



CITY OF MIDDLETOWN, OHIO

**EROSION AND SEDIMENT
CONTROL RULES &
REGULATIONS**

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EROSION AND SEDIMENT CONTROL RULES & REGULATIONS

CHAPTER 1: PURPOSE

The purpose of this regulation is to establish technically feasible and economically reasonable standards to achieve a level of erosion and sediment control that will minimize damage to property and degradation of water resources and wetlands, and will promote and maintain the health and safety of the citizens of the City of Middletown:

- (A) This regulation shall:
1. Allow development while minimizing increases in downstream flooding, erosion, and sedimentation; and
 2. Reduce water quality impacts to receiving water resources and wetlands that may be caused by new development or redevelopment activities.
- (B) This regulation applies to land used or being developed, either wholly or partially, for new or relocated projects involving highways, underground cables, or pipelines; subdivisions; industrial, commercial, institutional, or residential projects; building activities on farms; redevelopment activities; general grading; and all other uses that are not specifically exempted in (C).
- (C) This regulation does not apply to general soil disturbing activities of less than one tenth (1/10th) of an acre, unless required by the Director of Public Works & Utilities.

CHAPTER 2: DEFINITIONS

For the purpose of this chapter, the words and phrases shall be defined as follows, unless the context clearly indicates or requires a different meaning.

Acre: A measurement of area equaling 43,560 square feet.

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Construction Entrance: The permitted points of ingress and egress to areas of soil disturbance regulated under this regulation.

Cut: An excavation that reduces an existing elevation, as in road or foundation construction.

Development Area: A parcel or contiguous parcels owned by one person or persons, or operated as one common plan of development, and used or being developed for commercial, industrial, residential, institutional, or other construction or alteration that changes runoff characteristics.

Director of Public Works & Utilities: The City of Middletown Director of Public Works & Utilities or duly authorized representative.

Disturbed Area: An area of land subject to erosion due to the removal of vegetative cover and/or soil

disturbing activities.

Drainage: The removal of excess surface water or groundwater from land by surface or subsurface drains.

Erosion: The process by which the land surface is worn away by the action of wind, water, ice, gravity, or any combination of those forces.

Erosion and Sediment Control: The control of soil material, both mineral and organic, to minimize the removal of soil material from the land surface and to prevent its transport out of a disturbed area by means of wind, water, ice, gravity, or any combination of those forces.

Erosion and Sediment Control Plan (Esc Plan): The written document meeting the requirements of this regulation that sets forth the plans and practices to be used to minimize soil erosion and prevent off-site disposal of soil sediment by containing sediment on-site or by passing sediment-laden runoff through sediment control measures during and after development.

Final Stabilization: All soil disturbing activities at the site have been completed and a uniform perennial vegetative cover with a density of at least 80% cover for the area has been established or equivalent stabilization measures, such as the use of mulches or geotextiles, have been employed.

Larger Common Plan of Development or Sale: A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Maximum Extent Practicable: The level of pollutant reduction that owners of municipal separate storm sewer systems regulated fewer than 40 C.F.R. Parts 9, 122, 123, and 124, referred to as the NPDES Storm Water Phase II regulations, must meet.

NPDES: National Pollutant Discharge Elimination System. A regulatory program in the Federal Clean Water Act that prohibits the discharge of pollutants into surface waters of the United States without a permit.

Person: Any individual, corporation, firm, trust, commission, board, public or private partnership, joint venture, agency, unincorporated association, municipal corporation, county or state agency, the federal government, other legal entity, or an agent thereof.

Phasing: Clearing a parcel of land in distinct sections, with the stabilization of each section before the clearing of the next.

Professional Engineer: A Professional Engineer registered in the State of Ohio.

Rainwater and Land Development: Ohio's standards for storm water management, land development, and urban stream protection. The most current edition of these standards shall be used with this regulation.

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

Sediment: The soils or other surface materials that are or have been transported or deposited by the action of wind, water, ice, gravity, or any combination of those forces, as a product of erosion.

Sedimentation: The deposition or settling of sediment.

Setback: A designated transition area around water resources or wetlands that is left in a natural, usually vegetated, state so as to protect the water resources or wetlands from runoff pollution.

Construction activities in this area are restricted or prohibited as required in this regulation.

Soil Disturbing Activity: Clearing, grubbing, grading, excavating, filling, or other alteration of the earth's surface where natural or human made ground cover is destroyed and which may result in, or contribute to, erosion and sediment pollution.

Soil & Water Conservation District: An entity organized under Chapter 1515 of the Ohio Revised Code referring to either to the Soil and Water Conservation District Board or its designated employee(s). Hereafter referred to as the SWCD.

Stabilization: The use of Best Management Practices, such as seeding and mulching, that reduce or prevent soil erosion by water, wind, ice, gravity, or a combination of those forces.

Surface Waters of the State: All streams, lakes, reservoirs, ponds, marshes, wetlands or other waterways which are situated wholly or partially within the boundaries of the state, except those private waters which 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.

Unstable Soils: A portion of land surface or area which is identified by the City of Middletown Engineering and Environmental Services Director as prone to slipping, sloughing, or landslides, or is identified by the U.S. Department of Agriculture Natural Resource Conservation Service methodology as having low soil strength.

Water Resource: Any public or private body of water including lakes and ponds, as well as streams, gullies, ditches, swales, or ravines that have banks and a defined bed where terrestrial vegetation cannot establish roots, and a definite direction of flow, either continuously or intermittently flowing.

Waters of the United States: As defined in the CWA, "waters of the United States" applies only to surface waters, rivers, lakes, estuaries, coastal waters, and wetlands. Not all surface waters are legally "waters of the United States." Generally, those waters include the following: all interstate waters; intrastate waters used in interstate and/or foreign commerce; tributaries of the above; territorial seas at the cyclical high tide mark; and wetlands adjacent to all the above.

Wetland: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas (40 CFR 232, as amended).

City of Middletown: Throughout this regulation, this shall refer to the City of Middletown, its designated representatives, boards, or commissions.

CHAPTER 3: DISCLAIMER OF LIABILITY

Compliance with the provisions of this regulation shall not relieve any person from responsibility from damage to any person otherwise imposed by law. The provisions of this regulation are promulgated to promote the health and safety of the public and are not designed for the benefit of any individual or for the benefit of any particular parcel of property.

ESC Plan approval does not constitute assurance that the proposed BMPs will perform in the manner indicated by the design. The responsibility of the proper functioning, operation and maintenance of the BMPs remains with the owner. The owner shall be responsible for providing any additional means or methods necessary to meet the intent of these regulations.

CHAPTER 4: APPLICATION PROCEDURES

(A) DEVELOPMENT AREAS OF ONE (1) ACRE OR MORE OR LESS THAN ONE (1) ACRE AND PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE: Erosion and Sediment Control Plans (ESC Plan) are required for all development areas of one (1) acre or more, or less than one (1) acre if part of a larger common plan of development or sale. The following requirements apply:

1. The site owner may submit a Storm Water Pollution Prevention Plan (SWP3) prepared in accordance with Ohio EPA's NPDES Permit No. OHC000002, or the most recent version thereof, in lieu of a separate ESC Plan. In situations of conflict between OEPA requirements and City of Middletown requirements, the most restrictive shall prevail.
2. Two (2) sets of the ESC Plan, or SWP3, and supporting data required by this regulation shall be submitted to the City of Middletown as follows:
 - (a) For subdivisions: With submittal of the improvement plans.
 - (b) For other construction projects: With submittal of building and site plan to the Chief Building Official (CBO).
 - (c) For general clearing projects: Fifteen (15) working days prior to any soil disturbing activities.

(B) DEVELOPMENT AREAS OF LESS THAN ONE ACRE AND NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE: Site plans specifying erosion and sediment control measures are required for all development areas of less than one (1) acre that are not part of a larger common plan of development. The required erosion and sediment control best management practices for these sites are the following:

1. Construction Entrances: Construction entrances shall be built and shall serve as the only permitted points of ingress and egress to the development area. These entrances shall be built of a stabilized pad of aggregate stone or recycled concrete or cement sized greater than 2" in diameter, placed over a geotextile fabric, and constructed in conformance with specifications in the most recent edition of the Rainwater and Land Development Manual.
2. Street Sweeping: Streets directly adjacent to construction entrances and receiving traffic from the development area shall be cleaned weekly to remove sediment tracked off-site. If applicable, the catch basins on these streets nearest to the construction entrances shall also be cleaned weekly.
3. Stabilization: The development area shall be stabilized as detailed in Table 1.

Table 1: Stabilization

Area requiring stabilization	Time frame to apply erosion controls
Any disturbed area within 50 feet of a stream and not at final grade.	Within 2 days of the most recent disturbance if that area will remain idle for more than 21 days.
For all construction activities, any disturbed area, including soil stockpiles that will be dormant for more than 21 days but less than one year, and not within 50 feet of a stream.	Within 7 days of the most recent disturbance within the area
Disturbed areas that will be idle over winter	Prior to onset of winter weather
NOTE: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching or erosion matting.	

4. Inlet Protection. Erosion and sediment control practices, such as boxed inlet protection, shall be installed to minimize sediment-laden water entering active storm drain systems. Straw or hay bales are not acceptable forms of inlet protection.
5. Inspection and Maintenance: All controls on the development area shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. Maintenance shall occur as detailed below
 - (a) When practices require repair or maintenance. If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment-settling pond, it must be repaired or maintained within three days of the inspection. Sediment settling ponds must be repaired or maintained within 10 days of the inspection.
 - (b) When practices fail to provide their intended function. If the inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the ESC Plan must be amended and the new control practice must be installed within 10 days of the inspection.
 - (c) When practices depicted on the ESC Plan are not installed. If the inspection reveals that a control practice has not been implemented in accordance with the schedule, the control practice must be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.

Chapters 6 and 7 of this regulation shall not apply to these sites. All other sections shall apply. Two (2) sets of these site plans shall be submitted to the City of Middletown as follows:

- i For single family home construction: With submittal of the plot plan to the CBO.
 - ii For general clearing projects disturbing more than 1/10th of an acre: Fifteen (15) working days prior to any soil disturbing activities.
- (C) The City of Middletown shall review the plans submitted under (A) or (B) and approve or return for revisions with comments and recommendations for revisions within twenty-one (21) working days after receipt of the plan.
- A plan rejected because of deficiencies shall receive a narrative report stating specific problems and the procedures for filing a revised plan. At the time the City of Middletown receives a revised plan, another twenty-one (21) day review period shall begin.
- (D) Soil disturbing activities shall not begin and building permits shall not be issued without an ESC Plan or a Site Plan approved by the City of Middletown.
- (E) ESC Plans for individual sublots, only required for those sublots that do not discharge storm water runoff into a central sediment basin for a development, will not be approved by the City of Middletown unless the larger common plan of development or sale containing the subplot is in compliance with these regulations.
- (F) Approvals issued in accordance with this regulation shall remain valid for one (1) year from the date of approval.

CHAPTER 5: CONFORMANCE WITH STATE AND FEDERAL REGULATIONS

- (A) Approvals issued in accordance with this regulation do not relieve the site owner of responsibility for

obtaining all other necessary permits and/or approvals from federal, state, and/or county agencies. If requirements vary, the most restrictive requirement shall prevail.

- (B) Soil disturbing activities regulated under this regulation shall not begin until all necessary state and federal permits have been granted to the site owner. These permits may include, but are not limited to, the following:
1. Ohio EPA NPDES Permits authorizing storm water discharges associated with construction activity or the most current version thereof. Proof of conformance with these requirements shall be a copy of the Ohio EPA Director's Authorization Letter for the NPDES Permit, or a letter from the site owner explaining why the NPDES Permit is not applicable.
 2. Section 401 of the Clean Water Act: Proof of conformance shall be a copy of the Ohio EPA Water Quality Certification application, public notice, or project approval, or a letter from the site owner verifying that a qualified professional has surveyed the site and found no waters of the United States. Such a letter shall be noted on site plans submitted to the Director of Public Works & Utilities. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the Ohio EPA at the time of application of this regulation.
 3. Ohio EPA Isolated Wetland Permit. Proof of conformance shall be a copy of Ohio EPA's Isolated Wetland Permit application, public notice, or project approval, or a letter from the site owner verifying that a qualified professional has surveyed the site and found no isolated wetlands. Such a letter shall be noted on site plans submitted to the Director of Public Works & Utilities. Isolated wetlands shall be delineated by protocols accepted by the Ohio EPA at the time of application of this regulation.
 4. Section 404 of the Clean Water Act: Proof of conformance shall be a copy of the U.S. Army Corps of Engineers Individual Permit application, if an Individual Permit is required for the development project, public notice, or project approval. If an Individual Permit is not required, the site owner shall submit proof of conformance with the U.S. Army Corps of Engineer's Nationwide Permit Program. This shall include one of the following:
 - (a) A letter from the site owner verifying that a qualified professional has surveyed the site and found no waters of the United States. Such a letter shall be noted on site plans submitted to the Director of Public Works & Utilities.
 - (b) A site plan showing that any proposed fill of waters of the United States conforms to the general and specific conditions specified in the applicable Nationwide Permit. Wetlands, and other waters of the United States, shall be delineated by protocols accepted by the US Army Corps of Engineers at the time of application of this regulation.
 5. Ohio Dam Safety Law: Proof of conformance shall be a copy of the ODNR Division of Water permit application, a copy of the project approval letter from the ODNR Division of Water, or a letter from the site owner explaining why the Ohio Dam Safety Law is not applicable.

CHAPTER 6: EROSION AND SEDIMENT CONTROL PLAN

- (A) In order to control sediment pollution of water resources and wetlands, the site owner shall submit an ESC Plan in accordance with the requirements of Chapter 4.
- (B) If the site is subject to Ohio EPA's NPDES Permit No. OHC000002 or the most recent version thereof, a copy of all the required inspection sheets shall be submitted to the Director of Public Works & Utilities within two (2) working days of the date that the inspection was conducted.
- (C) The ESC Plan shall be certified by a professional engineer or a certified professional erosion and

sediment control specialist.

(D) The ESC Plan shall incorporate measures as recommended by the most current edition of Rainwater and Land Development and shall include the following information:

1. Site description: The ESC Plan shall provide:

- (a) A description of the nature and type of the construction activity (e.g. 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) An estimate of the impervious area and percent imperviousness created by the soil-disturbing activity.
- (d) Existing data describing the soil and, if available, the quality of any known pollutant discharge from the site such as that which may result from previous contamination caused by prior land uses.
- (e) A description of prior land uses at the site.
- (f) An implementation schedule which describes the sequence of major soil-disturbing operations (i.e., grubbing, excavating, grading, utilities and infrastructure installation) and the implementation of erosion and sediment controls to be employed during each operation of the sequence.
- (g) The location and name of the immediate receiving stream or surface water(s) and the first subsequent receiving water(s).
- (h) 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) For subdivided developments where the ESC Plan does not call for a centralized sediment control capable of controlling multiple individual lots, a detailed drawing of a typical individual lot showing standard individual lot erosion and sediment control practices.
- (j) Location and description of any storm water discharges associated with dedicated asphalt and dedicated concrete plants associated with the development area and the best management practices to address pollutants in these storm water discharges.
- (k) Site map showing:
 - i. Limits of soil-disturbing activity of the site, including off site spoil and borrow areas.
 - ii. Soils types should be depicted for all areas of the site, including locations of unstable or highly erodible soils.
 - iii. Existing and proposed contours. This must include a delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed in acres.
 - iv. 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 site owner intends to fill or relocate for which the site owner is seeking approval from the Army Corps of Engineers and/or Ohio

EPA.

- v. Existing and planned locations of buildings, roads, parking facilities, and utilities.
 - vi. 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.
 - vii. Sediment ponds, including their sediment settling volume and contributing drainage area.
 - viii. 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.
 - ix. The location of designated stoned construction entrances where the vehicles will ingress and egress the construction site.
 - x. The location of any in-stream activities including stream crossings.
2. A soils engineering report. The Director of Public Works & Utilities may require the ESC Plan to include a Soils Engineering Report based upon his/her determination that the conditions of the soils are unknown or unclear so that additional information is required to protect against erosion or other hazards. This report shall be based on adequate and necessary test borings, and shall contain all the information listed below. Recommendations included in the report and approved by the Director of Public Works & Utilities shall be incorporated in the grading plans and/or other specifications for site development.
- (a) Data regarding the nature, distribution, strength, and erodibility of existing soils.
 - (b) If applicable, data regarding the nature, distribution, strength, and erodibility of the soil to be placed on the site.
 - (c) Conclusions and recommendations for grading procedures.
 - (d) Conclusions and recommended designs for interim soil stabilization devices and measures, and for permanent soil stabilization after construction are completed.
 - (e) Design criteria for corrective measures when necessary.
 - (f) Opinions and recommendations covering the stability of the site.

CHAPTER 7: PERFORMANCE STANDARDS

All development activity subject to these regulations shall be provided with erosion and sedimentation control (ESC) practices during all phases of construction. The standards outlined herein are general guidelines and shall not limit the right of the City to impose additional, more stringent requirements, nor shall the standards limit the right of the City to waive individual requirements.

The ESC Plan must contain a description of the controls appropriate for each construction operation and the site owner must implement such controls. The ESC Plan must clearly describe for each major construction activity the appropriate control measures; the general sequence during the construction process under which the measures will be implemented; and the contractor responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization).

The controls shall include the following minimum components:

- (A) **NON-STRUCTURAL PRESERVATION MEASURES:** The ESC Plan must make use of practices that preserve the existing natural condition to the maximum extent practicable. Such practices may include preserving riparian areas, preserving existing vegetation and vegetative buffer strips, phasing of construction operations in order to minimize the amount of disturbed land at any one time, and designation of tree preservation areas or other protective clearing or grubbing practices.

The site owner shall leave undisturbed a minimum setback, as required under any specified setback requirements established by the City, on either side of water resources and of Middletown Director of Public Works & Utilities.

- (B) **EROSION CONTROL PRACTICES:** The ESC Plan must make use of erosion controls that are capable of providing cover over disturbed soils. A description of control practices designed to restabilize disturbed areas after grading or construction shall be included in the ESC Plan. The ESC Plan must 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. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, the use of construction entrances, and the use of alternative ground cover.

Erosion control practices must meet the following requirements:

1. Stabilization. Disturbed areas must be stabilized as specified in Tables 2 and 3 below.

Table 2: Permanent Stabilization

Area requiring permanent stabilization	Time frame to apply erosion controls
Any area that will lie dormant for one year or more	Within 7 days of the most recent disturbance.
Any area within the required stream setback and at final grade (for disturbances allowed within the stream setback see (A)).	Within 2 days of reaching final grade.
Any other area at final grade	Within 7 days of reaching final grade within that area.

Table 3: Temporary Stabilization

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed area within the required stream setback and not at final grade (for disturbances allowed within the required stream setback see (A)).	Within 2 days of the most recent disturbance if that area will remain idle for more than 21 days.
For all construction activities, any disturbed area, including soil stockpiles that will be dormant for more than 21 days but less than one year, and not within the required stream setback.	Within 7 days of the most recent disturbance within the area
Disturbed areas that will be idle over winter	Prior to onset of winter weather

Note: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching or erosion matting.

2. Permanent stabilization of conveyance channels. Site owners shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding, mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques, or rock check dams, all as defined in the most recent edition of Rainwater and Land Development or the Field Office Technical Guide available at

www.nrcs.usda.gov/technical/efotg/.

- (C) **RUNOFF CONTROL PRACTICES.** The ESC Plan shall incorporate measures that control the flow of runoff from disturbed areas so as to prevent erosion. 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. Stormwater discharges during the five-year design storm shall be released to natural channels at a non-erosive velocity of less than three feet per second unless the of Middletown Director of Public Works & Utilities.
- (D) **SEDIMENT CONTROL PRACTICES.** The ESC Plan shall include a description of structural practices that shall store runoff, allowing sediments to settle and/or divert flows away from exposed soils or otherwise limit runoff from exposed areas. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: sediment settling ponds, silt fences, storm drain inlet protection, and earth diversion dikes or channels which direct runoff to a sediment settling pond. All sediment control practices must be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone are not considered a sediment control practice unless used in conjunction with a sediment settling pond.

Sediment control practices must meet the following requirements:

1. **Timing.** Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven days from the start of grubbing. They shall continue to function until the up slope development area is restabilized. As construction progresses and the topography are altered, appropriate controls must be constructed or existing controls altered to address the changing drainage patterns.
2. **Sediment settling ponds.** Concentrated storm water runoff and runoff from drainage areas that exceed the design capacity of silt fence or inlet protection, as determined in Table 3 below, shall pass through a sediment settling pond or equivalent best management practice upon approval from the Director of Public Works & Utilities.

The sediment-settling pond shall be sized to provide at least 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 must be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the sediment-settling pond must be less than or equal to five feet. The configuration between the inlets and the outlet of the basin must provide at least two units of length for each one unit of width (> 2:1 length/width ratio). Sediment must be removed from the sediment-settling pond when the design capacity has been reduced by 40 percent. This limit is typically reached when sediment occupies one-half of the basin depth. When designing sediment settling ponds, the site owner must consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls must be used where site limitations would preclude a safe design. The use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal is encouraged.

3. **Silt Fence and Diversions.** Sheet flow runoff from denuded areas shall be intercepted by silt fence or diversions to protect adjacent properties, water resources, and wetlands from sediment transported via sheet flow. Where intended to provide sediment control, silt fence shall be placed on a level contour and shall be capable of temporarily ponding runoff. The relationship between the maximum drainage areas to silt fence for a particular slope range is shown in Table 4 below. Storm water diversion practices shall be used to keep runoff away from disturbed areas and steep slopes. Such devices, which include swales, dikes or berms, may receive storm

water runoff from areas up to 10 acres.

Table 4: Maximum Drainage Area to Silt Fence

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

4. Inlet Protection. Erosion and sediment control practices, such as boxed inlet protection, shall be installed to minimize sediment-laden water entering active storm drain systems. Straw or hay bales are not acceptable forms of inlet protection.
5. Off site tracking of sediment and dust control. Best management practices must be implemented to ensure sediment is not tracked off-site and that dust is controlled. These best management practices must include, but are not limited to, the following:

- (a) Construction entrances shall be built and shall serve as the only permitted points of ingress and egress to the development area. These entrances shall be built of a stabilized pad of aggregate stone or recycled concrete or cement sized greater than 2" in diameter, placed over a geotextile fabric, and constructed in conformance with specifications in the most recent edition of the Rainwater and Land Development Manual.
- (b) Streets directly adjacent to construction entrances and receiving traffic from the development area shall be cleaned weekly to remove sediment tracked off-site. If applicable, the catch basins on these streets nearest to the construction entrances shall also be cleaned weekly.

Based on site conditions, the Director of Public Works & Utilities may require additional best management practices to control off site tracking and dust. These additional BMPs may include:

- (c) Silt fence or snow fence installed around the perimeter of the development area to ensure that all vehicle traffic adheres to designated construction entrances.
 - (d) Designated wheel-washing areas. Wash water from these areas must be directed to a designated sediment trap, the sediment-settling pond, or to a sump pump for dewatering in conformance with (G) of this regulation.
 - (e) Site owners shall take all necessary measures to comply with applicable regulations regarding fugitive of Middletown Director of Public Works & Utilities may require dust controls including the use of water trucks to wet disturbed areas, tarping stockpiles, temporary stabilization of disturbed areas, and regulation of the speed of vehicles on the site.
6. Stream Protection. Construction vehicles shall avoid water resources and wetlands. If the site owner is permitted, under (A), to disturb areas within the required setback for a water resource or wetland, the following conditions shall be addressed in the ESC Plan:
 - (a) All Best Management Practices and stream crossings shall be designed as specified in the most recent edition of the Rainwater and Land Development Manual.
 - (b) Sediment control practices shall be designed and implemented on site to protect water resources or wetlands from the impacts of sediment runoff.

- (c) No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond in-stream) shall be placed within a water resource or wetland.
 - (d) Where stream crossings for roads or utilities are necessary and permitted, the project shall be designed such that the number of stream crossings and the width of the disturbance within the required setback for a water resource or wetland are minimized.
 - (e) Temporary stream crossings shall be constructed if water resources or wetlands will be crossed by construction vehicles during construction.
 - (f) Construction of bridges, culverts, or sediment control structures shall not place soil, debris, or other particulate material into or close to the water resources or wetlands in such a manner that it may slough, slip, or erode.
7. Modifying Controls. If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the site owner shall replace or modify the control for site conditions.
- (E) NON-SEDIMENT POLLUTANT CONTROLS: Other than sediment, no solid or liquid waste, including building materials, shall be discharged in storm water runoff. The site owner must implement site best management practices to prevent toxic materials, hazardous materials, or other debris from entering the City of Middletown water resources or wetlands. These practices shall include but are not limited to the following:
- 1. Construction Site Waste Materials: A covered dumpster shall be made available for the proper disposal of construction site waste materials, garbage, plaster, drywall, grout, or gypsum.
 - 2. Concrete Truck Wash Out: The washing of excess concrete material into a street, catch basin, or other public facility, or into a water resource or wetland, shall not occur. A designated area for concrete washout shall be made available.
 - 3. Fuel Tank Storage: All fuel tanks and drums shall be stored in a marked storage area. 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.
 - 4. Toxic or Hazardous Waste Disposal: Any toxic or hazardous waste shall be disposed of properly.
 - 5. Contaminated Soils Disposal and Runoff: Contaminated soils from redevelopment sites shall be disposed of properly. Runoff from contaminated sites shall not be discharged from the site. Proper permits shall be obtained for development projects on solid waste landfill sites.
- (F) COMPLIANCE WITH OTHER REQUIREMENTS. The ESC Plan 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 located within the development area.
- (G) TRENCH AND GROUND WATER CONTROL. There shall be no sediment-laden or turbid discharges to water resources or wetlands resulting from dewatering activities. If trench or ground water contains sediment, it must pass through a sediment-settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water dewatering which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

- (H) INSPECTIONS. All controls on the site shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. The site owner shall assign qualified inspection personnel to conduct these inspections to ensure that the control practices are functional and to evaluate whether the ESC Plan is adequate, or whether additional control measures are required. Qualified inspection personnel are individuals with knowledge and experience in the installation and maintenance of sediment and erosion controls.

These inspections shall meet the following requirements

1. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for, pollutants entering the drainage system.
2. Erosion and sediment control measures identified in the ESC Plan shall be observed to ensure that they are operating correctly.
3. Discharge locations shall be inspected to determine 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 shall be inspected for evidence of off-site vehicle tracking.

The site owner shall maintain for three (3) years following the final stabilization of the site a record summarizing the results of these inspections, names(s) and qualifications of personnel making the inspections, the date(s) of inspections, major observations relating to the implementation of the ESC Plan and a certification as to whether the facility is in compliance with the ESC Plan and identify any incidents of non-compliance.

A copy of the approved ESC plan shall be maintained on site or in a location easily accessible by the applicant and the City. The Director of Public Works & Utilities may inspect all site development activities, including erosion and sediment control devices and facilities while a development site, when subject to this regulation, is under construction. When facilities are not constructed according to approved plans, the City of Middletown Director of Public Works & Utilities has the explicit authority to compel compliance with the approved plan and the objectives and standards of this regulation. Prior to final inspection, the developer's engineer shall provide the site grading plan documenting the intended site final grades.

- (I) MAINTENANCE. All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function. All sediment control practices must be maintained in a functional condition until all up slope areas they control reach final stabilization, as determined by the Director of Public Works & Utilities. The ESC Plan shall be designed to minimize maintenance requirements. The applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices and shall ensure a responsible party and adequate funding to conduct maintenance, all as determined by the Director of Public Works & Utilities. The person(s) or entity responsible for the continued maintenance of temporary and permanent erosion control measures shall, prior to any earth - disturbance, be identified to the satisfaction of the City.

When inspections required in (H) reveal the need for repair, replacement, or installation of erosion and sediment control best management practices, the following procedures shall be followed:

1. When practices require repair or maintenance. If an inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment-settling pond, it must be repaired or maintained within three days of the inspection. Sediment settling ponds must be repaired or maintained within 10 days of the inspection.

2. When practices fail to provide their intended function. If an inspection reveals that a control practice fails to perform its intended function as detailed in the ESC Plan and that another, more appropriate control practice is required, the ESC Plan must be amended and the new control practice must be installed within 10 days of the inspection.
 3. When practices depicted on the ESC Plan are not installed. If an inspection reveals that a control practice has not been implemented in accordance with the schedule, the control practice must be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.
 4. When off-site sedimentation or erosion occur. The owner shall be responsible for promptly removing all soil, miscellaneous debris and other materials that may become spilled, dumped or otherwise deposited on any public thoroughfares during transport to and from the development site, and taking precautions to inhibit the deposition of sediment into any sewer system or natural watercourse. In addition, the owner shall assume responsibility and all costs for removing any sedimentation deposited in downstream drainage ways or facilities deemed objectionable by the City to the proper functioning of these downstream areas.
- (J) Notifications. It shall be the responsibility of the site owner to provide notification to the City 48 hours prior to commencement of initial site earth-disturbance. In addition, the site owner shall provide notification to the City, at least 48-hours prior to any work within or across a stream channel or stream setback area defined under (A). Furthermore, within 45-days after Site Final Stabilization has been achieved, it shall be the responsibility of the site owner to inform the Director of Public Works & Utilities that site activities are complete.

CHAPTER 8: POST-CONSTRUCTION

(A) 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 the using structural and/or nonstructural BMPs. Examples of post-construction storm water controls include, but are not limited to, tree preservation, catch basins, retention/detention storage basins and swales.

(B) POST-CONSTRUCTION STORM WATER MANAGEMENT REQUIREMENTS

1. Permanent storm water management facilities are required for post-construction storm water management as part of the ESC Plan.
2. 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.
3. 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.
4. Design of post-construction controls must be practical and provide for the long-term operation of the system. Control 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 ESC Plan.

5. No storm water management practices will be acceptable that increases either peak flow rate or volume of runoff leaving a site.
6. The ESC Plan 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.
7. Detail drawings and maintenance plans shall be developed for all construction BMPs as part of the ESC Plan.
 - (a) The design of post-construction storm water facilities shall consider public safety as a design factor.
 - (b) The ESC Plan shall contain sufficient detail information, drawings and explanations to describe the method of storm water management after development.
 - (c) Maintenance plans shall ensure that pollutants collected within structural post-construction practices are disposed of in accordance with local, state and federal regulations.
8. The post-construction storm water management control practices and methods used to satisfy the requirements of the ESC Plan 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 No. 87 (or more current version) or other technical references approved by the Director of Public Works & Utilities.

(C) POST-CONSTRUCTION STORM WATER MANAGEMENT APPLICABILITY

1. Large Construction Activities. For all large construction activities (involving the disturbance of five or more acres of land or will disturb less than five acres, but is a part of a larger common plan of development or sale which will disturb five or more acres of land), the post construction BMP(s) chosen must be able to detain storm water runoff for protection of the stream channels, stream erosion control, and improved water quality, as outlined in sections E and F in this chapter.
2. Small Construction Activities: For all small land disturbance activities (which disturb one or more, but less than five acres of land and is not a part of a larger common plan of development or sale which will disturb five or more acres of land). Post-construction storm water management requirements shall be satisfied through section G of this chapter.
3. 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 ESC Plan. However, linear construction projects shall be designed to minimize the number of stream crossings and the width of disturbance.

(D) WAIVER FOR LARGE CONSTRUCTION SITE

1. The owner or operator of a proposed project regulated by section C paragraph 1. May commission a report by a Professional Engineer to determine the need for storm water detention storage and water quality requirements according to the design procedures of section E and F of this manual if the activity is consistent with the promotion of the 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.

2. If submitted, The Director of Public Works & Utilities 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 ESC Plan, in accordance with the criteria of section E and section F of this manual, or shall notify the owner or operator that the ESC Plan requirements has been waived, and that the provisions of section C paragraph 2, instead apply.

(E) STORM WATER DETENTION STORAGE

1. 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.
2. When a proposed earth-disturbing activity is subject to section C, paragraph 1 of this manual, increased peak rates and volumes of runoffs shall be controlled such that:
 - (a) 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.
 - (b) Storms of less frequent occurrence (longer return periods) than the critical storms up to the 100-year storm 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 adequate in designing and developing the storm water management facilities to meet the standards.
 - (c) The critical storm for specific development drainage shall be determined as follows:
 - i. 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 the 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 Resources Conservation Services TR-55.
 - 4.) To account for the 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.
 - ii. 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 1:

Table 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

3. It shall be strongly encourage that off-site runoff from upstream areas be conveyed through the site in an underground sewer system.
 - (a) Other methods of conveying off-site flows around the site must be approved by the city engineer.
 - (b) 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.
4. 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).

(F) WATER QUALITY REQUIREMENTS

1. When a proposed earth-disturbing activity is subject to section C paragraph 1. 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.
2. 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.
3. Structural (designed) post-construction storm water treatment practices shall be incorporated into the permanent drainage system for the site.
4. BMPs shall be designed according to the methodology included in the Rainwater and Land Development manual or in standards as accepted by the Director of Public Works & Utilities.
5. Methods for controlling increases in the rate and volume of storm water runoff may include, but are not limited to, the following:
 - (a) 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).
 - (b) 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.

- (c) 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 filtration areas with proper emergency overflow facilities).
 - (d) Provisions for detention/retention storage of storm water. All pond designs must provide a minimum one foot of freeboard.
 - (e) Use of low Impact Design methods such as bioretention areas, bioswales and infiltration trenches.
6. The BMPs chosen shall be sized to treat the CPWQv and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1.
 7. The CPWQv 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 Director of Public Works & Utilities that uses continuous hydrologic simulation and local long-term hourly precipitation records; or
 2. Using the equation $CPWQv = C * P * A / 12$, where
 - a. CPWQv = channel protection and water quality volume in acre-feet;
 - b. C = runoff coefficient appropriate for storms less than 1 inch according to Table 2;
 - c. P = 0.75 inch precipitation depth; and
 - d. A = area draining into the BMP in acres

Table 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

8. 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 $(0.6)(0.3) + (0.3)(0.5) + (0.1)(0.2) = 0.35$.
9. An additional volume equal to twenty (20) percent of the CPWQv shall be incorporated into the BMP for sediment storage and/or reduced infiltration capacity.
10. 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 7.3.

Table 3: Target Drawdown (Drain) Times for structural Post-Construction Treatment Control Practices

Best Management Practices (BMPs)	Drain Time of CPWQv
Infiltration	24-48 hours
Vegetated Swale and Filter Strip	24 hours

Extended Detention Storage Basin (Dry Basin)	48 hours
Retention Storage Basins (Wet Basins)*	24 hours
Constructed Wetlands (above permanent pool)	24 hours
Media Filtration, Bioretention	40 hours

11. 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.
12. Approval may be requested from the Director of Public Works & Utilities 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 3.
13. 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.
14. 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.

(G) POST-CONSTRUCTION REQUIREMENTS FOR SMALL CONSTRUCTION ACTIVITIES

1. When proposed earth-disturbing activity is subject to section C paragraph 2. of these regulations, the ESC Plan 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.
2. 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).
3. Structural measures should be placed on upland soils to the degree attainable.
4. The ESC Plan shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed pre-development levels.
5. A permittee is required to prove that a detention/retention storage structure is either infeasible or ineffective before the Director of Public Works & Utilities will approve an alternative BMP.
6. Design methods for storm water detention storage and water quality requirements shall be consistent with those required for large construction activities.
7. 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 changed in the hydrological regime of the receiving water).

(H) MAINTENANCE

1. The ESC Plan shall be designed to minimize maintenance requirements.

2. A description of maintenance procedures needed to ensure the continued performance of control practices shall be provided as part of the ESC Plan, in compliance with the provisions of this manual.

(I) STORM WATER MANAGEMENT EASEMENTS

1. 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.
2. Storm water management easements shall be provided by owner or operator to all waterways and storm water management structures and facilities, outside dedicated public road right-of-ways, as required for:
 - (a) Access for facility inspections and maintenance
 - (b) Future repair and replacement, or
 - (c) Preservation of storm water management facilities, conveyance, infiltration and detention storage areas and facilities, including flood routes for the 100-year storm event.
3. Those lots crossed by an easement shall be restricted against the planting within said easements 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 and shall also be restricted against changing of final grade from that described by the grading plan.
4. 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.
5. Removal of such plantings, structures, or grade changes by the City of Middletown will be at the expense of the property owner.
6. The purpose and physical characteristics of an easement shall be specified by the owner or operator as part of the ESC Plan and approved by the Director of Public Works & Utilities. 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.

(J) COMPLIANCE WITH OTHER REQUIREMENTS

The ESC Plan 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.

CHAPTER 9: FEES AND BONDS

- (A) Funds shall be deposited with the City of Middletown Building Inspection Division prior to review by the Director of Public Works & Utilities and/or its consultants to cover the professional services of the Director of Public Works & Utilities and/or other experts as the Director of Public Works & Utilities may require.
- (B) No soil disturbing activities shall be permitted until a cash bond has been deposited with the City of Middletown Building Inspection Division to the satisfaction of the Director of Public Works & Utilities

sufficient for the City of Middletown to perform the obligations otherwise to be performed by the owner of the development area as stated in this regulation and to allow all work to be performed as needed in the event that the site owner fails to comply with the provisions of this regulation. The cash bond shall be returned after all work required by this regulation has been completed to the satisfaction of the Director of Public Works & Utilities.

- (C) No project subject to this regulation shall commence without an ESC Plan approved by the Director of Public Works & Utilities.

CHAPTER 10: VIOLATIONS

- (A) No person shall violate or cause or knowingly permit to be violated any of the provisions of this regulation, or fail to comply with any of such provisions or with any lawful requirements of any public authority made pursuant to this regulation, or knowingly use or cause or permit the use of any lands in violation of this regulation or in violation of any permit granted under this regulation.
- (B) The Director of Public Works & Utilities shall notify the owner when deficiencies are observed, describing the nature of the deficiency, the agreed upon corrective action, and the time period in which to have the deficiency corrected. If after a reasonable amount of time for voluntary compliance, the corrective actions are not undertaken to the satisfaction of the City, the City may issue a Notice of Violation pursuant to Middletown City codes and proceed with other enforcement remedies as provided by this and other applicable provisions of the Middletown City Codes. Where the violations and/or deficiencies represent an immediate and substantial threat to the public health, safety or welfare, the City may immediately proceed with enforcement remedies as provided by Middletown City Codes and other applicable provisions of the Middletown City Codes.
- (C) Upon notice, the Director of Public Works & Utilities may suspend any active soil disturbing activity for a period not to exceed ninety (90) days, and may require immediate erosion and sediment control measures whenever he or she determines that such activity is not meeting the intent of this regulation. Such notice shall be in writing, shall be given to the owner or site owner, and shall state the conditions under which work may be resumed. In instances, however, where the Director of Public Works & Utilities finds that immediate action is necessary for public safety or the public interest, he or she may require that work be stopped upon verbal order pending issuance of the written notice.