all new and redevelopment projects that disturb greater than 1 acre to meet the City's storm water management and EPSC specifications.

ii. How your program will be specifically tailored for your local community, minimize water quality impacts, and attempt to maintain pre-development runoff conditions.

The City will revise the current ordinances and Storm Water Management Manual to require the designer/contractor to submit a detailed storm water management plan including post-construction storm water control techniques with sizing calculations and drawings. The City will then review the submittal and coordinate with the designer/contractor to address any deficiencies. This site-specific review by City of Wilmington and extended staff is the component that allows the program to be specifically tailored for the local community.

iii. Any non-structural BMPs in your program, including, as appropriate: green infrastructure storm water management techniques, policies and ordinances that provide requirements and standards to direct growth to identified areas, protect

sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure; education programs for developers and the public about project designs that minimize water quality impacts; and other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, and source control measures often thought of as good housekeeping, preventive maintenance and spill prevention.

The City is currently reviewing their current policies and ordinances for non-structural BMPs within the City's Storm Water Management Manual.

iv. Any structural BMPs in your program, including, as appropriate: green infrastructure storm water management techniques, storage practices such as wet ponds and extended-detention outlet structures; filtration practices such as grassed swales, bioretention cells, sand filters and filter strips; and infiltration practices such as infiltration basins and infiltration trenches.

The City is currently reviewing their current policies and ordinances for structural BMPs within the City's Storm Water Management Manual.

v. The mechanisms (ordinance or other regulatory mechanisms) you will use to address post-construction runoff from new developments and redevelopments and why you chose the mechanism(s). If you need to develop a mechanism, describe your plan and a schedule to do so. If your ordinance or regulatory mechanism is already developed, include a copy of the relevant sections with your program.

The City has in place ordinances that reference the City's Storm Water Management Manual as the governing document regarding post construction runoff from new and redevelopment. This ordinance is enforceable in two ways one with fees in place for non-compliance and secondly with the City's ability to deny approval of plans for developments that do not submit appropriate documentation of their plan to address runoff. These provisions will be reviewed and revised as part of this permit cycle.

vi. How you will ensure the long-term operation and maintenance (O&M) of your selected BMPs. Options to help ensure that future O&M responsibilities are clearly identified include an agreement between you and another party such as the post-development landowners or regional authorities.

The City's will review and revise the existing ordinances and regulations to address long-term O&M of selected BMPs. These provisions will be revised as part of this permit cycle.

vii. Who is responsible for overall management and implementation of your post-construction SWMP and, if different, who is responsible for each of the BMPs identified for this program.

See above tables for responsible parties.

viii. How you will evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

The measureable goals were selected to be specific, measureable, achievable and realistic.

Minimum Control Measure 6: Pollution Prevention/Good Housekeeping For Municipal Operations

Minimum Control Measure 6:
Pollution Prevention/Good Housekeeping for Municipal Operations

The City of Wilmington MS4 permit requires the pollution prevention/good housekeeping for municipal operations efforts to do the following:

> ***Shall develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.***
>
> ***Using training materials available from OEPA or other organizations, program shall include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance,***
>
> ***Shall include a list of industrial facilities owned and operated by the City. SWP3 plans shall be developed and implemented as required.***

Performance Standards: *Include at minimum an annual employee training. Operation and maintenance shall include appropriate documented procedures, controls, maintenance schedules, and record keeping.*

The following table outlines the best management practices (BMPs) selected by the City of Wilmington to accomplish MCM 6. The City has the legal authority to implement all identified BMPs.

BMP: Employee Training		
Description of BMP: Utilize available storm water training materials including online webinars, storm water conferences, educational seminars, etc. to train City staff on storm water related issues.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Number of person-hours completed each year.	Ongoing	City of Wilmington Public Services Department
In-house employee storm water good housekeeping training.	Annually	City of Wilmington Public Services Department
Rationale for BMP: Training City staff is a very important aspect of reducing pollution from municipal facilities. Using materials and training already available results in efficiencies and consistent messaging. **How BMP addresses TMDL:** Reducing pollution from municipal facilities is consistent with addressing pollutant loads described in the Lower Little Miami River TMDL.		

BMP: Operation and Maintenance Program		
Description of BMP: Continue implementation of City's Operation and Maintenance Program for Municipal facilities.		
Measureable Goal	**Implementation Schedule (Interim Milestones) and Frequency**	**Responsible Party**
Feet of storm sewers cleaned, number of catch basins cleaned.	Ongoing	City of Wilmington Public Services Department
Amount of road salt, calcium and brine applied to roads.	Seasonal	City of Wilmington Public Services Department
Hours logged in street sweepers.	Ongoing	City of Wilmington Public Services Department
Daily procedures being followed – vehicle washing, automotive fluid disposal, illegal dumping, etc.	Ongoing	City of Wilmington Public Services Department
Rationale for BMP: Implementing the O&M plans is critical for reducing pollution from municipal facilities. **How BMP addresses TMDL:** Reducing pollution from municipal facilities is consistent with addressing pollutant loads described in the Lower Little Miami River TMDL.		

MCM 6 Decision Process – Rationale Statement

The rationale statement shall include the following information, at a minimum:

i. Your operation and maintenance program to prevent or reduce pollutant runoff from your municipal operations. Your program shall specifically list the municipal operations that are impacted by this operation and maintenance program.

The City's O&M program is divided among various departments including Parks, Public Services, Transportation, Police, and Fire – each department has a customized O&M program that is suited to their specific facilities.

ii. Any government employee training program you will use to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. Describe any existing, available materials you plan to use. Describe how this training program will be coordinated with the outreach programs developed for the public information minimum measure and the illicit discharge minimum measure.

See above table for information related to the employee training program. This program will be coordinated with Illicit Discharge and Public Outreach programs to the extent that the information provided in all programs will be consistent and will be cross-referenced as appropriate.

iii. Your program description shall specifically address the following areas:

1. **Maintenance activities, maintenance schedules, and long-term inspection procedures for controls to reduce floatables and other pollutants to your MS4.**

   These items are handled in an ongoing manner by each department so they can be easily customized and adapted as appropriate.

2. **Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas you operate. A description of the materials used for roadway and municipal parking lot winterization (use of salt, sand, bottom ash, etc. or combination thereof), associated application rates, and the rationale for the selected application rates shall be included. Also identify controls or practices to be used for reducing or eliminating discharges of pollutants resulting from roadway and municipal parking lot winterization activities.**

   The City currently implements street sweeping, snow and ice removal, leaf collection, catch basin cleaning, pipe cleaning, as well as general good housekeeping at municipal facilities.

3. **Procedures for the proper disposal of waste removed from your MS4 and your municipal operations, including dredge spoil, accumulated sediments, floatables, and other debris.**

   The City utilizes proper disposal methods to dispose of wastes from the MS4. Street debris is dewatered and hauled to the City owned land fill. Automotive waste is disposed of at off-site commercial facilities.

4. **Procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices.**

   These procedures are covered in the City's storm water manual.

iv. Who is responsible for overall management and implementation of your pollution prevention/good housekeeping program and, if different, who is responsible for each of the BMPs identified for this program.

See above tables for responsible party for each BMP.

v. How you will evaluate the success of this minimum measure, including how you selected the measurable goals for each of the BMPs.

The measureable goals were selected to be specific, measureable, achievable and realistic.

Appendix A

Ordinance 2455 - Private Sewage Disposal Systems

Appendix A - Chapter 9, Streets and Public Service Code - Section 22, Utilities Sewer Use Regulations - Part 06, Private Sewage Disposal Systems

(a) Except as provided, no person shall construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for private sewage disposal.

(b) Where a public sanitary sewer is not accessible to a premises, the building sewer shall be connected to a private sewage disposal system according to the following provisions:

(1) The type, capabilities, location and layout of a private sewage disposal system shall be under the control of and comply with all requirements of the Health Officer and all recommendations of the OEPA.

(2) No person shall directly or indirectly discharge holding tank wastes into a public sanitary sewer unless a permit is first secured from the Director. Unless allowed by the terms and conditions of the permit, a separate permit shall be secured for each separate discharge. This permit shall specify the location of the discharge, the time of day the discharge is to occur, the volume of the discharge and the wastewater constituents and characteristics. If a permit is granted for discharge of such wastes into a public sanitary sewer, the person shall pay the applicable user charges and fees and shall meet any other conditions required by the Director.

(3) The owner shall, at his expense, operate and maintain the private sewage disposal facilities in a sanitary manner at all times.

(4) When a sanitary sewer is constructed so as to be accessible to premises, any privy, privy tank, privy vault or sewage disposal equipment on such premises shall be abandoned, and connections shall be made directly to the sewer. Such connections may be laid across or through the structures to be abandoned if due care is exercised in providing the connection with adequate support. Any abandoned septic tanks, cesspools, or similar private sewage disposal facilities and equipment shall be thoroughly cleaned, disinfected and filled to the surface of the surrounding ground with suitable material, but not with rubbish, garbage or other unsanitary or offensive material. Abandoned chemical privy tanks shall be thoroughly cleaned, disinfected and removed. It shall be the duty of the Health Officer to see that abandoned privy vaults, chemical privy tanks and sewage disposal equipment are properly cleaned, disinfected and filled or removed.

(Ord. 2455. Passed 11-1-84.)

Appendix B

Ordinance 3587 - Surface Runoff and Storm Drainage

Appendix B - Chapter 11, Planning and Zoning Code - Section 25, Subdivision Regulation Minimum Design Standards and Requirements - Part 03, Surface Runoff and Storm Drainage

(a) Outlets. No subdivision shall be approved by the Planning Commission unless there is an adequate outlet for stormwater as determined by the City Engineer. Generally, it will be necessary to pipe storm water to an adequate watercourse, stream or existing storm system which has the capacity to accommodate the flow, or to utilize acceptable on-site water retention methods adequate to minimize excessive off-site stormwater flows. Street rights-of-way shall generally be located and designed so that all storm sewers and other drainage facilities can be and are located within such street rights-of-way.

(b) Preservation of Natural Drainage Courses. No natural drainage course shall be altered and no fill, buildings or structures shall be located unless provision is made for the flow of surface water, in a manner satisfactory to the City Engineer. An easement shall be provided on both sides of the existing surface drainage course adequate for the purpose of fixture widening, deepening, enclosing or otherwise improving said drainage course. If such drainage course crosses private property, easements must be obtained by the developer for construction and immature maintenance. These easements shall be shown on the Construction Plans. A copy of the recorded easement shall be shown on the final plat or incorporated by reference to the volume and page number of the recorded easement.

(c) Grades. All surface areas not covered by a hard surface improvement or stone shall be seeded or sodded and sloped to drain according to the following:

(1) Grass areas shall have a minimum slope or grade of eight-tenths percent (.8%).

(2) Grass areas next to buildings shall slope away from the building at not less than five percent (5%) for a minimum of ten feet.

(3) Ditches or swales in grassed areas with a bottom slope or grade between two percent (2%) and seven percent (7%) shall be sodded.

(4) Ditches or swales with a bottom slope or grade greater than seven percent (7%) shall have a paved or stone gutter as required by the City Engineer.

(d) Submittal of Drainage Data. Information and data pertaining to water volumes and velocities for all watersheds entering and on the property, along with calculations to show that proposed drainage improvements will adequately address such flows, shall be submitted to the City Engineer along with required construction plans. Storm drainage systems shall generally be designed so that the peak rate of stormwater runoff from the site after development does not exceed the peak rate of runoff before development.

(e) Culverts. All culverts utilized in subdivisions shall have the appropriate headwalls and other structures and improvements to protect the facility, as determined by the City Engineer.

(Ord. 3587. Passed 7-20-95.)

Appendix C

Ordinance 4905 - Administration

Appendix C - Chapter 13, Building Code - Section 07, Flood Damage Prevention - Part 03, Administration

(a) Designation of the Floodplain Administrator. The Mayor is hereby appointed to administer and implement these regulations and is referred to herein as the Floodplain Administrator.

(b) Duties and Responsibilities of the Floodplain Administrator. The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:

(1) Evaluate applications for permits to develop in special flood hazard areas.

(2) Interpret floodplain boundaries and provide flood hazard and flood protection elevation information.

(3) Issue permits to develop in special flood hazard areas when the provisions of these regulations have been met, or refuse to issue the same in the event of noncompliance.

(4) Inspect buildings and lands to determine whether any violations of these regulations have been committed.

(5) Make and permanently keep all records for public inspection necessary for the administration of these regulations including Flood Insurance Rate Maps, Letters of Map Amendment and Revision, records of issuance and denial of permits to develop in special flood hazard areas, determinations of whether development is in or out of special flood hazard areas for the purpose of issuing floodplain development permits, elevation certificates, variances, and records of enforcement actions taken for violations of these regulations.

(6) Enforce the provisions of these regulations.

(7) Provide information, testimony, or other evidence as needed during variance hearings.

(8) Coordinate map maintenance activities and FEMA follow-up.

(9) Conduct substantial damage determinations to determine whether existing structures, damaged from any source and in special flood hazard areas identified by FEMA, must meet the development standards of these regulations.

(c) Floodplain Development Permits. It shall be unlawful for any person to begin construction or other development activity including but not limited to filling; grading; construction; alteration, remodeling, or expanding any structure; or alteration of any watercourse wholly within, partially within or in contact with any identified special flood hazard area, as established in Section 1307.01(f), until a floodplain development permit is obtained from the Floodplain Administrator. Such floodplain development permit shall show that the proposed development activity is in conformity with the provisions of these regulations. No such permit shall be issued by the Floodplain Administrator until the requirements of these regulations have been met.

(d) Application Required. An application for a floodplain development permit shall be required for all development activities located wholly within, partially within, or in contact with an identified special flood hazard area. Such application shall be made by the owner of the property or his/her authorized agent, herein referred to as the applicant, prior to the actual commencement of such construction on a form furnished for that purpose. Where it is unclear whether a development site is in a special flood hazard area, the Floodplain Administrator may require an application for a floodplain development permit to determine the development's location. Such applications shall include, but not be limited to:

(1) Site plans drawn to scale showing the nature, location, dimensions, and topography of the area in question; the location of existing or proposed

structures, fill, storage of materials, drainage facilities, and the location of the foregoing.

(2) Elevation of the existing, natural ground where structures are proposed.

(3) Elevation of the lowest floor, including basement, of all proposed structures.

(4) Such other material and information as may be requested by the Floodplain Administrator to determine conformance with, and provide enforcement of these regulations.

(5) Technical analyses conducted by the appropriate design professional registered in the State of Ohio and submitted with an application for a floodplain development permit when applicable:

A. Floodproofing certification for non-residential floodproofed structure as required in Section 1307.04(e).

B. Certification that fully enclosed areas below the lowest floor of a structure not meeting the design requirements of Section 1307.04(d)(5) are designed to automatically equalize hydrostatic flood forces.

C. Description of any watercourse alteration or relocation that the flood carrying capacity of the watercourse will not be diminished, and maintenance assurances as required in Section 1307.04(i)(3).

D. A hydrologic and hydraulic analysis demonstrating that the cumulative effect of proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood by more than one foot in special flood hazard areas where the Federal Emergency Management Agency has provided base flood elevations but no floodway as required by Section 1307.04(i)(2).

E. A hydrologic and hydraulic engineering analysis showing impact of any development on flood heights in an identified floodway as required by Section 1307.04(i)(1).

F. Generation of base flood elevation(s) for subdivision and large-scale developments as required by Section 1307.04(c). and generation of the 500-year flood elevation for critical development as required by Section 1307.04(k).

G. Volumetric calculations demonstrating compensatory storage has been provided as required by Section 1307.04(i)(4).

(6) The fee for submission of an application for a Development Permit for Flood Plain Damage Prevention is hereby set at fifty dollars ($50.00).

(e) Review and Approval of a Floodplain Development Permit Application.

(1) Review.

A. After receipt of a complete application for a Development Permit for Flood Damage Prevention, the City Floodplain Administrator shall review the application to ensure that the standards of these regulations have been met. No floodplain development permit application shall be reviewed until all information required in subsection (d) hereof has been received by the Floodplain Administrator.

B. The Floodplain Administrator shall review all floodplain development permit applications to assure that all necessary permits have been received from those federal, state or local governmental agencies from which prior approval is required. The applicant shall be responsible for obtaining such permits as required including permits issued by the U.S. Army Corps of Engineers under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, and the Ohio Environmental Protection Agency under Section 401 of the Clean Water Act.

(2) Approval. Within thirty (30) days after the receipt of a complete application, the Floodplain Administrator shall either approve or disapprove the application. If an application is approved, a floodplain development permit shall be issued. All floodplain development permits shall be conditional upon the commencement of work within one (1) year. A floodplain development permit shall expire one (1) year after issuance unless the permitted activity has been substantially begun and is thereafter pursued to completion.

(f) Inspections. The Floodplain Administrator shall make periodic inspections at appropriate times throughout the period of construction in order to monitor compliance with permit conditions.

(g) Post-Construction Certifications Required. The following as-built certifications are required after a floodplain development permit has been issued:

(1) For new or substantially improved residential structures, or nonresidential structures that have been elevated, the applicant shall have a Federal Emergency Management Agency Elevation Certificate completed by a registered surveyor to record as-built elevation data. For elevated structures in Zone A and Zone AO areas without a base flood elevation, the elevation certificate may be completed by the property owner or owner's representative.

(2) For all development activities subject to the standards of subsection (j)(1) hereof, a Letter of Map Revision.

(h) Revoking a Floodplain Development Permit. A floodplain development permit shall be revocable, if among other things, the actual development activity does not conform to the terms of the application and permit granted thereon. In the event of the revocation of a permit, an appeal may be taken to the Board of Zoning Appeals in accordance with Section 1307.05.

(i) Exemption from Filing a Development Permit. An application for a floodplain development permit shall not be required for:

(1) Maintenance work such as roofing, painting, and basement sealing, or for small nonstructural development activities (except for filling and grading) valued at less than $5,000.

(2) Development activities in an existing or proposed manufactured home park that are under the authority of the Ohio Department of Health and subject to the flood damage reduction provisions of the Ohio Administrative Code Section 3701.

(3) Major utility facilities permitted by the Ohio Power Siting Board under Section 4906 of the Ohio Revised Code.

(4) Hazardous waste disposal facilities permitted by the Hazardous Waste Siting Board under Section 3734 of the Ohio Revised Code.

(5) Development activities undertaken by a federal agency and which are subject to Federal Executive Order 11988 - Floodplain Management. Any proposed action exempt from filing for a floodplain development permit is also exempt from the standards of these regulations.

(j) Map Maintenance Activities. To meet National Flood Insurance Program minimum requirements to have flood data reviewed and approved by FEMA, and to ensure that City of Wilmington's flood maps, studies and other data identified in Section 1307.01(f) accurately represent flooding conditions so appropriate floodplain management criteria are based on current data, the following map maintenance activities are identified:

(1) Requirement to Submit New Technical Data.

A. For all development proposals that impact floodway delineations or base flood elevations, the community shall ensure that technical data reflecting such changes be submitted to FEMA within six months of the date such information becomes available. These development proposals include:

1. Floodway encroachments that increase or decrease base flood elevations or alter floodway boundaries;
2. Fill sites to be used for the placement of proposed structures where the applicant desires to remove the site from the special flood hazard area;
3. Alteration of watercourses that result in a relocation or elimination of the special flood hazard area, including the placement of culverts; and
4. Subdivision or large scale development proposals requiring the establishment of base flood elevations in accordance with Section 1307.04(c).

B. It is the responsibility of the applicant to have technical data, required in accordance with subsection (j)(1) hereof, prepared in a format required for a Conditional Letter of Map Revision or Letter of Map Revision, and submitted to FEMA. Submittal and processing fees for these map revisions shall be the responsibility of the applicant.

C. The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:
1. Proposed floodway encroachments that increase the base flood elevation; and
2. Proposed development which increases the base flood elevation by more than one foot in areas where FEMA has provided base flood elevations but no floodway.

D. Floodplain development permits issued by the Floodplain Administrator shall be conditioned upon the applicant obtaining a Letter of Map Revision from FEMA for any development proposal subject to subsection (j)(1)A.1.

(2) Right to Submit New Technical Data. The Floodplain Administrator may request changes to any of the information shown on an effective map that does not impact floodplain or floodway delineations or base flood elevations, such as labeling or planimetric details. Such a submission shall include appropriate supporting documentation made in writing by the Mayor of City of Wilmington, and may be submitted at any time.

(3) Annexation/Detachment. Upon occurrence, the Floodplain Administrator shall notify FEMA in writing whenever the boundaries of the City of Wilmington have been modified by annexation or the community has assumed authority over an area, or no longer has authority to adopt and enforce floodplain management regulations for a particular area. In order that the City of Wilmington's Flood Insurance Rate Map accurately represent the City of Wilmington boundaries, include within such notification a copy of a map of the City of Wilmington suitable for reproduction, clearly showing the new corporate limits or the new area for which the City of Wilmington has assumed or relinquished floodplain management regulatory authority.

(k) Data Use and Flood Map Interpretation. The following guidelines shall apply to the use and interpretation of maps and other data showing areas of special flood hazard:

(1) In areas where FEMA has not identified special flood hazard areas, or in FEMA identified special flood hazard areas where base flood elevation and floodway data have not been identified, the Floodplain Administrator shall review and reasonably utilize any other flood hazard data available from a federal, state, or other source.

(2) Base flood elevations and floodway boundaries produced on FEMA flood maps and studies shall take precedence over base flood elevations and floodway boundaries by any other source that reflect a reduced floodway width and/or lower base flood elevations. Other sources of data, showing increased base flood elevations and/or larger floodway areas than are shown on FEMA flood maps and studies, shall be reasonably used by the Floodplain Administrator.

(3) When Preliminary Flood Insurance Rate Maps and / or Flood Insurance Study have been provided by FEMA:

A. Upon the issuance of a Letter of Final Determination by the FEMA, the preliminary flood hazard data shall be used and replace all previously existing flood hazard data provided from FEMA for the purposes of administering these regulations.

B. Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall only be required where no base flood elevations and /or floodway areas exist or where the preliminary base flood elevations or floodway area exceed the base flood elevations and/or floodway widths in existing flood hazard data provided from FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

(4) The Floodplain Administrator shall make interpretations, where needed, as to the exact location of the flood boundaries and areas of special flood hazard. A person contesting the determination of the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 1307.05.

(5) Where a map boundary showing an area of special flood hazard and field elevations disagree, the base flood elevations or flood protection elevations (as found on an elevation profile, floodway data table, established high water marks, etc.) shall prevail.

(l) Substantial Damage Determinations.

(1) Damages to structures may result from a variety of causes including flood, tornado, wind, heavy snow, fire, etc. After such a damage event, the Floodplain Administrator shall:

A. Determine whether damaged structures are located in special flood hazard areas;

B. Conduct substantial damage determinations for damaged structures located in special flood hazard areas; and

C. Make reasonable attempt to notify owners of substantially damaged structures of the need to obtain a floodplain development permit prior to repair, rehabilitation, or reconstruction.

(2) Additionally, the Floodplain Administrator may implement other measures to assist with the substantial damage determination and subsequent repair process. These measures include issuing press releases, public service announcements, and other public information materials related to the floodplain development permits and repair of damaged structures; coordinating with other federal, state, and local agencies to assist with substantial damage determinations; providing owners of damaged structures materials and other information related to the proper repair of damaged structures in special flood hazard areas; and assist owners of substantially damaged structures with Increased Cost of Compliance insurance claims.

(Ord. 4905. Passed 3-18-10.)

Appendix D

Ordinance 4905 - Use and Development Standards for Flood Hazard Reduction

Appendix D - Chapter 13, Building Code - Section 07, Flood Damage Prevention - Part 04, Use and Development Standards for Flood Hazard Reduction

The following use and development standards apply to development wholly within, partially within, or in contact with any special flood hazard area as established in Section 1307.01(f) or 1307.03(k)(1):

(a) Use Regulations.

(1) Permitted Uses. All uses not otherwise prohibited in this section or any other applicable land use regulation adopted by City of Wilmington are allowed provided they meet the provisions of these regulations.

(2) Prohibited Uses.

A. Private water supply systems in all special flood hazard areas identified by FEMA, permitted under Section 3701 of the Ohio Revised Code.

B. Infectious waste treatment facilities in all special flood hazard areas, permitted under Section 3734 of the Ohio Revised Code.

C. Storage or processing of materials that are hazardous, flammable, or explosive in the identified special flood hazard area.

D. Storage of material or equipment that, in time of flooding, could become buoyant and pose an obstruction to flow in identified floodway areas.

E. Storage or processing of hazardous, flammable, or explosive materials in special flood hazard areas.

F. Critical development in special flood hazard areas.

G. New construction of any residential or nonresidential structures in floodway areas or in setback areas identified in Wilmington Ordinance #1169.

(b) Water and Wastewater Systems. The following standards apply to all water supply, sanitary sewerage and waste disposal systems not otherwise regulated by the Ohio Revised Code:

(1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems;

(2) New and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters; and,

(3) On-site waste disposal systems shall be located to avoid impairment to or contamination from them during flooding.

(c) Subdivisions and Large Developments.

(1) All subdivision proposals shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations;

(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

(4) In all areas of special flood hazard where base flood elevation data are not available, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates base flood elevations for all major (platted) subdivision proposals and other proposed developments at least 50 lots or 5 acres, whichever is less;

(5) The applicant shall meet the requirement to submit technical data to FEMA in Section 1307.03(j)(1)A.4. when a hydrologic and hydraulic analysis is completed that generates base flood elevations as required by Section 1307.04(c)(4).

(6) All preliminary plans for platted subdivisions shall identify the flood hazard area and the elevation of the base flood.

(7) All final subdivision plats will provide the boundary of the special flood hazard area, the floodway boundary, and base flood elevations.

(8) In platted subdivisions, all proposed lots or parcels that will be future building sites shall have a minimum buildable area outside the natural (non-filled) 1% chance annual floodplain. The buildable area shall be large enough to accommodate any primary structure and associated structures such as sheds, barns, swimming pools, detached garages, on-site sewage disposal systems, and water supply wells, if applicable.

(9) Approval shall not be given for streets within a subdivision, which would be subject to flooding. All street surfaces must be located at or above the base flood elevation.

(d) Residential Structures.

(1) New construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Where a structure, including its foundation members, is elevated on fill to or above the base flood elevation, the requirements for anchoring and construction materials resistant to flood damage are satisfied.

(2) New construction and substantial improvements shall be constructed with methods and materials resistant to flood damage.

(3) New construction and substantial improvements shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or elevated so as to prevent water from entering or accumulating within the components during conditions of flooding.

(4) New construction and substantial improvement of any residential structure, including manufactured homes, shall have the lowest floor, including basement, elevated to or above the flood protection elevation. Where flood protection elevation data are not available the structure shall have the lowest floor, including basement, elevated at least two feet above the highest adjacent natural grade. Support structures and other foundation members shall be certified by a registered professional engineer or architect as designed in accordance with ASCE 24, Flood Resistant Design and Construction.

(5) New construction and substantial improvements, including manufactured homes, that do not have basements and that are elevated to the flood protection elevation using pilings, columns, posts, or solid foundation perimeter walls with openings sufficient to allow unimpeded movement of flood waters may have an enclosure below the lowest floor provided the enclosure meets the following standards:

A. Be used only for the parking of vehicles, building access, or storage; and

B. Be designed and certified by a registered professional engineer or architect to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters; or

C. Have a minimum of two openings on different walls having a total net area not less than one square inch for every square foot of enclosed area, and the bottom of all such openings being no higher than one foot above grade. The openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

(6) Manufactured homes shall be affixed to a permanent foundation and anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Methods of anchoring may include, but are not limited to, use of over the top or frame ties to ground anchors.

(7) Repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and is the minimum necessary to preserve the historic character and design of the structure, shall be exempt from the development standards of subsection (d) hereof.

(8) Each new residential site shall have direct access to a walkway, driveway, or roadway whose surface elevation is not less than the flood protection elevation and such escape route shall lead directly out of the floodplain area.

(e) Nonresidential Structures.

(1) New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall meet the requirements of subsections (d)(1) - (3) and (5) - (8).

(2) New construction and substantial improvement of any commercial, industrial or other non-residential structure shall either have the lowest floor, including basement, elevated to or above the level of the flood protection elevation; or, together with attendant utility and sanitary facilities, shall meet all of the following standards:

A. Be dry floodproofed so that the structure is watertight with walls substantially impermeable to the passage of water to the level of the flood protection elevation;

B. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and,

C. Be certified by a registered professional engineer or architect, through the use of a Federal Emergency Management Agency Floodproofing Certificate, that the design and methods of construction are in accordance with subsections (e)(2)A. and B.

(3) Where flood protection elevation data are not available, the structure shall have the lowest floor, including basement, elevated at least two feet above the highest adjacent natural grade.

(f) Accessory Structures. Relief to the elevation or dry floodproofing standards may be granted for accessory structures containing no more than 600 square feet. Such structures must meet the following standards:

(1) They shall not be used for human habitation;

(2) They shall be constructed of flood resistant materials;

(3) They shall be constructed and placed on the lot to offer the minimum resistance to the flow of floodwaters;

(4) They shall be firmly anchored to prevent flotation;

(5) Service facilities such as electrical and heating equipment shall be elevated or floodproofed to or above the level of the flood protection elevation; and

(6) They shall meet the opening requirements of subsection (d)(5)C.;

(g) Recreational Vehicles. Recreational vehicles must meet at least one of the following standards:

(1) They shall not be located on sites in special flood hazard areas for more than 180 days, or

(2) They must be fully licensed and ready for highway use, or

(3) They must meet all standards of subsection (d) hereof.

(h) Above Ground Gas or Liquid Storage Tanks. All above ground gas or liquid storage tanks shall be anchored to prevent flotation or lateral movement resulting from hydrodynamic and hydrostatic loads.

(i) Assurance of Flood Carrying Capacity. Pursuant to the purpose and methods of reducing flood damage stated in these regulations, the following additional standards are adopted to assure that the reduction of the flood carrying capacity of watercourses is minimized:

(1) Development in Floodways.

A. In floodway areas, development shall cause no increase in flood levels during the occurrence of the base flood discharge. Prior to issuance of a floodplain development permit, the applicant must submit a hydrologic and hydraulic analysis, conducted by a registered professional engineer, demonstrating that the proposed development would not result in any increase in the base flood elevation; or

B. Development in floodway areas causing increases in the base flood elevation may be permitted provided all of the following are completed by the applicant:

1. Meet the requirements to submit technical data in Section 1307.03(j)(1);
2. An evaluation of alternatives, which would not result in increased base flood elevations and an explanation why these alternatives are not feasible;
3. Certification that no structures are located in areas that would be impacted by the increased base flood elevation;
4. Documentation of individual legal notices to all impacted property owners within and outside the community, explaining the impact of the proposed action on their property; and
5. Concurrence of the Mayor of City of Wilmington and the Chief Executive Officer of any other communities impacted by the proposed actions.

(2) Development in Riverine Areas with Base Flood Elevations but No Floodways.

A. In riverine special flood hazard areas identified by FEMA where base flood elevation data are provided but no floodways have been designated, the cumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the base flood elevation more than 1.0 (one) foot at any point. Prior to issuance of a floodplain development permit, the applicant must submit a hydrologic and hydraulic analysis, conducted by a registered professional engineer, demonstrating that this standard has been met; or,

B. Development in riverine special flood hazard areas identified by FEMA where base flood elevation data are provided but no floodways have been designated causing more than one foot increase in the base flood elevation may be permitted provided all of the following are completed by the applicant:

1. An evaluation of alternatives which would result in an increase of one foot or less of the base flood elevation and an explanation why these alternatives are not feasible;
2. Subsection (i)(1)B., items 1. and 3. - 5.

(3) Alterations of a Watercourse. For the purpose of these regulations, a watercourse is altered when any change occurs within its banks. The extent of the banks shall be established by a field determination of the "bankfull stage."

The field determination of "bankfull stage" shall be based on methods presented in Chapter 7 of the USDA Forest Service General Technical Report RM-245, Stream Channel Reference Sites: An Illustrated Guide to Field Technique or other applicable publication available from a Federal, State, or other authoritative source. For all proposed developments that alter a watercourse, the following standards apply:

A. The bankfull flood carrying capacity of the altered or relocated portion of the watercourse shall not be diminished. Prior to the issuance of a floodplain development permit, the applicant must submit a description of the extent to which any watercourse will be altered or relocated as a result of the proposed development, and certification by a registered professional engineer that the bankfull flood carrying capacity of the watercourse will not be diminished.

B. Adjacent communities, the U.S. Army Corps of Engineers, and the Ohio Department of Natural Resources, Division of Water, must be notified prior to any alteration or relocation of a watercourse. Evidence of such notification must be submitted to the Federal Emergency Management Agency.

C. The applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of said watercourse so that the flood carrying capacity will not be diminished. The Floodplain Administrator may require the permit holder to enter into an agreement with City of Wilmington specifying the maintenance responsibilities. If an agreement is required, it shall be made a condition of the floodplain development permit.

D. The applicant shall meet the requirements to submit technical data in Section 1307.03(j)(1)A.3. when an alteration of a watercourse results in the relocation or elimination of the special flood hazard area, including the placement of culverts.

(4) Compensatory Storage Required for Fill. Fill within the area of special flood hazard shall result in no net loss of natural floodplain storage. The volume of the loss of floodwater storage due to filling in the special flood hazard area shall be offset by providing an equal volume of flood storage by excavation or other compensatory measures at or adjacent to the development site.

(j) Fill -- Use and Development Standards for Flood Hazard Reduction. The following standards apply to all fill activities in special flood hazard areas:

(1) Fill sites, upon which structures will be constructed or placed, must be compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test method or an acceptable equivalent method,

(2) Fill slopes shall not be steeper than one foot vertical to two feet horizontal,

(3) Adequate protection against erosion and scour is provided for fill slopes. When expected velocities during the occurrence of the base flood of five feet per second armoring with stone or rock protection shall be provided. When expected velocities during the base flood are five feet per second or less protection shall be provided by covering them with vegetative cover.

(4) Fill shall be composed of clean granular or earthen material.

(k) Critical Development (See Section 1307.02 for a Definition of Critical Developments). Critical Developments shall be elevated to the 500-year flood elevation or be elevated to the highest known historical flood elevation (where records are available), whichever is greater. If no data exists establishing the 500-year flood elevation or the highest known

historical flood elevation, the applicant shall provide a hydrologic and hydraulic engineering analysis that generates 500-year flood elevation data.

(Ord. 4905. Passed 3-18-10.)

Appendix E

Storm Water Management and Erosion Control Specifications