

CITY OF WOOSTER
SITE DEVELOPMENT AND IMPROVEMENT MANUAL
Created 2007

DIVISION OF ENGINEERING
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SECTION 1

REGULATIONS OVERVIEW

101 PURPOSE AND OBJECTIVES

A. The purpose of this Manual is to minimize damage to property and promote, and maintain protection for the health, safety and general well-being of all inhabitants of the City of Wooster through the regulation of non-storm water discharges and storm water runoff to the municipal separate storm sewer system (MS4) to the extent practicable and as required by federal and state law.

B. This Manual establishes technically feasible and economically reasonable standards, specifications, methods and guidelines for land used or being developed for non-farm commercial, industrial, residential or other non-farm purposes to:

1. Achieve storm water management and conservation practices that control the introduction of pollutants into the MS4;
2. Abate erosion of the soil and the degradation of the Waters of the State in conjunction with earth-disturbing activities;
3. Encourage development of an efficient drainage system design that will not cause the expenditure of excessive public or private money for maintenance and replacement of such a system;
4. Permit development while preventing negative downstream impacts throughout the drainage basin;
5. Reduce damage to receiving streams and drainage systems that may be caused by the quality, quantity and/or rate of water discharged; and
6. Establish a basis for the design of storm water conveyance systems that will preserve the rights and options of both the dominant and subservient property owners and help assure the long-term adequacy of storm water conveyance systems.

C. The objectives of this Manual are:

1. To comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process;
2. To establish legal authority to ensure compliance with this Manual;
3. To protect watercourses and habitat quality from degradation;
4. To regulate the contribution of pollutants to the MS4 by storm water discharges by any user;
5. To prohibit illicit connections and discharges to the MS4;
6. To control materials and debris in the MS4;
7. To minimize non-point source pollution from earth-disturbing activity;
8. To minimize soil erosion and sedimentation;
9. To reduce the amount and rapidity of surface water runoff;

10. To ensure future access to storm water management facilities; and
11. To ensure that controls are properly maintained and pose no threat to public safety.

102 FORMAT OF DOCUMENT

A. This Manual is organized into eleven (11) sections:

1. Section One: Regulations Overview
2. Section Two: General Provisions
3. Section Three: Definitions
4. Section Four: Illicit Discharge
5. Section Five: Permitting
6. Section Six: Drainage Plan
7. Section Seven: Storm Water Pollution Prevention Plan (SWP3)
8. Section Eight: Construction
9. Section Nine: Post-Construction
10. Section Ten: Operation and Maintenance of SWP3 Controls
11. Section Eleven: Inspection, Enforcement Action and Penalties

B. This manual contains three (3) appendices which are included at the end of this Manual.

1. Appendix A : Engineering Department Development Permit Application
2. Appendix B: Summary of 2002 Nationwide Permits
3. Appendix C: City of Wooster I-D-F Rainfall Intensity Table and Curve

C. Source and other outside reference documents are referenced throughout this Manual. Such references are not included as appendices to avoid any confusion over current and superseded versions.

SECTION 2

GENERAL PROVISIONS

201 APPLICABILITY

This Manual shall apply to all water entering the municipal separate storm sewer system (MS4) generated on any developed and undeveloped lands and all construction activity on any developed and undeveloped lands, except for those discharges generated by the activities detailed in Section 402 A.1. to A.4. of this Manual, or explicitly exempted by the City Engineer.

202 ADMINISTRATION

The City Engineer is authorized to administer, implement and enforce the provisions of this Manual. Staff of the City Engineer may determine compliance with this Manual and issue notices and orders, through the City Engineer, as may be necessary.

203 DISCLAIMER OF LIABILITY

Compliance with this Manual shall not relieve any person from responsibility for damage to any person or property otherwise imposed by law; nor shall it create a duty by the City to those damaged by storm water management.

204 ENVIRONMENTAL LAWS

A. No conditions of this Manual shall release a person from any responsibility or requirements under other environmental statutes or regulations, including but not limited to the U.S. Army Corps of Engineers and the Ohio EPA.

B. Nothing in this Manual shall be construed to preclude the institution of any legal action or relieve a person from any responsibilities, liabilities or penalties to which the person is or may be subject to under Section 311 of the Clean Water Act or 40 Code of Federal Regulations (CFR) part 112.

C. No conditions of this Manual shall release a person from any responsibilities, requirements, liabilities, or penalties to which a person may be subject to under the City Charter Chapter 923 Sewerage, Chapter 925 Storm Drainage or any other Chapters of the Charter.

205 SEVERABILITY

If any clause, section or provision of this Manual is declared invalid or unconstitutional by a court of competent jurisdiction, validity of the remainder shall not be affected thereby.

206 CONFLICT

In cases of conflict with any other City regulation, the provisions of this Manual shall prevail for storm water management.

207 PROPERTY RIGHTS

This Manual does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property, nor any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

208 RESPONSIBILITY

Failure of the City to observe or recognize hazardous or unacceptable conditions or to recommend corrective measures shall not relieve a person from the responsibility for the condition or damage resulting there from and shall not result in the City, or its employees or agents, being responsible for any conditions or damage resulting there from.

209 DUTY TO MITIGATE

All reasonable steps shall be taken by a person to minimize or prevent any discharge in violation of this Manual which has a reasonable likelihood of adversely affecting human health or the environment.

210 INFORMATION

When any person becomes aware that any relevant facts or information associated with the provisions of this Manual were incorrectly submitted, the City Engineer shall promptly be notified of such facts or information.

211 VARIANCE

A. The City Engineer may grant a variance to one or a number of provisions of this Manual when a person, owner or operator, or his appointed representative, can show evidence that a hardship exists, whereby, compliance with this Manual is not appropriate, based upon the following:

1. That exceptional and/or unusual topographic or other physical conditions exist that are peculiar to the particular parcel of land to which variance is requested;
2. That the peculiar condition in Part 1. did not result from previous actions by the person, owner or operator; and
3. That such a literal interpretation of this Manual would deprive a property owner of rights that are enjoyed by other property owners.

B. Adverse economic conditions shall not be considered as a valid reason or hardship for variance request to be granted.

C. No variance shall be granted where activities occur that may defeat the purposes of this Manual.

D. Request for variance shall be initiated through the City Engineer and shall state the specific variances being sought and include sufficient data to justify granting of the variance. The City Engineer may grant or deny any request for variance.

212 CERTIFICATION

Any person signing documents under this Manual shall make the following certification: *“I certify under penalty of law that this document and all attachments were 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 this 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.”*

213 DUTY TO COMPLY

A. All persons shall comply with this Manual within the City of Wooster. Any noncompliance constitutes a violation and may be subject to enforcement action and penalties according to this Manual.

B. It shall not be a defense for any person in an enforcement action that it would have been necessary to halt or reduce an activity in order to maintain compliance with this Manual.

SECTION 3

DEFINITIONS

301 INTERPRETATION

For the purpose of this Manual, certain rules or word usage apply to the text as follows:

A. Words used in the present tense include the future tense, and the singular includes the plural, unless the context clearly indicates the contrary.

B. The term “shall” is always mandatory and not discretionary. The word “may” is permissive. The term “should” is permissive but indicates strong suggestion.

C. The word or term not interpreted or defined by this Article shall be construed according to the rules of grammar and common usage so as to give these rules their most reasonable application.

302 WORDS AND TERMS DEFINED

The following definitions shall apply to this Manual:

100-year flood: A flood which has the probability of occurring once every one-hundred (100) years or having a one (1) percent chance of occurring each year.

Best management practice(s) (BMP): Schedules of activities, prohibitions of practices, maintenance procedures and other management practices and techniques (both structural and non-structural) used to lessen the environmental impacts of land use and to prevent or reduce the pollution of Waters of the State. BMPs also include treatment requirements, operating procedures and practices to control plant and/or construction site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage. Techniques may involve basins, vegetation, altering construction operations, open space development, riparian buffers or other means of limiting environmental impacts.

Channel: Natural or artificial watercourse of perceptible extent, with a definite bed and banks to confine and conduct continuously or periodically flowing water. Channel flow thus is that water which flows by gravity and is characterized by a free water surface within the banks of a defined channel.

Channel Protection and Water Quality Volume (CPWQv): The volume of storm water runoff which shall be captured and treated prior to discharge from the developed site after construction is complete. CPWQv is based on the expected runoff generated by

the mean storm precipitation volume from post-construction site conditions at which rapidly diminishing returns in the number of runoff events captured begins to occur.

City: The City of Wooster.

City Engineer: The City of Wooster City Engineer.

Clean Water Act (CWA): The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Clearing: Any activity which removes the vegetative surface cover

Code of Federal Regulations (CFR): A codification of the final rules published daily in the Federal Register. Title 40 of the CFR contains the environmental regulations.

Concentrated storm water runoff: Any storm water runoff which flows through a drainage pipe, ditch, diversion or other discrete conveyance channel.

Construction activity: Any activity subject to the Engineering Development Permit.

Contaminated: Containing the amount of any substance that will cause pollution of Waters of the State, Waters of the United States, or that will cause lethal or sub-lethal adverse effects on representative, sensitive aquatic monitoring organisms belonging to the City, upon their exposure to samples of any discharge into Waters of the State, Waters of the United States, or the MS4.

Contamination: The presence of or entry into a public water supply system, the MS4, Waters of the State, or Waters of the United States of any substance which may be deleterious to the public health and/or the quality of water.

Detention Storage: Storm runoff collected and stored for a short period of time and then released at a rate much less than the inflow rate. (e.g. a dry reservoir)

Development: Any action in preparation for construction activity which results in an alteration of either land or vegetation, including but not limited to clearing, grubbing, grading, filling, excavation or any other development operations.

Development drainage area: Any contiguous area operated as one development unit and used or being developed for non-farm commercial, industrial, residential or other non-farm purposes upon which earth-disturbing activities will occur.

Discharge: Any substance introduced to the Waters of the State or to surface runoff which is collected or channeled by the MS4 which do not lead to treatment works and/or the addition of any pollutant to the Waters of the State from a point source.

Discharger: Any person, who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any owner or operator of a construction site or industrial facility

Disturbed: Earth surface subject to erosion due to the removal of vegetative cover and/or earthmoving activities.

Ditch: An open channel, either dug or natural, for the purpose of drainage or irrigation with intermittent flow.

Drainage: A general term applied to the removal of surface or subsurface water from a given area, either by gravity or by pumping, commonly applied herein to surface water.

Drainage system or drainageway: The surface and subsurface system for the removal of water from the land, including both the natural elements of streams, marshes, swales and ponds, whether of an intermittent or continuous nature, and man-made elements which include culverts, ditches, channels, storage facilities and the storm sewer system.

Earth-disturbing activity: Any clearing, grubbing, grading, excavating, filling or other alteration of the earth's surface where natural or man-made ground cover is destroyed, which may result in or contribute to sediment and erosion pollution or changes in runoff.

Easement: Property titled to the city for the operation and maintenance of storm water drainage and management systems.

Engineer: A Professional Engineer registered in the State of Ohio as required by Chapter 4733 of the Ohio Revised Code.

Engineering Development Permit: The permit issued by the City Engineer for the construction, development or alteration of ground improvements and structures indicating that earth-disturbing activity may commence

Engineering Development Permit application: The application required by the City of Wooster to be submitted by the owner or operator to the City Engineer for any proposed earth-disturbing activity

Environmental Protection Agency (EPA): The U.S. Environmental Protection Agency or, where appropriate, a designation for the Administrator or other duly authorized official of such Agency.

Erosion: The general process whereby the land surface is moved by flowing surface or subsurface water or is worn away by the action of wind, water, ice or gravity.

Erosion control: Measures that prevent erosion.

Facility: Any operation, including construction sites, required by the Federal Clean Water Act to have a permit to discharge storm water associated with activities subject to NPDES Permits as defined in 40 CFR, Part 122.

Farm: Land or water devoted to agriculture as defined by Section 303.01 of the Ohio Revised Code.

Final Stabilization: That either

A. All soil disturbing activities at the site are complete and a uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70 percent cover for the area has been established on all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures (such as the use of mulches, rip-rap, gabions or geotextiles) have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion; or

B. For individual lots in residential construction by either:

1. The homebuilder completing final stabilization as specified in A. above or
2. The homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or

C. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were previously used for agricultural activities, such as buffer strips immediately adjacent to Waters of the State and which are not being returned to their pre-construction agricultural use, shall meet the final stabilization criteria in A. or B. above.

Flood: A temporary rise in the level of rivers, streams, watercourses and lakes which results in inundation of areas not ordinarily covered by water.

Flood plain: The land adjacent to a body of water which has been or may be covered by flood water including, but not limited to, the 100-year flood.

Grading: Excavation or fill of material, including the resulting conditions thereof

Hazardous material: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed

Hydrologic soil group: One of four classifications of soil based on the minimum infiltration for bare soil after prolong wetting as used by the United States Department of Agriculture Natural Resources Conservation Service Technical Release No. 55 *Urban Hydrology for Small Watersheds*.

Illicit connection:

A. Any direct physical connection, whether on the surface or subsurface, which allows or has the potential to allow an illicit discharge to enter the MS4 without a permit, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City, including but not limited to a pipe, ditch, swale and sump pump discharge, or;

B. Any drain or conveyance connected from a commercial or industrial land use to the MS4 which has not been documented in plans, maps, or equivalent records and approved by the City Engineer.

Illicit discharge: Any direct or indirect discharge to the MS4 that is not composed entirely of storm water, except as allowed by this Manual.

Impervious Surface: Any constructed surface; including but not limited to, rooftops, sidewalks, roads, and parking lots; covered by impenetrable materials such as asphalt, concrete, brick, and stone. These materials seal surfaces, repel water and prevent precipitation and runoff from infiltrating soils. Soils compacted by urban development are also highly impervious.

Infiltration BMPs: Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced storm water runoff quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.

Landscape: To mow, seed, sod, and to do other landscape activities which are not earth changes.

Larger common plan of development or sale: means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Lot: A part of a subdivision plat recorded in the Office of the County Recorder or a parcel described by Metes and bounds, the description, instrument or conveyance of which has been so recorded.

Material: Soil, sand, gravel, clay, or any other organic or inorganic material.

Municipal Separate Storm System (MS4): As defined at 40 CFR 122.26(b)(8), “means 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.

- B. Designed or used for collecting or conveying storm water;
- 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.”

National Pollutant Discharge Elimination System (NPDES): A national program under Section 402 of the Clean Water Act for regulation of discharges of pollutants from point sources to Waters of the United States. Discharges are illegal unless authorized by an NPDES permit.

NPDES Permit: A permit issued by the EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to Waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-storm water discharge: Any discharge to the MS4 that is not composed entirely of storm water.

Non-structural BMP: Any BMP that promotes improved water quality through sound planning procedures that help guide the growth of a community away from sensitive areas to areas that can support it without compromising water quality. Site based non-structural BMPs include, but are not limited to, buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

Obstruction: Any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel, rectification, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure or matter in, along, across or projecting into any channel, watercourse, or flood plain area which may impede, retard or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water, or that is placed where the flow of water might carry the same downstream to the damage of life or property.

Ohio EPA: The Ohio Environmental Protection Agency.

Operate: To drive, conduct, work, run, manage, or control.

Operator: The party or parties that either individually or taken together meet the following criteria:

- A. They have operational control over the site specifications (including the ability to make modifications in specifications) and

- B. They have the day-to-day operational control of those activities at the site necessary to ensure compliance with the Engineering Development Permit (e.g., authorized

to direct workers at a site to carry out activities required by the Storm Water Construction Permit or comply with other permit conditions); or

C. Any person, firm, corporation, sole proprietorship, partnership, state agency or political subdivision thereof who acts in his own behalf or as the agent or an owner of property and engages in alteration of land or vegetation in preparation for construction activity.

Owner: Any person with a legal or equitable interest in the land for which a permit is issued.

Part per million (PPM): A unit of concentration commonly used when measuring levels of pollutants in air, water, etc. One (1) ppm is 1 part in 1,000,000 parts. One (1) ppm is equivalent to one mg/liter.

Percent imperviousness: The impervious area divided by the total area of the project site.

Permanent stabilization: The establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap and landscaping techniques to provide permanent erosion control on areas where construction operations are complete or where no further disturbance is expected for at least one year.

Permittee: The applicant in whose name a valid permit is duly issued.

Person: Any individual, owner, operator, association, organization, partnership, firm, corporation, municipal corporation, joint venture, agency, County or State agency, unincorporated associate, party, the federal government, any combination thereof or other entity recognized by law.

Point source: Any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant: Anything which causes or contributes to pollution

Pollution: The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any Water of the State or Water of the United States, that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Post-Construction Certification: Report required by the City to be submitted by the owner or operator to the City Engineer upon final stabilization of a development site with coverage under the Engineering Development Permit and with an approved SWP3.

Practices: Measures and structural and non-structural BMPs that are determined to be the most effective, practical means of preventing or reducing point source or non-point source pollution inputs to storm water runoff and water bodies

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Rainwater and Land Development Manual: A manual describing construction and post-construction best management practices and associated specifications prepared by the Ohio Department of Natural Resources Division of Soil and Water Conservation. The compilation of technical standards and design specifications are methods of controlling construction related surface runoff, erosion and sedimentation. A copy of the manual may be obtained by contacting the City Engineer or the Ohio Department of Natural Resources, Division of Soil & Water Conservation.

Retention storage: Storm runoff collected and stored for a significant period of time and released after the storm runoff has ended. Retention storage is often associated with "wet reservoirs" which have special recreational or aesthetic uses centered around a minimum pool.

Release: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into ground-water, subsurface soils, surface soils, the municipal separate storm sewer system, the Water of the State, the Waters of the United States

Riparian area: An area of trees, shrubs, and surrounding vegetation located adjacent to streams, lakes, ponds, and wetlands which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.

Runoff: The portion of rainfall, melted snow or irrigation water that flows across the ground surface and is eventually returned to streams.

Runoff coefficient: The fraction of total rainfall that will appear at the conveyance as runoff.

Sediment: Soils or other surface materials (including, but not limited to rock, sand, gravel and organic material or residue associated with or attached to the solid) that can be transported or deposited by the action of wind, water, ice or gravity as a product of erosion or sedimentation.

Sediment and erosion control: Conservation measures used to prevent eroded sediment from leaving the site and control sediment pollution, including but not limited to, structural practices, vegetative practices and management techniques.

Sediment pollution: Degradation of Waters of the State by sediment as a result of failure to apply management or conservation practices to abate wind or water soil erosion, specifically in conjunction with earth-disturbing activities on land used or being developed for commercial, industrial, residential or other non-farm purposes.

Sediment settling pond: A sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of the Rainwater and Land Development manual.

Sedimentation: The processes that operate at or near the surface of the ground to deposit soils, debris and other materials either on the ground surfaces or in water channels or the action of deposition of sediment that is determined to have been caused by erosion.

Site: The entire area of land surrounding the discharge activity.

Site map: A plan or set of plans showing the details of any earth-disturbing activity of a site.

Soil erosion: The movement of soils that occurs as a result of human activities and development.

Stabilization: Vegetative or structural soil-cover controlling erosion (including but not limited to permanent and temporary seed, mulch, sod, pavement, etc.) or the use of vegetative and/or structural practices that prevent exposed soil from eroding.

State: The State of Ohio.

Stop Work Order: A notice issued by the City Engineer, or by an agent of the City Engineer as authorized by the City Engineer, to a permittee to cease earth-disturbing activities.

Storm drainage system: All facilities, channels, and areas which serve to convey, filter, collect and/or receive storm water, either on a temporary or permanent basis.

Storm water: Storm water runoff, snow melt runoff, and surface flow runoff and drainage according to 40 Code of Federal Regulation 122.26(b)(13).

Storm water conveyance system: All storm sewers, channels, streams, ponds, lakes, etc. used for conveying concentrated storm water runoff or storing storm water runoff and filtering pollutants

Storm Water Pollution Prevention Plan (SWP3): A set of plans and specifications, prepared and approved in accordance with the specific requirements of the City Engineer and the provisions of these regulations and certified by an Engineer, indicating the storm water management strategy, including the specific measures and sequencing to be used to manage storm water on a development site before, during and after construction and shows the details of any earth-disturbing activity on the site.

Storm water retention/detention BMPs: Retention storage and detention storage that control storm water by gathering runoff in wet ponds, dry basins, or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices

can be designed to both control storm water volume and settle out particulates for pollutant removal.

Storm water runoff: Surface water runoff which converges and flows primarily through water conveyance features such as swales, gullies, waterways, channels or storm sewers.

Stream: Any naturally occurring perennial or intermittent stream, river, or creek flowing within a defined bed and banks. Streams may appear on Soil Surveys, Aerial Photographs, or a USGS resource, whether or not flow may be seasonally intermittent.

Structural BMP: Structural BMPs include storm water retention/detention BMPs, infiltration BMPs and vegetative BMPs, as defined in this section.

Structure: Anything manufactured, constructed or erected which is normally attached to or positioned on land, including, but not limited to buildings, portable structures, earthen structures, roads, parking lots, and paved storage areas.

Temporary stabilization: The establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.

Vegetative BMPs: Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, remove pollutants, and facilitate percolation of runoff, thereby maintaining natural site hydrology, promoting healthier habitats, and increasing aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands, and rain gardens.

Wastewater: Water or other liquid, other than uncontaminated storm water, discharged from a facility.

Watercourse: any natural or improved body of water including, but not limited to lake, pond, stream, river, creek, ditch, channel, canal, conduit, gutter, culvert, drain, gully, swale, or wash in which water flows either continuously or intermittently which are delineated by the City of Wooster.

Waters of the State: All rivers, streams, lakes, ponds, wetlands, watercourses, drainage systems, and all other bodies or accumulations of surface water, natural or artificial, that are situated wholly or partly within or border upon this State, or are within its jurisdiction, except those private waters that do not combine or effect a junction with natural surface or underground waters. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the ORC are not included.

Waters of the United States: All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce; all interstate waters, including interstate wetlands; all other waters the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce; all impoundments of waters otherwise defined as Waters of the United States under this definition; all

tributaries of waters identified in this definition; all wetlands adjacent to waters identified in this definition; and any waters within the federal definition of "Waters of the United States" at 40 CFR § 122.2; but not including any waste treatment systems, treatment ponds, or lagoons designed to meet the requirements of the federal Clean Water Act.

Watershed: A region draining to a specific river, river stream or body of water.

Wetland: An area that is inundated or saturated by surface or ground-water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

SECTION 4

ILLICIT DISCHARGE

401 OVERVIEW

The objective of the Illicit Discharge Elimination (IDE) Program is to develop, implement and enforce a policy to detect and eliminate illicit discharges into the Waters of the State. Illicit discharges are any releases of water that is not entirely composed of storm water. Sources of illicit discharges include, but are not limited to, sanitary wastewater, septic tank effluent, car wash and laundry wastewaters, spills from roadway accidents and improper disposal of auto and household toxics.

402 ILLICIT DISCHARGES

A. Discharging material(s) other than storm water into the MS4 is prohibited by City Charter Chapter 925.06 Prohibited Discharges, except as described by the following:

1. Discharges specified in writing by the City Engineer as being necessary to protect public health and safety are allowable;
2. Dye testing is an allowable discharge, but requires a verbal notification to the City Engineer prior to the time of the test;
3. Discharges from off-lot discharging home sewage treatment systems permitted by the Wayne County Health Department for the purpose of discharging treated sewage effluent in accordance with Ohio Administrative Code 3701-29-12(6) until such time as the Ohio Environmental Protection Agency issues an NPDES permitting mechanism for residential 1, 2 or 3 family dwellings, unless such discharges are deemed to be creating a public health nuisance by the Wayne County Health Department or the City Engineer.
4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the City or the Ohio EPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the Waters of the State.

B. The following discharges are exempt from discharge prohibitions established by this Manual unless the City Engineer identifies them as being significant contributors of pollutants to the MS4:

1. water line flushing or other potable water sources
2. landscape irrigation or lawn watering
3. diverted stream flows
4. rising ground water

5. ground water infiltration to storm drains
6. uncontaminated pumped ground water
7. foundation or footing drains
8. crawl space pumps
9. air conditioning condensation
10. natural springs
11. non-commercial washing of vehicles
12. natural riparian habitat or wet-land flows
13. swimming pools dechlorinated to less than one part per million (PPM) chlorine
14. fire fighting activities

C. Although the above discharges are not classified as illicit, the impact of such discharges may be considered nuisances if they adversely affect open watercourses and/or adjacent properties. The City Engineer has the authority to implement enforcement actions and penalties against such nuisances according to this Manual.

403 ILLICIT CONNECTIONS

Illicit connections to the MS4 are prohibited by City Charter Chapter 925.06 Prohibited Discharges.

404 CONTROL OF MATERIALS AND DEBRIS

A. The following practices shall be implemented to control materials and debris from entering the MS4 and the Waters of the State, as prohibited by City Charter Chapter 925.07 Watercourse Protection:

1. At construction sites, an appropriately sized covered dumpster shall be made available for the proper disposal of construction site waste materials, garbage, plaster, drywall, grout, gypsum and etc.
2. The washing of excess concrete material into a street, catch basin, or other public facility or natural resource is prohibited.
3. All fuel tanks and drums shall be stored in marked storage area.
 - a. A dike shall be constructed around this storage area with a minimum capacity equal to 110% of the volume of the largest container in the storage area.
 - b. If the fuel tanks have a self-contained “dike,” the plug will be kept in the “dike” tank at all times.
4. Any toxic or hazardous material and contaminated soils shall be disposed of properly.

5. Runoff from contaminated sites shall not be allowed to leave the site.
6. Proper permits shall be obtained for earth-disturbing activity on solid waste landfill sites.
7. Measures shall be taken to prevent soil transport onto public roads, or surfaces where runoff is not checked by sediment controls. Gravel construction entrance(s) shall be implemented as required by the City Engineer and the Ohio EPA.
8. At construction sites, where soil is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day, or more frequently, in order to ensure public safety.
 - a. Soil shall be removed from paved surfaces by shoveling and/or sweeping.
 - b. Street washing shall be allowed only after shoveling or sweeping has removed most of the sediment.

B. Additional practices should be adopted as necessary to comply with the requirement of controlling materials and debris according to the provisions of this Manual.

405 WATERCOURSE PROTECTION

A. Every person owning property, through which a watercourse passes, shall keep and maintain that part of the watercourse within the property in accordance with City Charter Chapter 925.07 Watercourse Protection. Final interpretation is at the discretion of the City Engineer.

B. Natural riparian vegetation associated with intermittent or perennial streams is not to be eliminated or reduced.

C. The altering and/or filling of swales or other watercourse or drainage system is prohibited without obtaining an Engineering Development Permit according to the provisions of this Manual.

D. A person, person's lessees and/or designated agent shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures shall not become a hazard to the use, function, or physical integrity of the watercourse.

E. Vehicles shall avoid water resources, including but not limited to, wetlands, riparian areas, and their setbacks. This regulation includes, but is not limited to, construction vehicles and recreational vehicles. A written approval is required by the City Engineer if vehicles must enter and/or cross these areas repeatedly. And, in such cases, all efforts should be taken to minimize the impact of the vehicle on the resource.

F. No soil, rock, or debris shall be dumped, placed or disposed of in or upon the banks of a water resource or into such proximity that it may slough, slip, or erode into a water resource.

1. Such dumping or placing is allowable only if authorized by the City Engineer and, when applicable, the US Army Corps of Engineers and Ohio EPA.
2. The use/reuse of material (including, but not limited to rock, crushed and/or broken concrete and/or limestone) may be used for watercourse protection/stabilization when approved by the City Engineer and designed and installed in accordance with the most current edition of Rainwater and Land Development manual, current ODOT construction and material specification, US Army Cops of Engineers 404 permit requirements or other manual or specification approved by the City Engineer.

406 REPORTING ILLICIT DISCHARGES

A. Reporting illicit discharge or suspected illicit discharge is required by City Charter Chapter 925.07 Prohibited Discharges.

B. Reports may be made anonymously.

C. Reports of suspected illicit discharges shall be directed to the City Engineer in person, by phone or by facsimile as soon as possible. Reports can be mailed or faxed to Engineering at:

City of Wooster
Engineering Division
538 N. Market Street
Wooster, Ohio 44691
Phone: 330-263-5200
Fax: (330) 263-5283

D. The Wayne County Emergency Management Agency is the responsible authority for responding to hazardous material discharges. Reports of suspected hazardous waste discharges should be directed to:

Wayne County Emergency Management Agency
201 West North Street
Wooster, Ohio 44691
Phone: 330-287-5740
24-hour: 330-287-5700

407 FACILITY OR OPERATION SPILLS

A. Reporting facility or operation spills is required by City Charter Chapter 925.09 Facility or Operation Spills.

B. Notifications to the City Engineer must be in person or by phone or facsimile no later than the next business day in the event of a release of non-hazardous materials. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City Engineer within three (3) business days of the phone notice. Written notice shall include:

1. name of facility or operation
2. the facility's owner or operator name and contact information
3. the nature of the discharge
4. details of the discovery, containment and cleanup of the release
5. actions taken to prevent recurrence
6. a signature according to the signatory requirements of this Manual

C. If an on-site written record is required by City Charter Chapter 925.09 Facility or Operation Spills, such records shall be retained for at least three (3) years.

408 ENFORCEMENT

An actual or threatened illicit discharge to the MS4 or other Waters of the State through illicit connection or otherwise that violates or would violate this Manual shall be subject to the enforcement actions and penalties according to this Manual.

SECTION 5

PERMITTING

501 GENERAL REQUIREMENTS

No person shall cause or allow earth-disturbing activities except in compliance with the requirements set forth in this Manual and the criteria established by the following documents, including but not limited to:

- A. City of Wooster Subdivision Regulations;
- B. City of Wooster Zoning Regulations;
- C. City of Wooster Property Maintenance Code; and
- D. City of Wooster Building Code.

502 ENGINEERING DEVELOPMENT PERMIT APPLICABILITY

A. An Engineering Development Permit is required for any earth-disturbing or construction activity that will disturb:

- 1. One (1) or more acres of land; or
- 2. Less than (1) acre of land, but is part of a larger common plan of development or sale which will disturb one (1) or more acres of land.

B. An Engineering Development Permit is required for any earth-disturbing or construction activity on commercial property, as defined by the Ohio Administrative Code, regardless of disturbed surface area, unless covered by other City permits.

503 PERMIT EXEMPTIONS

No Permit is required for the following activities:

A. Any emergency activity which is immediately necessary for the protection of life, property or natural resources (the authorized agency shall notify the City Engineer of any such earth-disturbance which is more extensive than normal maintenance);

B. Existing nursery and agricultural operations conducted as a permitted main or accessory use; and

- C. Cemetery graves.

504 PERMIT REQUIREMENTS

A. For any earth-disturbing activity requiring an Engineering Development Permit, the owner or operator shall submit an Engineering Development Permit application to the City Engineer.

B. No earth-disturbing activities shall commence prior to the issuance of an Engineering Development Permit by the City Engineer.

C. Any runoff or water generated from any land-disturbing and/or post-construction activity shall be considered illicit discharge and a violation of this Manual, subject to enforcement measures and penalties according to this Manual, unless permitted by the Engineering Development Permit.

D. No person shall be granted an Engineering Development Permit for earth-disturbing activity without the approval of a Final Drainage Plan and/or a SWP3 by the City Engineer as outlined in this Manual.

E. Conditional approval may be given through written authorization by the City Engineer to begin phased construction after initial review of the Permit application. (e.g. City Engineer may authorize that grading work may begin provided that silt fences, etc. are in place.)

505 ENGINEERING DEVELOPMENT PERMIT APPLICATION

A. A copy of the Permit application is included as Appendix A. Permit applications are available through the City of Wooster Development Department Engineering Division.

B. Four (4) copies of the Final Drainage Plan and SWP3, if required by this Manual, shall accompany the Permit application in addition to any other plans required by the Permit.

1. Two (2) sets of the Final Drainage Plan and SWP3 will be retained by the Engineering Division (one for office reference and one for inspector use)
2. Two (2) sets of the Final Drainage Plan and SWP3 will be returned (one shall be kept at the permitted site for reference)

C. If a SWP3 is not required by this Manual, the Permit applications shall include a signed statement that any land clearing, construction or development involving the movement of earth shall be in conformance with standard erosion, runoff and sediment control practices to prevent soils from being deposited onto adjacent properties, rights-of-ways, public storm drainage systems, wetlands and/or watercourses.

506 PERMIT REVIEW AND APPROVAL

A. Within ten (10) business days of receipt of the Permit application, including any/all plans, by the City Engineer, unless special approvals are needed, a notification shall be sent to the applicant that the Permit application:

1. Is approved is approved and a permit is issued;
2. Must be resubmitted with additional information and/or modifications; or
3. Is denied.

B. If a Permit application required to be resubmitted is resubmitted by the applicant, it is subject to another ten (10) business day review and approval process. Failure to provide the additional information and/or modifications that were required shall result in Permit denial.

507 NOTIFICATION

For all earth-disturbing activity with an approved Drainage Plan or SWP3, it is the duty of the permittee to notify the City Engineer:

- A. Forty-eight (48) hours prior to commencement of earth-disturbing activities;
- B. Within forty-eight (48) hours of project completion; and
- C. Once the permitted site has achieved final stabilization, if applicable.

508 AVAILABILITY

The permittee shall furnish upon request to the City Engineer, or the City Engineer's authorized representative:

- A. Any information which the City Engineer may request to determine compliance with the Permit;
- B. Copies of records required to be kept by this Manual; and
- C. Permits required to be kept by other legal entities, including but not limited to the Ohio EPA and the US Army Corps of Engineers. Appendix B includes a table intended to provide general information on nationwide permits for various earth-disturbing activities as published in the January 15, 2002, *Federal Register*.

509 SIGNATORY REQUIREMENTS

A. All reports, certifications or information required by the Permit to be maintained by the permittee and other information requested by the City Engineer shall be signed by the owner indicated on the Engineering Development Permit or by a duly

authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of contractor/agent, manager, operator of a well or well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The written authorization is submitted to the City Engineer.

B. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of a permitted activity, a new authorization satisfying the signatory requirements of this Manual shall be submitted to the City Engineer prior to or together with any reports, information or applications to be signed by an authorized representative.

510 AS-BUILT DATA

A. All permittees are required to submit as-built data, for any drainage and storm water management practices located on-site.

B. The as-built plans must show the final design specifications for all drainage and storm water management facilities and must be certified, according to the provision of this Manual, and stamped by an Engineer.

C. A final inspection by the City Engineer is required after as-built data is submitted.

D. For sites without SWP3 requirements, final as-built data shall be submitted to the City Engineer within one (1) year of completing construction.

E. For sites with approved SW3Ps, final as-built data shall be submitted to the City Engineer within one (1) year after final stabilization, as defined in this Manual, according to the post-construction certification requirements of this Manual.

511 PERMIT MAINTENANCE

A. In addition to other enforcement measures and penalties outlined in this Manual:

1. Failure to obtain permits and approvals prior to construction shall result in doubling of fees; and
2. Failure to obtain inspections during construction may result in penalties and/or removal and reconstruction of improvements.

B. Work shall not proceed until the inspector has approved the various stages of construction.

C. The Permit shall become null and void if construction is not started within six (6) months.

D. The Permit shall become null and void if work is suspended for a period of six (6) months.

E. Required inspections can be arranged by calling 330-263-5251 with a forty-eight (48) hour scheduling notice.

512 PERMIT FEES

Storm water management fees shall be assessed as outlined on the Permit application for the review and inspection of drainage and construction and post-construction storm water management plans and facilities.

513 BONDING FOR EARTH-DISTURBING ACTIVITY

A. The permittee may be required to file with the City of Wooster a faithful performance bond or bonds, letter of credit or other improvement security in an amount deemed sufficient by the City Engineer for earth-disturbing activities to cover all costs of improvements, landscaping and maintenance of improvements for such period as specified the City Engineer to cover the cost of failure or repair of improvements installed on the site by the permittee.

B. Bonds filed for earth-disturbing activities are in addition to any other bonding required by the City of Wooster.

SECTION 6

DRAINAGE PLAN

601 OVERVIEW

Drainage design standards and specifications shall serve as minimum requirements for the handling of surface water and drainage. These procedures and regulations, coordinated with the construction and post-construction storm water management criteria of this Manual, shall govern the development of all new and/or modified drainage systems. The development of such drainage systems shall include the conveyance of surface water to an adequate outlet which is capable of carrying the flow.

602 DRAINAGE PLAN REQUIREMENTS

A. A preliminary Drainage Plan for any earth-disturbing or construction activity that requires an Engineering and Development Permit shall be submitted for review and preliminary approval by the City Engineer.

1. The preliminary Plan shall show the general surface water drainage pattern of the area which is to be improved as well as showing the drainage patterns of adjacent areas which affect or may be affected by the proposed improved area.
2. Sufficient data shall be supplied for the City Engineer to check the feasibility of the drainage systems for surface water runoff.
3. For subdivisions,
 - a. A copy of the preliminary Drainage Plan required by the Planning Commission may serve as the preliminary Drainage Plan.
 - b. The preliminary Drainage Plan shall be submitted prior to a request for preliminary approval from the Planning Commission.

B. A final Drainage Plan showing the entire drainage system with utility improvements, certified (according to the provision of this Manual) and stamped by an Engineer, shall be submitted to the City Engineer as part of the Permit application and according to the criteria set forth by this Manual.

1. The final Drainage Plan shall conform to this Manual and to any special conditions that were required by the Planning Commission in approving a required preliminary plat.
2. The final Drainage Plan shall include engineering calculations used in determining the design of the drainage courses and the drainage structures.

C. Drainage Plans shall be reviewed and approved by the City Engineer prior to issuing an Engineering Development Permit and prior to the construction of any portion of the drainage system.

D. The following shall serve as a minimum requirement for plans and engineering calculations for the on-site drainage:

1. The total tributary drainage areas entering the site.
2. Times of concentration, intensity and runoff coefficients used for determining runoff.
3. Discharge volume in cubic feet per second, velocity and additional data needed to establish that the drainage system will convey the flow to the approved adequate outlet.
4. The plan and profile of all drainage courses to where the system discharges into the adequate outlet.
5. Size and type of all drainage improvements including all drainage structures.
6. Sufficient contours and grading details to show that the proposed improvements will function adequately. Minimum spacing of contours shall be in two (2) feet intervals.

603 ADEQUATE DRAINAGE OUTLET

A. Surface water runoff shall be drained off site in accordance with this Manual to an adequate outlet.

B. The location of the adequate outlet shall be approved by the City Engineer.

C. The adequate outlet may consist of a ditch, stream, storm sewer or approved retention storage basin having sufficient capacity to accommodate the surface water runoff in a reasonable manner.

D. At a minimum, a storm water outlet shall be deemed inadequate if it exceeds its reasonable share of the maximum capacity of the downstream watercourse or closed conduit, as determined by the City Engineer's sole reasonable discretion.

E. The downstream watercourse or closed conduit must be adequate to convey the surface water runoff to Waters of the State.

1. If the City Engineer determines that a proposed drainage system does not include an adequate drainage outlet, the applicant may be required to design

and construct improvements to the downstream drain, watercourse, or closed conduit.

2. The City Engineer shall determine the extent to which downstream improvements may be required to provide for an adequate drainage outlet.

604 DRAINAGE EASEMENTS AND RIGHT-OF-WAYS

A. An adequate drainage easement shall be required along any drainageway, ditch, watercourse, stream or storm sewer which is not already within the public right-of-way. The easement shall be of sufficient width to allow cleaning, widening, deepening, replacement or otherwise general maintenance of such drainage course.

B. When it is required of the permittee to convey surface water outside the limits of the permitted site in order to discharge into an approved adequate outlet, it shall be the responsibility of the permittee to obtain easements and/or right-of-way for construction and/or maintenance of such drainage course.

C. All drainage easements and right-of-ways shall be shown on any/all plans and shall be recorded for public use. The maintenance of such drainage courses shall be the responsibility of the property owners receiving direct benefit therefrom.

D. When a drainage structure within the public right-of-way extends beyond the limits of the normal public right-of-way, it shall be the responsibility of the permittee to provide additional right-of-way around the structure to allow for adequate maintenance.

605 STORM SEWERS

A. The City Engineer may require a storm sewer system wherever an open ditch may present future problems such as flooding, erosion or endangers the health and safety of the residents of the City or wherever the pavement classification dictates a storm sewer system should be used.

B. The storm sewer system shall be designed to accommodate its tributary drainage areas.

C. The minimum drainage easement for storm sewers outside of the right-of-way shall be twenty (20) feet wide. This easement shall be shown on all plans and labeled "Public Drainage Easement."

606 CULVERTS

A. Culverts shall be used to convey water through a roadway embankment and shall be designed so as not to impose a hazard to the roadway or the immediate surrounding area. Attention shall be given to alignment, grade and sizing so hazards will not exist.

B. Culvert design requirements:

1. All culverts shall be installed, bedded and backfilled in accordance with the State of Ohio Department of Transportation, Construction and Materials Specifications.
2. The type of conduit used will be determined by the alkalinity of the water course and the amount of fill in the embankment in accordance with Ohio Department of Transportation, Construction and Materials Specifications.
3. Where concrete pipe is used, headwalls or end walls shall be required.
4. Where corrugated metal pipe is used as the culvert, it shall be at least of the minimum gauge specified by the City Engineer.
5. Any special treatment, such as catch basins, improved inlets, headwalls, stilling basins, energy dissipaters, downstream channel improvements, erosion control, shall be taken into consideration by the design Engineer.
6. All culverts draining areas **larger than 200 acres** shall be designated as **major culverts** and shall be designed to convey a 25-year frequency storm.
7. All culverts draining areas **200 acres and less** shall be designated as **minor culverts** and shall be designed to convey a 10 year frequency storm.

607 BRIDGE AND SPECIAL STRUCTURES

The design and construction of bridges or any other special drainage structure shall be reviewed and approved by the City Engineer.

608 SUBSURFACE DRAINAGE

A. Subsurface drainage shall be used as required to control the flow of ground water. Subsurface drainage is to be used as a measure to maintain firm, stable subgrades and foundations, eliminating wet cuts and preventing frost heave, preventing sloughing and saturation of cut and fill slopes.

B. Where a roadway consists of a total aggregate build-up with a chip and seal surface, it may be determined that an aggregate underdrain will provide sufficient subdrainage so long as the roadside ditch remains open and provides an adequate outlet for the aggregate underdrain.

C. Where a roadway pavement is being used over an aggregate base or where the ditches are closed in, pipe underdrains shall be used. For roadway structures and slope stabilization, pipe underdrains are to be used as required.

D. In the design of the pipe underdrain system, consideration shall be given to the type of pipe used, the filter material and the surrounding soils that are to be drained in order to avoid clogging and achieve adequate hydraulic capacity.

609 DOWNSPOUT DRAIN LINES

A. Downspout drain lines shall be (if possible) installed into the storm sewer drainage system. The downspout drain lines should empty into the nearest storm sewer catch basin or manhole to prevent excessive pipe sizes for the downspout drain lines.

B. A six (6) inch pipe shall be the minimum size for the collector line.

C. Roof drains shall be:

1. Tied into drains back of the curb connected to the storm system;
2. Directed onto splash pads adjacent to the house and at least ten (10) feet from adjacent property lines; or
3. If (1) or (2) is impractical, where the lot slopes to the rear and a drainage swale, storm sewer or other outlet method is provided, it may be used if approved.

D. All connections into existing storm sewers must be inspected and approved by the Division of Engineering.

E. Under no circumstances shall any storm drainage system, spouting drain or footer drain be allowed to empty into a sanitary sewer.

610 HYDROLOGIC DESIGN OF DRAINAGE STRUCTURES

A. All calculations for the design rate of runoff (Q) shall be submitted as part of a Drainage Plan.

B. The rational method will normally be an acceptable method for computing the design rate of runoff for tributary drainage areas of less than 200 acres. **The rational method will NOT be acceptable for the calculations required in Section 9 – POST-CONSTRUCTION. Please see Section 9 for more information on acceptable methods.**

C. The rational method is defined as $Q = CIA$ where:

1. Q - Runoff in cubic feet per second;
2. C - Runoff coefficient;
3. I - Intensity of rainfall (inches per hour); and
4. A - Tributary area (drainage area).

D. The ASCE Manual 37 - "Design and Construction of Sanitary and Storm Sewers" shall serve as a guideline for runoff coefficients used with the rational method.

E. The storm frequency and time of concentration shall be used to determine the intensity of rainfall. The City of Wooster Division of Engineering I-D-F Rainfall Intensities Table and I-D-F Curve, for use with the Rationale Method, are included as Appendix C.

F. For tributary drainage areas equal to or greater than 200 acres, the "Floods in Ohio - Magnitude and Frequency" bulletin by the Ohio Department of Natural Resources or the Soil Conservation Service Method shall be used for computing the design rate of runoff.

611 DESIGN FREQUENCY – STRUCTURES

A. Minimum design frequencies to be considered for drainage structures are as follows:

<u>Structure</u>	<u>Frequency</u>
Storm Sewers	5 years
Open Ditch	10 years
Culvert (minor)	10 years
Culvert (major)	25 years
Bridges	50 years
Flood Plain Structure	100 years

B. The design frequency to be considered for an individual structure may be altered by the City Engineer where there is a flood hazard or where the health and safety of the residents of the City would be endangered by the inundation of storm water.

612 OPEN DITCHES

A. The minimum slope of open ditches is to be one percent (1%). All ditches, slopes and areas distributed by construction are to be seeded and mulched.

B. Ditch linings shall be installed as follows:

<u>Type of Cover</u>	<u>Allowable Velocity</u>
Seeded lining	0 - 3 feet per second
Sodded lining	3 - 5 feet per second
Ditch lining to be approved by City	over 5 feet per second

C. The minimum dimensional requirements for open ditches shall be a two (2) foot bottom width, one and one half (1½) feet deep, with back slopes graded at a 4 to 1 slope, unless otherwise approved by the City Engineer.

D. All open ditches outside of the normal right-of-way shall be protected with a minimum twenty (20) feet drainage easement. This easement shall be shown on all plans and labeled "Public Drainage Easement."

613 SEEDING AND MULCHING

A. All ditches, right-of-way areas and areas disturbed during construction are to be seeded and mulched.

B. The specifications in Table 6.1, developed in cooperation with the Soil Conservation Service, outline the minimum requirements that shall be followed for both rate of application and time table for seeding.

Table 6.1 Specifications for Seeding and Mulching

Kind of Seed	Seeding Dates	Per 100 Sq. Ft.	Per Acre
Tall Fescue	March 1 to September 1	1 lb.	40 lbs.
Annual Ryegrass	March 1 to September 1	¼ lb.	10 lbs.
Red Clover	March 1 to September 1	¼ lb.	10 lbs.
Small Grain Mulch	March 1 to September 1	100 lbs. (3 bales)	2 tons (50 bales)
Rye or Wheat	September 1 to March 1	3 lbs.	2 bushels
Tall Fescue	September 1 to March 1	1 lb.	40 lbs.
Fertilizer	March 1 to September 1	25 lbs. of 10-10-10 or equivalent	1,000 lbs. of 10-10-10 or equivalent

C. Seeding shall be made within two (2) days after final grading or following seed-bed preparation with a disk or other suitable equipment. On sloping land, the final operation shall be done on the contour.

D. Mulch shall be applied immediately after seeding and spread evenly over the entire seeding area.

E. Seed shall be applied uniformly with a cyclone seeder, drill, cultipacker seeder or hydro-seeder.

614 STORM SEWER DESIGN

A. Where a storm sewer system is being constructed within a roadway where curbs are installed, catch basins with curb inlets shall be required in accordance with the design specifications and standard drawings of the City of Wooster.

B. Where a storm sewer system is being constructed and there are no curbs being installed or the storm sewer system is being installed away from the roadway, there shall be a drainage swale over the storm sewer system draining to the inlet basin. All such inlet basins shall be spaced and of the type specified in City regulations, unless otherwise approved.

615 COMPUTATION OF CONDUIT DESIGN PROFILE

A. The computation of storm sewer lines shall be based either on Manning's or Kutter's formula:

1. **Manning's Formula:** $V = \left(\frac{1.486}{n} \right) * r^{2/3} * s^{1/2}$
2. **Kutter's Formula:**
$$\frac{\frac{1.811}{n} + 41.67 + \frac{0.00281}{s}}{1 + \frac{n}{\sqrt{r}} * 41.67 * \frac{0.00281}{s} * \sqrt{r * s}}$$
3. With: $Q = A * V$
4. Where: s = slope (ft/ft)
 n = friction factor
 Q = discharge (cfs)
 r = hydraulic radius (ft)
 V = velocity (fps)
 A = area (ft²)

B. All storm sewers shall be designed with hydraulic slopes sufficient to give a mean velocity, when flowing full, of not less than three (3) feet per second, using an appropriate n -value based on the type of pipe material. The minimum n -value to be used shall be 0.010.

C. All catch basins and manholes shall be precast or cast-in-place concrete and shall be constructed in accordance with the design specifications and standard drawings of the City of Wooster.

D. In the case of sewers where velocities exceed fifteen (15) feet per second, special provisions shall be made to protect against erosion and displacement.

E. No storm sewer shall be less than twelve (12) inches in diameter.

F. Single family house spouting and footer drain connections shall not be less than four (4) inches in diameter. Service connections from other sources shall be of adequate capacity as designed by the engineer. The minimum grade for all such connections shall be one percent (1%).

G. When storm sewers are increased in size or when smaller sewers join larger ones, the invert of the larger should be lowered to maintain the same energy gradient, i.e. by placing the crown of both sewers at the same elevation.

H. In no case shall a larger pipe discharge into a smaller pipe, even though the capacity of the smaller pipe may be greater, unless prior approval is given by the City Engineer.

616 APPURTENANCES TO STORM DRAINAGE DESIGN

A. Storm sewers constructed within five (5) feet, center-to-center, of sanitary sewers shall have premium joints, i.e. meeting ASTM C433 or C425. This criterion shall apply to mains as well as connections.

B. Storm manhole joints shall be of the same type as its incoming sewer, i.e., premium joint sewer, ASTM C443 or C425, hence premium joint manhole ASTM C443.

C. Manholes or catch basins shall be installed at all changes in grade, size and/or alignment. Radius pipe may be considered for use in changes of alignment.

D. Maximum spacing for manholes and catch basins shall be three-hundred (300) feet as measured horizontally along the centerline of the pipe.

E. The minimum cover for drainage pipes under pavement shall be twelve (12) inches from the bottom of the pavement build-up to the crown of the pipe.

F. The minimum internal diameter of manholes shall be forty-eight (48) inches.

G. Inlet catch basins shall be placed at all low points, and/or where required by the City Engineer. The maximum spacing between inlets shall be three-hundred (300) feet.

H. All trench loading calculations shall be submitted to the City Engineer. The type of pipe selected shall be of the class, material, construction and structure required to withstand the loads imposed.

I. Headwalls and end walls shall be designed by an Engineer. Architectural treatment of headwalls and end walls may be required.

J. The City Engineer shall be consulted for design criteria on special manholes, non-circular sewers or special structures.

K. The City Engineer may require a special material for pipe to be used for conditions such as alkalinity of water, excessive depth, polluted water, or flat slopes.

L. All drainage pipes shall be laid and maintained to the required lines and grades as shown on the plans. Manholes shall be installed with the main line unless otherwise approved in writing by the City Engineer.

M. All drainage pipes laid under pavement or within two (2) feet of the edge of pavement shall be bedded, backfilled with suitable granular material and mechanically tamped. Drainage pipes through driveways shall be backfilled as above where drive construction is prior to settlement of one year or backfill is unsuitable.

N. The City Engineer reserves the right to waive any and all of specified tests or to accept a Certificate of Conformance in lieu of such tests.

SECTION 7

STORM WATER POLLUTION PREVENTION PLAN (SWP3)

701 OVERVIEW

The construction and post-construction storm water management program establishes the basis to control storm water runoff from construction sites and storm water runoff after construction is completed. Earth-disturbing activities within the City of Wooster are subject to the construction and post-construction storm water management requirements of this Manual. This Manual was developed to protect and preserve the streams and rivers and storm water runoff from areas undergoing new development or re-development can significantly affect water bodies during and after construction. Changes in volumes and rates of flow can scour and erode the natural stream beds, exceed the capacity of the systems and deposit pollutants in the waterways. This Manual shall control earth-disturbing activities and establish procedures for approval, administration and enforcement of the storm water management provisions of the Engineering Development Permit through the requirement of a Storm Water Pollution Prevention Plan (SWP3).

702 SWP3 APPLICABILITY & REQUIREMENTS

A. A comprehensive SWP3 for storm water management during construction and post-construction provides the City with the information needed to evaluate the impacts of proposed earth-disturbing activities during construction and post-construction.

B. An SWP3 is required for any earth-disturbing or construction activity that requires an Engineering Development Permit and involves:

1. The disturbance of one (1) or more acres of land;
2. The disturbance of less than one (1) acre of land that will be part of a larger common plan of development or sale which will disturb one (1) or more acres of land;
3. The subdivision of more than ten (10) lots; or
4. A subdivision with the construction of street.

C. Development, expansion or redevelopment of any size lot or lots requires submission of a SWP3, to protect adjacent properties from erosion and runoff, for review if:

1. Land-disturbance takes place in developed area;
2. Site contains drainageways or extreme slopes;
3. An area of the site will be used as a parking area for more than five (5) vehicles;
4. Impervious surface is increased by 25%, as determined by the City Engineer; or

5. More than 25% of the existing lot is impervious, as determined by the City Engineer.

D. The owner or operator shall develop and submit the SWP3, certified (according to the provision of this Manual) and stamped by an Engineer, as part of the Permit application and according to the criteria set forth by this Manual.

E. An SWP3 shall consist of the following provisions according to the requirements of this Manual:

1. Site description (Section 709);
2. Typical subdivision lot erosion and sediment control drawing, if applicable (Section 711);
3. Description of construction storm water management including erosion, runoff and sediment control practices and methods (Section 8); and
4. Post-construction storm water management (Section 9).
5. A description of maintenance procedures needed to ensure the continued performance of control practices (Section 10).

703 EXEMPTIONS

An SWP3 is not required for activities, including but not limited to paving and landscaping, that disturb less than 1,000 square feet of surface area. However, a general plan needs to be submitted that details how runoff will be managed, including protections for adjacent properties.

704 DUTY TO INFORM

The permittee shall inform all contractors and subcontractors who will be involved in the implementation of any or all parts of the SWP3, of the terms and conditions of the SWP3.

A. The permittee shall maintain a written document containing the signatures of all the contractors and subcontractors as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWP3.

B. The written document shall be created and signatures shall be obtained prior to commencement of any earth-disturbing activity.

705 SWP3 COVERAGE

A. With an approved SWP3, the Permit shall cover requirements for new and existing discharges, composed entirely of storm water and associated with earth-disturbing activity that enter Surface Waters of the State or a storm drain leading to Surface Waters of the State.

B. With an approved SWP3, the Permit authorizes storm water discharges from support activities including, but not limited to, equipment staging yards, material storage areas and excavated material areas provided:

1. The support activity is directly related to a construction site that is required to have coverage by the Permit for discharges of storm water associated with construction activity;
2. The support activity is not a commercial operation serving multiple unrelated construction projects and does not operate beyond the completion of the construction activity at the site it supports;
3. Appropriate controls and measures are identified in the SWP3, if applicable, covering the discharges from the support activity; and
4. The support activity is on or contiguous with the property defined in the Permit application.

C. The following storm water discharges associated with construction activity are NOT covered by the Permit, even with an approved SWP3:

1. Storm water discharges that originate from the site after construction activities have been completed, including any temporary support activity, and the site has achieved final stabilization;
2. Storm water discharges associated with construction activity that the City Engineer has shown to be or may reasonably expect to be contributing to a violation of a water quality standard; and
3. Spills and releases containing a hazardous substance equal to or in excess of reportable quantities.

706 ACCEPTABLE CONTROL PRACTICES FOR APPROVAL

A. The SWP3 shall be prepared with sound engineering and/or conservation practices by an Engineer experienced in the design and implementation of standard erosion and sediment controls, storm water management practices, and pollution prevention addressing all phases of construction.

B. The SWP3 shall describe and ensure the implementation of storm water management controls and/or practices, or Best Management Practices (BMPs), that reduce the pollutants in storm water discharges during construction and pollutants associated with post-construction activities to ensure compliance with this Manual.

C. The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with construction and/or post-construction activities. Storm water discharges from land uses or activities with higher potential pollutant loading may require the use of specific structural BMPs and pollution prevention practices.

D. Storm water discharges to critical areas with sensitive resources may be subject to additional performance criteria or may need to utilize or restrict certain storm water management practices.

E. All storm water runoff generated from new development shall not discharge untreated storm water directly into a jurisdictional wetland or local water body without adequate treatment. Where such discharges are proposed, the impact of the proposal on wetland functional values shall be assessed using a method acceptable to the City Engineer.

707 EXCEPTIONS

A. If specific site conditions prohibit the implementation of any of the controls and BMPs outlined in this Manual or site specific conditions are such that implementation of any BMPs outlined in this Manual will result in no environmental benefit, the SWP3 shall provide justification for rejecting each practice based on site conditions.

B. Exceptions from implementing BMPs outlined in this Manual shall be approved or denied by the City Engineer on a case-by-case basis.

708 SWP3 AMENDMENTS

A. The permittee shall amend the SWP3 whenever there is a change in the design, construction, operation or maintenance, which has an effect on the potential for the discharge of pollutants to Waters of the State or if the SWP3 proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with an earth-disturbing activity.

1. Four (4) copies of the modified plans and/or specifications highlighting amendments to the SWP3 shall be submitted to the City Engineer with fees for additional plan review (as outlined on the Permit).
2. The amended SWP3 shall be reviewed and approved, or disapproved, in the same manner as the original SWP3 and two (2) copies shall be returned to the permittee.
3. No amendments shall be made without the approval of the City Engineer.

B. The City Engineer or authorized representative may notify the permittee at any time that the SWP3 does not meet one or more of the minimum requirements of this Manual.

1. The permittee shall bring such requirement(s) into conformance with the provisions of this Manual in the time frame specified by the City Engineer.
2. Four (4) copies of the modified plans and/or specifications highlighting amendments to the SWP3 shall be submitted to the City Engineer with

fees for additional plan review (as outlined on the Permit) in the time frame specified by the City Engineer.

3. The amended SWP3 shall be reviewed and approved, or disapproved, in the same manner as the original SWP3 and two (2) copies shall be returned to the permittee.
4. Failure of the permittee to comply constitutes a violation of this Manual.

C. Field modifications of a minor nature may be approved by the City Engineer by written authorization to the permittee.

1. The permittee shall make the necessary amendment(s) to the SWP3 to reflect such field modifications in the time frame specified by the City Engineer and submit four (4) copies of the modified SWP3 with amendments highlighted.
2. Two (2) copies shall be returned to the permittee after review that the amendment reflects the authorized field modification.
3. Failure of the permittee to comply constitutes a violation of this Manual.

709 SITE DESCRIPTION

The SWP3 shall include a site description, consistent with the Permit application and any other plans, providing:

A. A description of the nature and type of the construction activity (e.g., low density residential, shopping mall, highway, etc.);

B. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas);

C. A calculation of the runoff coefficients for both the pre-construction and post-construction site conditions;

D. An estimate of the impervious area and percent imperviousness created by the construction activity;

E. Existing data describing the soil and, if available, the quality of any discharge from the site;

F. A description of prior land uses at the site;

G. An implementation schedule which describes the sequence of major construction operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion, sediment and storm water management practices or facilities to be employed during each operation of the sequence;

H. The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the aerial extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project;

I. Location and description of any storm water discharges associated with dedicated asphalt and dedicated concrete plants, concrete washout areas and the BMPs to address pollutants in these storm water discharges; and

J. A site map. The site map shall show the following:

1. A maximum scale of 1"=200';
2. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate Engineering Development Permit and associated SWP3;
3. Soil types for all areas of the site, including locations of unstable or highly erodible soils;
4. Existing and proposed contours at 2-ft intervals with a delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres;
5. Surface water locations including springs, wetlands, streams, lakes water wells, etc. on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the permittee intends to fill or relocate for which the permittee is seeking approval from the Army Corps of Engineers and/or Ohio EPA;
6. Existing and planned locations of buildings, roads, parking facilities and utilities;
7. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during the course of site development;
8. Sediment and storm water management basins noting their sediment settling volume and contributing drainage area;
9. Permanent storm water management practices to be used to control pollutants in storm water after construction operations have been completed;
10. Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling;
11. The location of designated construction entrances where the vehicles will access the construction site; and
12. The location of any in-stream activities including stream crossings.

710 POST-CONSTRUCTION CERTIFICATION

A. Upon completion of work and within one (1) year after final stabilization of the site, a certification letter and/or a report shall submitted to the City Engineer

certifying that all post-construction storm water management facilities have been completed, installed and/or constructed in accordance with the conditions of the approved SWP3 and all other specifications.

B. The certification letter and/or report shall be prepared by an Engineer and submitted with accompanying as-built data.

C. The certification letter and/or report shall include a specific listing of all approved changes and modifications to the original SWP3.

D. The post-construction certification shall be accompanied by a copy of the legally binding operation and maintenance agreement, including deed and final plat requirements, in accordance with the provisions of this Manual.

E. Enforcement actions may be taken in accordance with this Manual if a permittee does not submit the post-construction certification within one (1) year after final stabilization or submits the certification without meeting the conditions of this Manual.

F. Post-construction certification is subject to site inspection and approval by the City.

711 SUBDIVIDED DEVELOPMENTS

A. For subdivided developments where the SWP3 does not call for a centralized sediment control capable of controlling multiple individual lots, a detail drawing of a typical individual lot showing standard individual lot erosion and sediment control practices shall be required.

B. This shall not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for critical areas such as steep slopes, stream banks, drainageways and riparian zones.

C. In addition to the requirements set forth in this Manual, subdivided developments shall comply with the City of Wooster Subdivision Regulations.

SECTION 8

CONSTRUCTION

801 OVERVIEW

Construction storm water management is the control of storm water runoff leaving a site during earth-disturbing activity. Storm water runoff from construction sites polluted with sediment, fuels and other construction-related substances can quickly erode the quality of rivers and streams. The purpose of construction storm water management practices is to provide for the continual control of discharges that may adversely impact watercourse and/or adjacent properties. Adverse impacts that are the target of this effort include erosion, runoff and sedimentation from the movement of soil and the deposition of roadway materials and pollution from construction activity.

802 CONSTRUCTION STORM WATER MANAGEMENT REQUIREMENTS

A. The SWP3 shall contain a description of the practices and controls appropriate for each construction operation covered by the Engineering Development Permit and the owner or operator shall implement such controls.

B. For each major construction activity identified in the implementation schedule, the SWP3 shall clearly describe:

1. Appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and
2. Which contractor is responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization).

C. The erosion, sediment, and storm water management control practices and methods used to satisfy the requirements of the SWP3 during construction shall meet the standards and specifications in the current edition of Ohio's Rainwater and Land Development Manual published by the Ohio Department of Natural Resources (ODNR) Division of Soil and Water Conservation or other technical references as approved by the City Engineer.

D. Design and use of construction controls and practices must be practical and provide for optimal operation of the system. Implementing controls and practices that meet the criteria of this Manual but that are not practical and/or do not properly function as intended do not, in fact, satisfy the requirements of this Manual and shall not be approved as part of an SWP3.

803 NON-STRUCTURAL PRESERVATION METHODS

A. The SWP3 shall include and make use of practices which preserve the existing natural condition as much as feasible.

B. Such non-structural preservation BMPs may include:

1. Preserving riparian areas adjacent to Waters of the State;
2. Preserving existing vegetation and vegetative buffer strips;
3. Phasing of construction operations in order to minimize the amount of disturbed land at any one time; and
4. Designation of tree preservation areas or other protective clearing or grubbing practices.

C. A fifty (50) foot permanent buffer for an intermittent stream and a seventy-five (75) foot permanent buffer for a perennial stream shall be left undisturbed along Waters of the State measured from the ordinary high water mark of the surface water. Such permanent buffers shall be recorded in major subdivisions.

804 EROSION CONTROL PRACTICES

A. The SWP3 shall make use of erosion control BMPs that are capable of providing cover over disturbed soils.

1. A description of control practices designed to restabilize disturbed areas after grading or construction shall be included in the SWP3.
2. The SWP3 shall provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for any time of the year.
3. Such practices may include, but are not limited to: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, use of construction entrances, and use of alternative ground cover.

B. Disturbed areas shall be stabilized as specified in Table 8.1 and Table 8.2.

Table 8.1 Permanent Stabilization

Area requiring permanent stabilization	Time frame to apply erosion controls
Any areas that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any areas within 50 feet of a stream and at final grade	Within two days of reaching final grade
Any other areas at final grade	Within seven days of reaching final grade within that area

Table 8.2 Temporary Stabilization

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed areas within 50 feet of a stream and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 21 days
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 feet of a stream	<p>Within seven days of the most recent disturbance within the area</p> <p>For residential subdivisions, disturbed areas shall be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).</p>
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

C. Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques shall be employed.

D. Special measures shall be undertaken to permanently stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding (as defined in the most current edition of the Rainwater and Land Development manual), mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques or rock check dams.

805 RUNOFF CONTROL PRACTICES

A. The SWP3 shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring.

B. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable.

806 SEDIMENT CONTROL PRACTICES

A. The SWP3 shall include a description of structural practices that store runoff allowing sediments to settle and/or divert flows away from exposed soils or otherwise limit runoff from exposed areas.

1. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than fourteen (14) days.
2. Such practices may include sediment settling ponds, silt fences, earth diversion dikes or channels which direct runoff to a sediment settling pond and storm drain inlet protection.
3. All sediment control practices shall be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone shall

not be considered a sediment control practice unless used in conjunction with a sediment settling pond.

- B. The SWP3 shall contain detail drawings for all structural practices.
- C. Sediment control structures shall be functional throughout the course of earth disturbing activity.
 - 1. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven (7) days from the start of grubbing and shall continue to function until the up slope development area is restabilized.
 - 2. As construction progresses and the topography is altered, appropriate controls shall be constructed or existing controls shall be altered to address changing drainage patterns.
 - 3. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee shall replace or modify the control for site conditions.
- D. The City Engineer may require discharges from control structures to be monitored to ensure compliance with this Manual.

807 SETTLEMENT SETTLING PONDS

A. Concentrated storm water runoff and runoff from drainage areas, which exceed the design capacity of silt fence or inlet protection, shall pass through a sediment settling pond.

- 1. For common drainage locations that serve an area with ten (10) or more acres disturbed at one time, a temporary (or permanent) sediment settling pond shall be provided until final stabilization of the site.
 - 2. The permittee may request approval from the City Engineer to use alternative controls if it can demonstrate the alternative controls are equivalent in effectiveness to a sediment settling pond.
 - 3. For drainage locations serving less than ten (10) acres smaller sediment basins and/or sediment traps may be used.
- B. Settlement settling pond design requirements:
- 1. The sediment settling pond shall be sized to provide at least sixty-seven (67) cubic yards of storage per acre of total contributing drainage area. When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity shall be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff.

2. The depth of the sediment settling pond shall be less than or equal to five (5) feet.
3. The configuration between inlets and the outlet of the basin shall provide at least two (2) units of length for each one (1) unit of width (> 2:1 length:width ratio).
4. Sediment shall be removed from the sediment settling pond when the design capacity has been reduced by forty (40) percent. (This is typically reached when sediment occupies one-half (1/2) of the basin depth.)
5. When designing sediment settling ponds, the permittee shall consider public safety, especially as it relates to children, as a design factor for the sediment basin.
6. Permanent sediment settling ponds shall have a side slope not to exceed 1:2 (rise:run).

C. Alternative sediment controls shall be used where site limitations preclude a safe design.

D. The combination of sediment and erosion control measures may be used in order to achieve maximum pollutant removal.

808 SILT FENCE AND DIVERSIONS

A. Sheet flow runoff from denuded areas shall be intercepted by silt fence or diversions to protect adjacent properties and water resources from sediment transported via sheet flow. Where intended to provide sediment control, silt fence shall be placed on a level contour.

B. These regulations shall not preclude the use of other sediment barriers designed to control sheet flow runoff.

C. The relationship between the maximum drainage area to silt fence for a particular slope range is shown in Table 8.3.

Table 8.3 Silt Fence

Maximum drainage area (in acres) to 100 linear feet of silt fence	Range of slope for a particular drainage area (in percent)
0.5	< 2%
0.25	> 2% but < 20%
0.125	> 20% but < 50%

D. Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Such devices, which include swales, dikes or berms, may receive storm water runoff from areas up to ten (10) acres.

809 INLET PROTECTION

Other erosion and sediment control practices shall minimize sediment laden water entering active storm drain systems, unless the storm drain system drains to a sediment settling pond.

810 STREAM PROTECTION

A. If construction activities disturb areas adjacent to streams, structural practices shall be designed and implemented on site to protect all adjacent streams from the impacts of sediment runoff.

B. No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond in-stream) shall be used in a stream.

C. For all construction activities immediately adjacent to Waters of the State, a fifty (50) foot permanent buffer setback from an intermittent stream and a seventy-five (75) foot permanent buffer setback from a perennial stream should be maintained in its natural state and left undisturbed along Waters of the State, as measured from the ordinary high water mark of the surface water.

D. Such permanent buffers shall be recorded in major subdivisions.

E. Where impacts within this setback area are unavoidable due to the nature of the construction activity (e.g., stream crossings for roads or utilities) the project shall be designed such that the number of stream crossings and the width of the disturbance within the setback area are minimized.

811 NON-SEDIMENT POLLUTANT CONTROLS

A. No solid (other than sediment) or liquid waste, including building materials, shall be discharged in storm water runoff.

B. All necessary BMPs shall be implemented to prevent the discharge of non-sediment pollutants to the drainage system of the site or Waters of the State.

C. Under no circumstance shall concrete trucks wash out directly into a drainage channel, storm sewer or Waters of the State.

D. Waste materials shall not be exposed to storm water.

812 OFF-SITE TRAFFIC

A. Off-site vehicle tracking of sediments and dust generation shall be minimized.

B. Construction site entrances as specified in the most current edition of Rainwater and Land Development Manual shall be used at all points of ingress and egress to the construction site.

813 TRENCH AND GROUND WATER CONTROL

A. There shall be no turbid discharges to Waters of the State resulting from dewatering activities.

B. If trench or ground water contains sediment, it shall pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site.

C. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice.

D. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge.

E. Care shall be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

814 OTHER METHODS OF CONTROL

Methods of control are not limited to those included in this section of this Manual. Proposals will be considered on individual location merits subject to approval of the City Engineer.

SECTION 9

POST-CONSTRUCTION

901 OVERVIEW

Post-construction storm water management is the control of storm water runoff leaving a site after construction is completed. The purpose of storm water management practices is to provide for the continual control of discharges that may adversely impact watercourse and/or adjacent properties. Adverse impacts that are the target of this effort include erosion from increase speed and quantity of water, sedimentation from the movement of soil or the deposition of roadway materials and pollution such as oil and grease. Control of discharges can be accomplished through using structural and/or non-structural BMPs. Examples of post-construction storm water controls include, but are not limited to, tree preservation, catch basins, retention/detention storage basins and swales.

902 POST-CONSTRUCTION STORM WATER MANAGEMENT REQUIREMENTS

A. Permanent storm water management facilities are required for post-construction storm water management as part of the SWP3.

B. Post-construction storm water practices shall provide perpetual management of runoff quality and quantity so that receiving stream's physical, chemical, and biological characteristics are protected and stream functions are maintained.

C. The practices should seek to utilize pervious surface areas for storm water treatment and to infiltrate storm water runoff from driveways, sidewalks, rooftops, parking lots and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

D. Design of post-construction controls must be practical and provide for the long-term operation of the system. Controls sized to meet the design criteria set of this Manual but that do not allow for long-term operation do not, in fact, satisfy the requirements of this Manual and shall not be approved as part of an SWP3.

E. No storm water management practices will be acceptable that increase either the peak flow rate or the volume of runoff leaving a site.

F. The SWP3 shall contain a description of the structural and non-structural BMPs that will be installed and used during construction for the site and the rationale for their selection to meet the post-construction requirements of this Manual. The rationale shall address the anticipated impacts on the channel and flood plain morphology, hydrology, water quality, and adjacent and downstream properties.

G. Detail drawings and maintenance plans shall be developed for all post-construction BMPs as part of the SWP3.

1. The design of post-construction storm water facilities shall consider public safety as a design factor.
2. The SWP3 shall contain sufficient detail information, drawings and explanations to describe the method of storm water management after development.
3. Maintenance plans shall ensure that pollutants collected within structural post-construction practices are disposed of in accordance with local, state, and federal regulations.

H. The post-construction storm water management control practices and methods used to satisfy the requirements of the SWP3 shall incorporate measures as recommended by the most current edition of the Ohio Rainwater and Land Development Manual published by the Ohio Department of Natural Resources (ODNR) Division of Soil and Water Conservation and the ASCE Manual and Report on Engineering Practice No. 87 (or more current version) or other technical references approved by the City Engineer.

903 POST-CONSTRUCTION STORM WATER MANAGEMENT APPLICABILITY

A. Storm water detention storage and water quality requirements, outlined in Sections 905 and 906 of this Manual, are required for large construction site post-construction storm water management as part of the SWP3. A large construction site is defined as

1. Any construction activity involving the disturbance of five (5) or more acres of land or will disturb less than five (5) acres, but is part of a larger common plan of development or sale which will disturb five (5) or more acres of land;
2. Any major subdivision, as defined by the Wooster Subdivision Regulations, where new impervious surface comprises twenty percent (20%) or more of any drainage area of a portion of a lot;
3. Any other subdivision of land consisting of twenty thousand (20,000) square feet (0.46 acres) or more of new impervious surface that comprises twenty percent (20%) or more of any drainage area of a portion of a lot; or
4. Any earth-disturbing activity which adds impervious surface to the site of an existing large corporation, at the discretion of the City Engineer.

B. Earth-disturbing activity that does not meet the specifications of “A” shall be considered a small construction activity. Post-construction storm water management requirements for small construction activities shall be satisfied through Section 907 of this Manual.

C. Linear construction projects, (e.g., pipeline or utility line installation), which do not result in the installation of impervious surface, are not required to include post-construction storm water management plans as part of the SWP3. However, linear construction projects shall be designed to minimize the number of stream crossings and the width of disturbance.

904 WAIVER FOR LARGE CONSTRUCTION SITE

A. The owner or operator of a proposed project regulated by Section 903 A. may commission a report by an Engineer to determine the need for storm water detention storage and water quality requirements according to the design procedures of Section 905 and Section 906 of this Manual if the activity is consistent with the promotion of public health, safety, welfare, and protection of adjacent and downstream properties in light of the public's paramount concern for protection of its natural resources.

B. If submitted, the City Engineer shall review this report and subsequently direct the owner or operator either to provide storm water detention storage and/or water quality requirements in the SWP3, in accordance with the criteria of Section 905 and Section 906 of this Manual, or shall notify the owner or operator that the SWP3 requirement has been waived, and that the provisions of Section 903 B. instead apply.

905 STORM WATER DETENTION STORAGE

A. All site designs shall establish post-construction storm water management practices to control peak flow rates of storm water discharges associated with specific design storms and reduce the generation of storm water.

B. When a proposed earth-disturbing activity is subject to Section 903 A. of this Manual, increased peak rates and volumes of runoffs shall be controlled such that:

1. The peak discharge rate of runoff from the critical storm and all more frequent storms occurring under post-development conditions shall not exceed the peak discharge rate of runoff from a one (1) year, 24-hour frequency storm occurring on the same development drainage area under pre-development conditions.
2. Storms of less frequent occurrence (longer return periods) than the critical storms up to the 100-year storm have peak runoff discharge rates no greater than the peak runoff rates from equivalent size storms under pre-development conditions. Consideration of the one (1), two (2), five (5), ten (10), twenty-five (25), fifty (50), and one-hundred (100) year storms shall be considered adequate in designing and developing the storm water management facilities to meet this standards.
3. The critical storm for a specific development drainage shall be determined as follows:

- a. Using the Natural Resources Conservation Service (NRCS) TR-55 “Urban Hydrology for Small Watersheds” or TR-20 “Computer Program for project formulation hydrology”, or other appropriate and approved hydrologic simulation model along with rainfall data obtained from Huff & Angel “Rainfall Frequency Atlas of the Midwest”, to determine the total volume (acre-feet) of runoff from a one (1) year, 24-hour storm occurring on the development drainage area before and after development.
- 1.) Calculations shall clearly include the lot coverage assumptions used for full build out of the proposed condition.
 - 2.) Curve numbers for the pre-development condition must reflect the average type of land use over the past ten (10) years and not only the current land use.
 - 3.) Curve numbers for the post-development conditions shall be determined using the hydrologic soil group one level more severe than the pre-development hydrologic soil group using Natural Resource Conservation Service TR-55.
 - 4.) To account for unknown future cosmetic improvements to a construction site, an assumption of an impervious surface such as asphalt or concrete must be utilized for all parking areas or driveways, even if stone/gravel is to be utilized in construction.
- b. From the volumes determined in a. above, the percent increase in volume of runoff due to development shall be determined and the twenty-four hour critical storm shall be selected from Table 9.1:

Table 9.1 Critical Storm Selection

If the percentage of increase in volume of runoff is:		The critical storm will be:
Equal to or greater than:	Less than:	
--	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

C. It shall be strongly encourage that off-site runoff from upstream areas be conveyed through the site in an underground sewer system.

1. Other methods of conveying off-site flows around the site must be approved by the City Engineer.

2. If off-site runoff must be conveyed through a detention storage structure, measures must be taken to ensure that the structure will discharge at the same rate in the future in the case that off-site flows are diverted away from the site.

D. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

906 WATER QUALITY REQUIREMENTS

A. When a proposed earth-disturbing activity is subject to Section 903 A. of these regulations, structural post-construction storm water BMPs shall be capable of capturing the Channel Protection and Water Quality Volume (CPWQv) and draining over a prescribed number of hours.

B. Post-construction BMPs chosen shall be able to detain storm water runoff for protection of the stream channels, stream erosion control, and improved water quality.

C. Structural (designed) post-construction storm water treatment practices shall be incorporated into the permanent drainage system for the site.

D. BMPs shall be designed according to the methodology included in the Rainwater and Land Development manual or in standards as accepted by the City Engineer.

E. Methods for controlling increases in the rate and volume of storm water runoff may include, but are not limited to, the following:

1. Retarding flow velocities by increasing friction. (For example, using grass-lined road ditches, rather than paved street gutters where practical, and discharging roof water to vegetated areas, or grass and rock lined drainage channels.)
2. Grading and construction of terraces or diversions to slow runoff by diffusion, or use of grade control structures, such as check dams, to provide a level of control in flow paths and/or existing drainage systems.
3. Induced infiltration of increased storm water runoff into the soil where practical. (For example, constructing special infiltration areas where soils are suitable, retaining topsoil for all areas to be revegetated, or providing good infiltration areas with proper emergency overflow facilities.)
4. Provisions for detention/retention storage of storm water. All pond designs must provide a minimum one foot of freeboard.
5. Use of Low Impact Design methods such as bioretention areas, bio-swales, and infiltration trenches.

F. The BMPs chosen shall be sized to treat the CPWQ_v and ensure compliance with Ohio’s Water Quality Standards in OAC Chapter 3745-1.

G. The CPWQ_v shall be equivalent to the volume of runoff from a 0.75-inch rainfall and shall be determined according to one of the two following methods:

1. Through a site hydrologic study approved by the City Engineer that uses continuous hydrologic simulation and local long-term hourly precipitation records; or
2. Using the equation $CPWQ_v = C * P * A / 12$, where
 - a. CPWQ_v = channel protection and water quality volume in acre-feet;
 - b. C = runoff coefficient appropriate for storms less than 1 inch according to Table 9.2;
 - c. P = 0.75 inch precipitation depth; and
 - d. A = area draining into the BMP in acres.

Table 9.2 Runoff Coefficients Based on the Type of Land Use

Land Use	Runoff Coefficient
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2

H. Where the land use will be mixed, the runoff coefficient shall be calculated using a weighted average. For example, if 60% of the contributing drainage area to the storm water treatment structure is Low Density Residential, 30% is High Density Residential, and 10% is Open Space, the runoff coefficient is calculated as $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = 0.35$.

I. An additional volume equal to twenty (20) percent of the CPWQ_v shall be incorporated into the BMP for sediment storage and/or reduced infiltration capacity.

J. BMPs shall be designed such that the drain time is long enough to provide treatment, but short enough to provide storage available for successive rainfall events as described in Table 9.3.

Table 9.3 Target Drawdown (Drain) Times for Structural Post-Construction Treatment Control Practices

Best Management Practice (BMP)	Drain Time of CPWQv
Infiltration	24 - 48 hours
Vegetated Swale and Filter Strip	24 hours
Extended Detention Storage Basin (Dry Basins)	48 hours
Retention Storage Basins (Wet Basins)*	24 hours
Constructed Wetlands (above permanent pool)	24 hours
Media Filtration, Bioretention	40 hours

K. Both a permanent pool and an extended detention storage volume above the permanent pool, each sized at $0.75 * CPWQv$, shall be provided for retention storage basins.

L. Approval may be requested from the City Engineer to use alternative structural post-construction BMPs if the permittee can demonstrate that the alternative BMPs are equivalent in effectiveness or perform better than those listed in Table 9.3.

M. Construction activities shall be exempt from this condition if it can be demonstrated that the CPWQv is provided within an existing structural post-construction BMP that is part of a larger common plan of development or if structural post-construction BMPs are addressed in a regional or local storm water management plan.

N. For redevelopment projects (i.e., developments on previously developed property), post-construction practices shall either ensure a twenty (20) percent net reduction of the site impervious area, provide for treatment of at least twenty (20) percent of the CPWQv, or a combination of the two.

907 POST-CONSTRUCTION REQUIREMENTS FOR SMALL CONSTRUCTION ACTIVITIES

A. When a proposed earth-disturbing activity is subject to Section 903 B. of these regulations, the SWP3 shall describe the measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed.

B. Practices may include, but are not limited to, storm water detention storage structures (including wet basins), storm water retention storage structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff onsite, buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, maximization of open space and sequential systems (which combine several practices).

C. Structural measures should be placed on upland soils to the degree attainable.

D. The SWP3 shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed pre-development levels.

E. A permittee is required to prove that a detention/retention storage structure is either infeasible or ineffective before the City Engineer will approve an alternative BMP.

F. Design methods for storm water detention storage and water quality requirements shall be consistent with those required for large construction activities.

G. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

908 MAINTENANCE

A. The SWP3 shall be designed to minimize maintenance requirements.

B. A description of maintenance procedures needed to ensure the continued performance of control practices shall be provided as part of the SWP3, in compliance with the provisions of this Manual.

909 STORM WATER MANAGEMENT EASEMENTS

A. Access shall be ensured to all permanent storm water management facilities at a site for the purpose of free flow of storm water and future administration, inspection, maintenance, repair and replacement by securing all the storm water easements needed on a permanent basis as required by this Manual.

B. Storm water management easements shall be provided by the owner or operator to all waterways and storm water management structures and facilities, outside dedicated public road right-of-ways, as required for:

1. Access for facility inspections and maintenance
2. Future repair and replacement, or
3. Preservation of storm water management facilities, conveyance, infiltration and detention storage areas and facilities, including flood routes for the 100-year storm event.

C. Those lots crossed by an easement shall be restricted against the planting within said easement of trees, shrubbery or plantings with woody growth characteristics, and against the construction therein of buildings, accessories buildings, fences, walls or any other obstructions to the free flow of storm water and the movement of inspectors

and maintenance equipment and shall also be restricted against the changing of final grade from that described by the grading plan.

D. Construction of such plantings, structures or changes of grade constitute a violation of this Manual and are subject to the enforcement actions and penalties of this Manual.

E. Removal of such plantings, structures or grade changes by the City will be at the expense of the property owner.

F. The purpose and physical characteristics of an easement shall be specified by the owner or operator as part of the SWP3 and approved by the City Engineer. The easements shall be recorded with all plans in the name of the City and shall remain in effect even with transfer of title through an operation and maintenance agreement, according to this Manual.

910 COMPLIANCE WITH OTHER REQUIREMENTS

The SWP3 shall be consistent with applicable State and/or local waste disposal, sanitary sewer or septic system regulations, including provisions prohibiting waste disposal by open burning and shall provide for the proper disposal of contaminated soils to the extent these are located within the permitted area.

SECTION 10

OPERATION AND MAINTENANCE OF SWP3 CONTROLS

1001 PROPER OPERATION AND MAINTENANCE

A. All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function, according to this Manual.

B. All sediment control practices shall be maintained in a functional condition until all up slope areas they control are permanently stabilized.

C. The permittee shall at all times properly operate and maintain all facilities and systems of storm water management (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the SWP3.

D. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee when necessary to achieve compliance with the conditions of the SWP3.

E. An SWP3 should be designed to minimize maintenance requirements.

F. Failure to maintain temporary and/or permanent improvements may result in enforcement action and penalties according to this Manual.

G. As part of an SWP3, the applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices outlined in the SWP3.

1002 CONTROL PRACTICE INSPECTION DURING CONSTRUCTION

A. Inspections by the City Engineer or his authorized agents may be conducted to ensure that the control practices are functional, evaluate whether the SWP3 is adequate and properly implemented in accordance with the schedule proposed, determine the overall effectiveness of the plan and determine the need for additional control measures.

1. Erosion and sediment control measures identified in the SWP3 may be observed to ensure that they are operating correctly.
2. Disturbed areas and areas used for storage of materials that are exposed to precipitation may be inspected for evidence of or the potential for pollutants entering the storm drainage system.
3. Discharge locations may be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters.

4. Locations where vehicles enter or exit the site may be inspected for evidence of off-site vehicle tracking.

B. If inspection reveals that a control practice is in need of repair or maintenance, it must be repaired or maintained by the date specified by the City Engineer.

C. If inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the SWP3 must be amended according to this Manual and the new control practice must be installed by the date specified by the City Engineer.

D. If inspection reveals that a control practice has not been implemented in accordance with the schedule contained in the SWP3, the control practice must be implemented by the date specified by the City Engineer. If the inspection reveals that the planned control practice is not needed, the permittee must submit to the City Engineer a statement of explanation as to why the control practice is not needed within ten (10) days from the date of the inspection.

1003 POST-CONSTRUCTION INSPECTION AND MAINTENANCE REQUIREMENTS

A. Post-construction inspection and maintenance is required for all storm water management practices to ensure the system functions as designed.

B. Requirements shall be recorded with either the deed of the property and any subsequent split(s) of the property, or when in an approved subdivision, with the final plat for the property, or be included as special covenants and/or restrictions filed with the deed or plat.

C. When a facility is not operating as designed or has altered from its original design, it is the property owner or operator who shall be responsible to bring the facility into conformance with its design standards.

D. Such inspection and maintenance is required as follows:

1. The person or entity (e.g. property owner, homeowner's association) responsible for long-term maintenance including repairs as necessary for the facilities is the property owner.
2. Periodic and routine maintenance is required to maintain performance of each practice and easement.
3. Periodic inspections to ensure proper performance of each practice between scheduled maintenance are required.
4. The person or entity responsible for the operation and maintenance of a storm water management facility shall make records of the installation and

of all maintenance and repairs, and shall retain the records for at least ten (10) years.

5. Unauthorized alteration to any practice, easement, drainage system or watercourse is prohibited without prior written approval from the City Engineer.
6. The City Engineer or authorized agent shall be granted access to all storm water management facilities at reasonable times for inspections to document the facilities condition and ensure its originally designed function according to the provisions of this Manual.

E. Storm water management facilities must undergo, at the minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this Manual and accomplishment of its purposes. These needs may include: removal of silt, litter and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation.

F. Any maintenance needs found must be addressed in a timely manner and the inspection and maintenance requirements should be increased as necessary to ensure proper functioning of the storm water management facility.

G. Operation and maintenance records shall be made available to the City during inspection of the facility and at other reasonable times upon request.

H. The City may, at any time in writing, require a time frame in which to address any maintenance needs of a storm water management facility and/or an increase to inspection and maintenance requirements.

1004 MAINTENANCE WITHIN PUBLIC RIGHT-OF-WAY

The City may accept responsibility of a permanent storm water management practice for maintenance, if requested by an owner or operator of a site, provided such facility:

- A. Is located within a public right-of way;
- B. Meets all the requirements of this Manual; and
- C. Includes adequate and perpetual access and sufficient area for inspection and regular maintenance.

1005 STORM WATER MANAGEMENT FACILITY FUND

A. The City may, at any time, require a storm water management facility fund be established to inspect, operate, maintain, repair and/or replace a storm water facility outside of the public right-of-way.

B. The fund shall be subsidized by and accumulated through an annual assessment levied against all benefiting property owners of lots within the development drainage area of the facility.

C. The total annual amount deposited into the fund shall be determined by the City Engineer. It may be based on the maintenance plan developed for the facility as part of the SWP3 and/or may reflect the size and type of facility and the expected cost of routine and periodic maintenance. The assessment amount may be reviewed and updated yearly by the City Engineer.

D. The annual amount assessed to property owners shall be calculated as the total annual amount of the fund divided by the number of benefiting properties.

E. The City may draw upon the maintenance fund of a storm water facility at any time for inspection, operation, maintenance, repair and/or replacement. Work will be performed by or under the supervision of the City Engineer.

SECTION 11

INSPECTION, ENFORCEMENT ACTION AND PENALTIES

1101 GENERAL

A. If it appears that a violation of any part of this Manual exists, enforcement actions and penalties according to this Manual may be initiated by the City.

B. All permitted earth-disturbing activities may be subject to site inspection and monitoring by the City Engineer or his designated agents to determine and record compliance with this Manual.

C. All improvements shall be constructed in conformity with the approved Drainage Plan and/or SWP3.

1102 POWERS AND AUTHORITY OF INSPECTORS

A. The City Engineer and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all properties for the purposes of inspection, observation, measurement, sampling, testing and reviewing and copying records in accordance with the provisions of this Manual.

B. While performing the necessary work on private properties referred to in A., the City Engineer or duly authorized employees of the City shall observe all safety rules applicable to the premises established by the company and the company shall be held harmless for injury or death to the City employees and the City shall indemnify the company against loss or damage to its property by City employees and against liability claims and demands for personal injury or property damage asserted against the company and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the company to maintain safe conditions.

C. The City Engineer and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all private properties through which the City holds an easement for the purposes of, but not limited to, inspection, observation, measurement and sampling of any portion of a drainage or storm water management facility lying within such easement.

1103 ACCESS AND INSPECTION

A. The City shall have the right to set up at sites and/or facilities subject to this Manual such devices as the City determines necessary to conduct monitoring and/or sampling of a site and/or facility's storm water discharge.

B. The City shall have the right to require a site and/or facility owner or operator to install storm water discharge monitoring equipment as necessary. This sampling and

monitoring equipments shall be maintained at all times in safe and proper operating condition by the site and/or facility owner or operator at the owner or operator's expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.

C. Any temporary or permanent obstruction to safe and reasonable access to the facility to be inspected and/or sampled shall be promptly removed by the site and/or facility's owner or operator at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the site and/or facility owner or operator.

D. Unreasonable delays in allowing the City access to a site and/or facility subject to this Manual is subject to enforcement actions and penalties of this Manual.

1104 EMERGENCY MS4 SUSPENSION

A. The City may, without prior notice, suspend MS4 access to a person when it appears to the City that such suspension is necessary to stop an actual or threatened discharge which presents or threatens an imminent or substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States.

B. Any person notified of the suspension of the MS4 access shall within a reasonable period of time, as determined by the City, cease all discharges.

C. In the event of failure of the discharger to comply voluntarily with the suspension order, the City shall commence judicial proceedings immediately thereafter to compel the discharger's compliance with such order.

D. The City shall reinstate MS4 access and terminate the aforementioned judicial proceedings pending proof by the discharger of the elimination of the noncomplying discharge or conditions creating the threat of imminent or substantial danger.

E. The City reserves the right to require pretreatment of a discharge.

1105 STOP WORK ORDER

A. The City Engineer may issue an immediate Stop Work Order if the violator failed to obtain any federal, State, or local permit necessary for sediment and erosion control, earth movement, clearing or cut and fill activity.

B. No Stop Work Order will be issued under this Manual against any public highway, transportation or drainage improvement or maintenance project undertaken by a government agency or political subdivision in accordance with a statement of its standard sediment control policies that is approved by the City Engineer.

1106 NOTICE OF VIOLATION

A. Whenever the City Engineer finds that a person has violated a prohibition or failed to meet a requirement of this Chapter, the City Engineer may serve or cause to be served upon such person, a written Notice of Violation either personally or by certified or registered mail, return receipt requested, stating the nature of the alleged violation.

B. Such Notice may order compliance to this Manual within the time established by the City Engineer in the Notice, by requiring without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of illicit connections or discharges;
3. That violating discharges, practices, or operations shall cease and desist;
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; or
5. The implementation of source control or treatment BMPs.

C. Within fourteen (14) days of the date of receipt of the Notice, the violator shall respond personally or in writing to the City, advising of its position with respect to the allegations and any compliance requirements.

D. Thereafter, the parties shall meet at an Administrative Adjustment to ascertain the veracity of the allegations and where necessary, establish a plan for the satisfactory correction thereof.

1107 SHOW CAUSE HEARING

A. The City may order any person which causes or allows conduct prohibited by the Notice, to show cause before the City or its duly authorized representative, why the proposed MS4 access termination should not be taken, when:

1. A person fails to respond to the City within fourteen (14) days of the date of receipt of a Notice of Violation;
2. A plan cannot be established for correction at an Administrative Adjustment; or
3. The violation is not corrected by timely compliance with the plan established at the Administrative Adjustment.

B. A written notice shall be served on the violator by personal service, certified or registered mail, return receipt requested specifying:

1. The time and place of the hearing to be held by the City or its designee regarding the violation;
2. The reason why the enforcement action is to be taken;
3. The proposed enforcement action; and

4. Directing such person to show cause before the City or its designee why the proposed enforcement action should not be taken.
- C. The notice of the hearing shall be served no less than ten (10) days before the hearing.
- D. Service may be made on any agent, officer or authorized representative of the violator.
- E. The proceedings at the hearing shall be considered by the City which shall then enter appropriate orders with respect to the alleged improper activities of the violator.
- F. Appeal of such orders may be taken by the violator in accordance with O.R.C. Chapter 2506.

1108 JUDICIAL PROCEEDINGS

Following the entry of any order by the City with respect to the conduct of a person contrary to the provisions of this Manual, the Director of Administration for the City may, following the authorization of such action by the City, commence an action for appropriate legal and/or equitable relief in the Court of Common Pleas.

1109 RIGHT OF APPEAL

A. Any person in violation of this Manual or any interested party shall have the right to request in writing an interpretation or ruling by the City on any matter covered by this Manual and shall be entitled to a prompt written reply.

B. In the event that such inquiry is by a violator and deals with matters of performance or compliance with this Manual, receipt of a violator's request shall stay all enforcement proceedings pending receipt of the aforesaid written reply.

C. Appeal to any final judicial order issued pursuant to this Manual may be taken in accordance with O.R.C. Chapter 2506.

1110 RECOVERY OF COSTS INCURRED BY THE CITY

A. Any person violating any of the provisions of this Manual or who discharges or causes a non-storm water discharge or obstruction or causes damage to or impairs the City's MS4, shall be liable to the City for any expense, loss or damage caused by such violation or discharge.

B. The City shall bill such person for the costs incurred by the City for any cleaning, repair or replacement work caused by the violation or discharge.

C. The City may seek to recover all attorneys' fees, court costs and other expenses associated with the enforcement of this Manual, including but not limited to sampling and monitoring expenses.

D. Refusal to pay the assessed costs shall constitute a violation of this Manual, enforceable under the provisions of the Manual.

1111 ADMINISTRATIVE PENALTIES

A. The City may assess penalties ranging in the amount of one hundred dollars (\$100) to three hundred dollars (\$300) per day upon MS4 users who fail to comply with the permits issued by the City or other regulatory agencies.

B. Such administrative penalties shall be determined by the City Engineer based on the severity of the violation and the enforcement category assigned to the violator.

C. The City may issue administrative compliance schedules to persons who fail to achieve compliance with permits issued by the City or other regulatory agencies.

1112 LITIGATION

A. Any person who violates an order of the City or fails to comply with any provision of this Manual shall be penalized in the manner set forth in Section 1213.

B. Discharges which interfere with the proper operation of or cause damage to the MS4 may be liable under State and/or Federal law which provides for penalties up to one hundred thousand dollars (\$100,000) per day and six (6) years in jail for a repeat knowing criminal violation.

1113 PENALTY

A. Whoever fails to perform an act required under this Manual or whoever performs an act forbidden by this Manual shall be fined not more than one thousand dollars (\$1,000) for each violation. Each day of any such violations shall constitute a separate offense.

B. No unauthorized person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure appurtenance or equipment which is part of the drainage or storm water management system. Whoever violates this provision shall be subject to immediate arrest under charge of disorderly conduct.

C. In addition to the criminal penalties provided herein, whoever violates any provision of this Manual shall be liable to the City for any fines, expenses, losses or abnormal costs incurred by the City and caused by such violation.

1114 COMPENSATORY ACTION

In addition to the enforcement proceedings, penalties and remedies authorized by this Manual, the City may seek an alternative compensatory action against a violator, including but not limited to storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

1115 REMEDIES NOT EXCLUSIVE

A. The remedies listed in this Manual are not exclusive of any other remedies available under any applicable federal, state or local law.

B. It is within the discretion of the City Engineer to seek cumulative remedies.

APPENDIX A

Application Number: _____

Engineering Permit Number: _____

City of Wooster Development Department
Engineering Division

City of Wooster Municipal Building
Division of Engineering
538 N. Market Street
Wooster, Ohio 44691
330-263-5251 Fax: 330-263-5283

Permit Application For: Development Permit

This PERMIT APPLICATION is for Subdivision Plans, Infrastructure Improvements, Commercial Development Site Plans and other Miscellaneous Improvements.

Project Name: _____ Inside City Limits: Yes No

Project Address: _____ Resid'l Comm'l Indust'l Rplacem't

Owner: _____ Contractor/Agent: _____

Phone: _____ Fax: _____ Phone: _____ Fax: _____

Mailing Address: _____ Mailing Address: _____

Architect: _____ Engineer: _____

Phone: _____ Fax: _____ Phone: _____ Fax: _____

Mailing Address: _____

Work to be done: SUBDIVISION PLANS COMMERCIAL DEVELOPMENT INFRASTRUCTURE IMPROVEMENTS INDUSTRIAL DEVELOPMENT SITE IMPROVEMENTS OTHER IMPROVEMENTS

Description of Work: _____

Estimated Cost of Work Performed under this Permit: _____

Total Development area:

The total development area is the total area to be subdivided or improved. For major subdivisions (5 or more lots of 5 acres or less) fees shall be based on the number of lots. Fees for all other developments shall be based on the actual disturbed and/or improved area of the site, calculated in acres. This area shall be clearly delineated on the plans.

Total development area (acres) _____ Number of lots _____ Average lot area (acres) _____

Total improved area _____ (acres)

Infrastructure Information and Dimensions

Fill Out Applicable Items

1. STREET FOOTAGE _____ (lineal feet along centerlines)
2. UTILITIES FOOTAGE _____ (lineal feet of water lines, sanitary sewers and storm sewers 6" and larger)
3. DETENTION BASIN AREA _____ (area draining storm water to basin in acres)
4. SANITARY PUMP STATION REQUIRED? _____ YES _____ NO
5. ESTIMATED TIME TO CONSTRUCT IMPROVEMENTS _____ (actual working days, i.e. "60 days", etc.)

APPENDIX B

Summary of 2002 Nationwide Permits¹

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 1 – Aids to Navigation	10	none	PCN not required	No	navigable waters of the U.S.	none	
NWP 2 – Structures in Artificial Canals	10	none	PCN not required	No	navigable waters of the U.S.	none	
NWP 3 – Maintenance	10/404						
(i) repair, rehabilitation, and replacement of previously authorized, currently serviceable structures or fills		authorizes only minor deviations for maintenance	PCN not required	No	all waters of the U.S.	none	if damage is due to a discrete event, maintenance activity must be done within 2 years, unless time limit waived by district engineer
(ii) discharges associated with removal of accumulated sediments and debris in the vicinity of existing structures		200 feet from structure	all activities	No	all waters of the U.S.	none	also authorizes placement of rip rap to protect the structure
(iii) discharges associated with restoration of upland areas damaged by a storm, flood, or other discrete event		restore to original ordinary high water mark; dredge up to 50 cubic yards	all activities	No	all waters of the U.S.	none	PCN to district engineer within one year of damaging event; work must start or be under contract within two years of date of damage
NWP 4 – Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities	10/404	none	PCN not required	No	all waters of the U.S.	none	does not authorize impoundments or artificial reefs; does not authorize covered oyster trays or clam racks
NWP 5 – Scientific Measurement Devices	10/404	25 cubic yards for weirs and flumes	10 to 25 cubic yards for weirs and flumes	No	all waters of the U.S.	none	
NWP 6 – Survey Activities	10/404	none	PCN not required	No	all waters of the U.S.	none	does not authorize fills for roads or pads; does not authorize permanent structures
NWP 7 – Outfall Structures and Maintenance	10/404						
(i) construction of outfall structures and associated intake structures		none	all activities	No	all waters of the U.S.	none	activity must comply with National Pollutant Discharge Elimination System Program
(ii) maintenance excavation and dredging to remove accumulated sediments		restore to original design capacity	all activities	Yes	all waters of the U.S.	none	for maintenance dredging, PCN must describe original design capacities and configurations of facility
NWP 8 – Oil and Gas Structures	10	none	PCN not required	No	navigable waters of the U.S.	none	limited to facilities in areas leased by Minerals Management Service of the Department of the Interior

¹ This table is intended to provide general information on the nationwide permits published in the January 15, 2002, *Federal Register*, as amended. Prospective users of the nationwide permits should read the text of the nationwide permits, general conditions, and definitions to assess whether a particular nationwide permit could authorize a specific project. Prospective users should also review the pre-construction notification requirements of the nationwide permits and contact the appropriate Corps district to determine if any regional conditions have been imposed on the nationwide permits, and if additional requirements are necessary to obtain water quality certification.

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 9 – Structures in Fleeting and Anchorage Areas	10	none	PCN not required	No	navigable waters of the U.S.	None	applies to structures and buoys placed in anchorage or fleeting areas established by the U.S. Coast Guard
NWP 10 – Mooring Buoys	10	none	PCN not required	No	navigable waters of the U.S.	None	
NWP 11 – Temporary Recreational Structures	10	none	PCN not required	No	navigable waters of the U.S.	none	structures must be removed within 30 days after use
NWP 12 – Utility Line Activities	10/404	1/2 acre	see text of NWP	Yes			
(i) utility lines			see text of NWP	Yes	all waters of the U.S.	none	must restore area to pre-construction contours
(ii) utility line substations		1/2 acre	>1/10 acre	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters	none	
(iii) foundations for overhead utility line towers, poles, and anchors		minimum necessary	see text of NWP	Yes	all waters of the U.S.	none	separate footings for each tower leg should be used where feasible
(iv) access roads		1/2 acre	>500 feet in waters of U.S.; construction with impervious materials	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters	none	access roads should be constructed as near as possible to pre-construction contours and elevations
NWP 13 – Bank Stabilization	10/404	minimum necessary	>500 linear feet; or >1 cubic yard per running foot	No	all waters of the U.S., except special aquatic sites	none	does not authorize bank stabilization activities in wetlands and other special aquatic sites
NWP 14 – Linear Transportation Projects	10/404	1/2 acre in non-tidal waters; or 1/3 acre in tidal waters	>1/10 acre; discharges into special aquatic sites	Yes	all waters of the U.S.	simplified acreage limits; removed 200 linear foot limit	does not authorize storage buildings, parking, lots, train stations, aircraft hangars, or other non-linear transportation facilities; PCN must include compensatory mitigation proposal and minimization statement
NWP 15 – U.S. Coast Guard Approved Bridges	404	none	PCN not required	No	navigable waters of the U.S.	none	causeways and approach fills for bridges are not authorized by this NWP; these activities may require individual or regional general permits
NWP 16 – Return Water From Upland Contained Disposal Areas	404	none	PCN not required	No	all waters of the U.S.	none	water quality issues addressed through Section 401 certification process
NWP 17 – Hydropower Projects	404	none	all activities	No	all waters of the U.S., except navigable waters	none	applies to activities licensed by the Federal Energy Regulatory Commission or activities exempt from licensing requirements
NWP 18 – Minor Discharges	10/404	25 cubic yards; 1/10 acre of special aquatic sites	>10 cubic yards or discharges into special aquatic sites	Yes	all waters of the U.S.	none	does not authorize stream diversions

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 19 – Minor Dredging	10/404	25 cubic yards	PCN not required	No	navigable waters of the U.S.	none	does not authorize activities in coral reefs, submerged aquatic vegetation beds, anadromous fish spawning areas, or wetlands
NWP 20 – Oil Spill Cleanup	10/404	none	PCN not required	No	all waters of the U.S.	none	authorizes activities subject to the National Oil and Hazardous Substances Pollution Contingency Plan and any existing state contingency plan
NWP 21 – Surface Coal Mining Activities	10/404	none	all activities	Yes	all waters of the U.S.	permittee must receive written verification from Corps before starting work; mitigation may be required by district engineer to ensure minimal adverse effects	authorizes surface coal mining and reclamation activities authorized by the U.S. Department of the Interior, Office of Surface Mining or states with programs approved under the Title V of the Surface Mining Control and Reclamation Act of 1977; PCN must include mitigation plan
NWP 22 – Removal of Vessels	10/404	none	removal of vessels listed or eligible for National Register of Historic Places	No	all waters of the U.S.	none	does not authorize maintenance dredging, shoal removal, or river bank snagging
NWP 23 – Approved Categorical Exclusions	10/404	none	PCN not required	No	all waters of the U.S.	none	categorical exclusions must be approved by the Office of the Chief of Engineers
NWP 24 – State Administered Section 404 Program	10	none	PCN not required	No	navigable waters of the U.S.	none	does not authorize activities in navigable waters that require only a Section 10 permit
NWP 25 – Structural Discharges	404	none	PCN not required	No	all waters of the U.S.	none	structure may require Section 10 permit if located in navigable waters of the U.S.; does not authorize building support pads
NWP 27 – Stream and Wetland Restoration Activities	10/404	none	certain activities on public and private land (see text of NWP)	No	all waters of the U.S.	simplified paragraph (a); also authorizes construction of oyster habitat in unvegetated tidal waters	does not authorize stream channelization, conversion of streams to another aquatic use, net conversion of wetlands to other aquatic uses, or relocation of tidal waters
NWP 28 – Modifications of Existing Marinas	10	activities limited to authorized marina area	PCN not required	No	navigable waters of the U.S.	none	does not authorize dredging, additional slips, dock spaces, or expansion in waters of the U.S.
NWP 29 – Single Family Housing	10/404	1/4 acre	all activities	Yes	non-tidal waters of the U.S., including non-tidal wetlands	can authorize work in 100-year floodplain if activity complies with floodplain management requirements	PCN must include statement that the housing activity will be a personal residence of the permittee

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 30 – Moist Soil Management for Wildlife	404	none	PCN not required	No	all waters of the U.S., except navigable waters	also authorizes activities on property owned or managed by local governments	does not authorize construction of new dikes, roads, water control structures, etc.; does not authorize conversion of wetlands to uplands; does not authorize impoundments
NWP 31 – Maintenance of Existing Flood Control Facilities	10/404	maintenance baseline approved by district engineer	all activities	Yes	all waters of the U.S.	mitigation required once when maintenance baseline established; authorizes emergency maintenance; authorizes maintenance in open waters within facility that are not part of a constructed channel	PCN must indicate location of dredged material disposal sites and baseline information
NWP 32 – Completed Enforcement Actions	10/404	5 acres of non-tidal wetlands or 1 acre of tidal wetlands (see text of NWP)	all activities	No	all waters of the U.S.	added provision extending applicability of this NWP to authorize activities required by Court decisions or settlement agreements for certain other statutes (see text of NWP)	
NWP 33 – Temporary Construction, Access, and Dewatering	10/404	none	all activities	No	all waters of the U.S.	none	associated primary activity must be authorized by Corps or U.S. Coast Guard, or be exempt from permit requirements; PCN must include restoration plan
NWP 34 – Cranberry Production Activities	404	10 acres, but activity cannot result in net loss of wetland acreage	all activities	Yes	all waters of the U.S., except navigable waters	none	does not authorize discharges in waters of the U.S. for attendant features, such as warehouses, processing facilities, or parking areas
NWP 35 – Maintenance Dredging of Existing Basins	10	dredging to previously authorized depths or controlling depths, whichever is less	PCN not required	No	navigable waters of the U.S.	none	dredged material must be deposited at upland sites
NWP 36 – Boat Ramps	10/404	50 cubic yards of fill; 20 foot width for boat ramp	PCN not required	No	all waters of the U.S., except special aquatic sites	none	does not authorize placement of material into special aquatic sites
NWP 37 – Emergency Watershed Protection and Rehabilitation	10/404	none	all activities	No	all waters of the U.S.	added provision extending applicability to Department of the Interior's Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation Program	

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 38 – Cleanup of Hazardous and Toxic Waste	10/404	none	all activities	Yes	all waters of the U.S.	none	does not authorize the establishment of new disposal sites or the expansion of existing disposal sites
NWP 39 – Residential, Commercial, and Institutional Developments	10/404	1/2 acre; 300 linear feet of perennial or intermittent stream bed	>1/10 acre; discharges into open waters	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters	waiver can be issued by district engineer to authorize loss of greater than 300 linear feet of intermittent stream bed; simplified subdivision provision; eliminated prohibition against stream channelization or relocation below 1 cubic foot per second point of stream	PCN must include avoidance and minimization statement and a compensatory mitigation proposal; activities that do not require a PCN must be reported to the district engineer
NWP 40 – Agricultural Activities	404	1/2 acre; 300 linear feet of perennial or intermittent stream bed	>1/10 acre; >300 linear feet of intermittent stream bed; construction of farm buildings in farmed wetlands	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters and navigable waters of the U.S.	waiver can be issued by district engineer to authorize relocation more than 300 linear feet of drainage ditches constructed in intermittent streams	Natural Resources Conservation Service takes lead for most activities undertaken by U.S. Department of Agriculture program participants; activities where NRCS is the lead must be reported to the district engineer; PCN must include compensatory mitigation proposal
NWP 41 – Reshaping Existing Drainage Ditches	404	none	reshape >500 linear feet of drainage ditch	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters and navigable waters of the U.S.	none	reshaping drainage ditch cannot increase capacity of ditch or drain additional waters of the U.S.; does not authorize relocation of drainage ditches constructed in waters of the U.S.
NWP 42 – Recreational Facilities	404	1/2 acre; 300 linear feet of perennial or intermittent stream bed	>1/10 acre; >300 linear feet of intermittent stream bed	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters and navigable waters of the U.S.	waiver can be issued by district engineer to authorize loss of greater than 300 linear feet of intermittent stream bed	recreational facilities are integrated into natural landscape and do not substantially change pre-construction grades or contours; PCN must include compensatory mitigation proposal
NWP 43 – Stormwater Management Facilities	404	1/2 acre for construction of new facilities; 300 linear feet of perennial or intermittent stream bed	>1/10 acre; >300 linear feet of intermittent stream bed	Yes	non-tidal waters of the U.S., except non-tidal wetlands adjacent to tidal waters and navigable waters of the U.S.	waiver can be issued by district engineer to authorize loss of greater than 300 linear feet of intermittent stream bed; can authorize stormwater management facilities in 100-year floodplain above headwaters	does not authorize construction of new SWM facilities in perennial streams; PCN must include avoidance and minimization statement, maintenance plan, and compensatory mitigation proposal

Nationwide Permit	Statutory Authority	Limits	Pre-Construction Notification (PCN) Threshold	Delineation Required?	Applicable Waters	Changes in 2002	Other Information
NWP 44 – Mining Activities	10/404	1/2 acre	all activities	No	isolated waters and non-tidal wetlands adjacent to headwater streams; aggregate mining in lower perennial streams	none	PCN must include documentation of avoidance and minimization requirements; PCN must include description of waters of the U.S. adversely affected by the proposed work; PCN must include reclamation plan for certain mining activities

APPENDIX C

City of Wooster : Division of Engineering

I-D-F Rainfall Intensities Table

(for use with Rational Method)

Time of Concentration	Storm Frequency					
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
t_c (minutes)	I (in/hr)	I (in/hr)	I (in/hr)	I (in/hr)	I (in/hr)	I (in/hr)
5.00	4.60	6.50	7.80	9.20	10.60	11.60
10.00	3.50	4.80	5.70	6.80	7.80	8.50
15.00	2.70	3.60	4.50	5.30	6.00	6.70
20.00	2.40	3.10	3.80	4.50	5.20	5.70
25.00	2.00	2.60	3.20	3.80	4.60	5.00
30.00	1.80	2.40	2.90	3.40	4.00	4.50
40.00	1.50	1.90	2.40	2.70	3.40	3.60
50.00	1.40	1.70	2.00	2.40	2.70	3.40
60.00	1.20	1.40	1.70	2.10	2.40	2.60
70.00	0.90	1.30	1.60	1.70	2.00	2.30
80.00	0.80	1.20	1.40	1.60	1.80	2.10
90.00	0.80	1.00	1.30	1.50	1.60	1.90
100.00	0.70	1.00	1.20	1.40	1.60	1.80
110.00	0.70	0.90	1.10	1.30	1.50	1.70
120.00	0.70	0.80	1.00	1.30	1.50	1.70
150.00	0.50	0.70	0.90	1.00	1.30	1.40
180.00	0.50	0.60	0.70	0.90	1.00	1.20

