

City of Hickory
Administrative Manual for the
Phase II Stormwater Ordinance

February 6, 2009

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SECTION 1: INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater program was created by the passage of amendments to the Clean Water Act (CWA). The objective of the CWA was to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters.

The City of Hickory (herein after referred to as the City) was issued a permit to discharge stormwater to the nation's surface waters effective July 1, 2005. A requirement of this permit was that the City adopt an NPDES Phase II Stormwater Ordinance to control the adverse effects of polluted stormwater runoff associated with new development and redevelopment projects. The Phase II Stormwater Ordinance (City Ordinance Number 07-30) was effective July 1, 2007.

Questions regarding the Phase II Stormwater Ordinance or the Administrative Manual should be directed to the City's Engineering Department at 828 323-7416.

1.2 PURPOSE

The purpose of this Administrative Manual is to provide guidance for the implementation and administration of the Phase II Stormwater Ordinance. The Administrative Manual includes an overview of the submittal and approval processes necessary to obtain a stormwater management permit for the stormwater management and control practices on a site that is being developed or redeveloped.

1.3 EFFECTIVE DATE

The Administrative Manual will be effective February 6, 2009.

1.4 STORMWATER ADMINISTRATOR

The person responsible for administering and enforcing the Phase II Stormwater Ordinance is the Stormwater Administrator. The powers and duties for the Stormwater Administrator are specified in the Phase II Stormwater Ordinance.

1.5 PROCESS FOR AMENDING THE ADMINISTRATIVE MANUAL

The Administrative Manual may be updated as required. The Stormwater Administrator is responsible for all amendments to the Administrative Manual. All policy related changes to the Manual require approval by the City Council.

SECTION 2: PLANNING BOARD REVIEW

2.1 PLANNING BOARD APPROVAL

Some projects require initial approval by the City Planning Board. After approval by the Planning Board, the requirements for approval of stormwater management plan submittals are outlined in the sections that follow.

SECTION 3: STORMWATER BMP MANUAL

3.1 USE OF BMP MANUAL REQUIRED

The City has adopted the Stormwater Best Management Practice (BMP) Manual (*Design Manual*) published by the North Carolina Department of Environment and Natural Resources, Division of Water Quality (NCDENR, DWQ). The latest edition of the *Design Manual* shall be used for the design of any stormwater BMPs that are a part of the project design submittal.

The *Design Manual* is available for review or downloading at the following website: http://h2o.enr.state.nc.us/su/bmp_forms.htm.

SECTION 4: CONCEPT PLAN AND CONSULTATION MEETING (IF REQUESTED)

4.1 PURPOSE OF CONCEPT PLAN AND CONSULTATION MEETING

The land owner, the land owner's duly authorized agent, or anyone having interest in the property by reason of a written contract with the owner *may* request a consultation meeting to discuss a proposed Concept Plan for the stormwater management system to be utilized in the proposed development project.

The purpose of the Concept Plan is to demonstrate how a proposed development project shall comply with the post-construction requirements of the City's Phase II Stormwater Ordinance. The Concept Plan is not a detailed design but is meant to provide the basic information necessary for the reviewer to understand the approach to be taken to stormwater management, and to ensure that compliance with Phase II Stormwater Ordinance requirements can be achieved by the proposed development project.

The consultation meeting should take place before final site design engineering commences. The purpose of this meeting is to discuss the post-construction stormwater management measures necessary for the proposed project. Local watershed plans and other relevant resource protection plans may be discussed during the consultation meeting.

The consultation meeting to review the Concept Plan shall be scheduled with the City's Engineering Department at 828 323-7416. The Planning Department may attend the consultation meeting to discuss relevant issues concerning the proposed development project.

SECTION 5: OVERVIEW OF SUBMITTAL AND APPROVAL PROCESS

5.1 STORMWATER MANAGEMENT PLAN SUBMITTALS CHECKLIST

Submittals Required (* indicates that a standard form is to be used)	Administrative Manual Section	Stormwater Ordinance Section
(1) Stormwater Management Permit Application*	6	2.2(A)
(2) Design Drawings	6	2.3(B)
(3) Stormwater Calculations	6	2.3(B)
(4) Design Checklist(s) from NCDENR <i>Design Manual</i>*	6	2.3(B)
(5) Construction Performance Security	9	4.4(A)
(6) Operation and Maintenance Manual	7	4.2(A)
(7) Operation and Maintenance Agreement w/ Addenda*	7	4.2(A)
(8) Written Access Easement*	8	4.2(A)
(9) Final Plat with Access Easement Shown	8	4.5(A)
(10) Certified As-Built Drawings	10	2.3(C)
(11) Certification of Completion*	10	2.3(C)
(12) Record of Construction*	10	2.3(C)
(13) Maintenance Security	9	4.4(A)
(14) Annual Inspection Report*	7	4.1(B)

Note: Standard forms are available in the City’s Engineering Department and on the website at www.hickorygov.com. Items 1-4 above are to be submitted to the Development Assistance Center to begin the review and approval process. Items 5-14 above are to be submitted to the City’s Engineering Department after design approval.

Items 1-4, the Stormwater Management Permit Application, Design Drawings, Stormwater Calculations, and Design Checklist(s) from the *Design Manual* (latest edition) must be submitted to begin the review and approval process.

Item 5, the Construction Performance Security must be submitted before onsite construction begins. The amount of the construction performance security will be 125% of the total estimated construction cost for the complete installation of the BMP(s).

Items 6-9, Operation and Maintenance Manual, Operation and Maintenance Agreement with Addenda, Written Access Easement, and Final Plat with Access Easement shall be recorded at the Register of Deeds’ office. The land owner shall pay the document recording fee.

Items 6-13, Operation and Maintenance Manual, Operation and Maintenance Agreement with Addenda, Written Access Easement, Final Plat with Access Easement, Certified As-Built Drawings, Certification of Completion, Record of Construction, and Maintenance Security must be submitted and approved before a Certificate of Occupancy can be issued.

Item 14, Annual Inspection Report must be submitted on/or before the first and each subsequent anniversary of the as-built certification.

SECTION 6: STORMWATER MANAGEMENT PERMIT

6.1 PURPOSE OF STORMWATER MANAGEMENT PERMIT

The purpose for issuance of the Stormwater Management Permit is to provide a mechanism for the review and approval of the method to be used for the management and control of stormwater for a development or redevelopment site to ensure that it is consistent with the requirements of the Phase II Stormwater Ordinance. A Stormwater Management Permit is required for all development and redevelopment projects unless the project is exempt pursuant to the Phase II Stormwater Ordinance Sections 1.5(B) and 2.2(A). No land development activity, including land clearing and grading, can be initiated for such development or redevelopment until a Stormwater Management Permit has been issued by the Stormwater Administrator. A Stormwater Management Permit shall govern the design, installation, and construction of storm water management and control practices on the site, including structural BMPs and elements of site design for storm water management other than structural BMPs. Compliance after project completion is assured by the maintenance provisions of the Phase II Stormwater Ordinance.

The purpose of the Stormwater Management Permit Application is to demonstrate how post-construction stormwater runoff shall be controlled and managed and how the proposed project shall meet the requirements of the Phase II Stormwater Ordinance. A properly submitted, reviewed, and approved Stormwater Management Permit Application is required for the issuance of a Stormwater Management Permit. The content and form of the Stormwater Management Permit Application shall be established by the Stormwater Administrator.

All design drawings, calculations, and design checklists submitted with the application shall be prepared by a registered North Carolina professional engineer, surveyor, soil scientist, or landscape architect in accordance with Section 2.3(B) of the Phase II Stormwater Ordinance. The engineer, surveyor, soil scientist, or landscape architect shall perform services only in their area of competence, and shall verify that the design of all storm water management facilities and practices meet the submittal requirements for complete applications, that the designs are sufficient to comply with applicable standards and policies found in the *Design Manual*, and that the designs ensure compliance with the Phase II Stormwater Ordinance.

The Stormwater Administrator shall review the stormwater management permit application submittal within 15 working days after a complete application is submitted. Upon review and approval of the stormwater management permit application, design drawings, stormwater calculations, and design checklists, a stormwater management permit will be issued to the owner (or owner's agent) with a copy to the designer. Land development activities may not begin until the stormwater management permit is issued.

6.2 APPLICATION FOR STORMWATER MANAGEMENT PERMIT

A copy of the standard Stormwater Management Permit Application Form shall be furnished by the City. The design drawings, stormwater calculations, and the design checklist(s) from the *Design Manual* must be submitted with the Stormwater Management Permit Application Form in order for the submittal to be complete.

SECTION 7: OPERATION AND MAINTENANCE AGREEMENT

7.1 PURPOSE OF OPERATION AND MAINTENANCE AGREEMENT

An Operation and Maintenance Agreement is required for all BMPs. The purpose of this legal agreement is to ensure that each BMP receives adequate maintenance so that it can satisfactorily perform its pollutant removal function. The agreement also designates the responsible party who shall be in charge of maintaining the BMP. An addendum for each type of BMP shall be attached to the Operation and Maintenance Agreement when it is submitted for approval. The standard format Operation and Maintenance Agreement and Addenda shall be furnished by the City.

The Operation and Maintenance Agreement and Operation and Maintenance Manual should be submitted for review and approval once the Stormwater Management Permit is issued. The Operation and Maintenance Agreement and Operation and Maintenance Manual must be approved before a Certificate of Occupancy is issued.

The Operation and Maintenance Agreement and Operation and Maintenance Manual shall be referenced on the final plat. The Operation and Maintenance Agreement and Operation and Maintenance Manual shall be recorded with the appropriate County Register of Deeds (Catawba, Caldwell, or Burke).

7.2 OPERATION AND MAINTENANCE MANUAL

An Operation and Maintenance Manual is required for all site BMPs. The Operation and Maintenance Manual shall include all site BMPs and shall indicate what operation and maintenance actions are required to be performed, what criteria shall be used to determine when those actions are necessary, and who is responsible for those actions. A copy of the Operation and Maintenance Manual shall be kept at the site along with the records of inspections, maintenance, and repairs.

7.3 ANNUAL MAINTENANCE AND INSPECTION REPORT

The Operation and Maintenance Agreement requires that each BMP shall be inspected on an annual basis. The Owner shall provide an annual inspection report for each BMP, performed by a qualified professional according to the City's Phase II Stormwater Ordinance Section 4.1(B). The standard format Maintenance and Inspection Checklist form shall be furnished by the City. The annual inspection report shall be submitted to the City on/or before the first and each subsequent anniversary date of the as-built certification.

The inspection report for each BMP must indicate the status of each item inspected, and any maintenance that was conducted or repairs that were made as a result of the inspection. The inspector shall certify that at the time of the inspection the BMP was performing properly and was in compliance with the terms and conditions of the approved Operation and Maintenance Agreement and Operation and Maintenance Manual. The inspector should allow enough time before the anniversary date of the as-built certification to conduct the necessary inspection(s) and allow for any recommended maintenance and repairs to be made prior to the submittal of the report.

The owner of the BMP shall keep records of inspections, maintenance, and repairs for at least five (5) years from the date of creation of the record and shall submit the same to the Storm Water Administrator upon request.

SECTION 8: FINAL PLAT AND ACCESS EASEMENT

8.1 PURPOSE OF FINAL PLAT

Enforceable restrictions on property usage are required to run with the land to ensure that future development and redevelopment maintains the site in compliance with Phase II Stormwater Ordinance requirements. This shall be achieved through specific notations on final plats as described below. Final plats shall be reviewed and approved by the City prior to recordation. Final plats shall be prepared by a surveyor licensed in the State of North Carolina, and shall be prepared in accordance with the requirements of the Standards of Practice for Surveying in North Carolina and the mapping requirements of G.S. 47-30.

8.2 NOTES ON FINAL PLAT

The notes herein are related to stormwater management and the Phase II Stormwater Ordinance and are not intended to be in conflict with any other requirements for final plats. The following shall appear on all final plats with and shall be recorded at the appropriate County Register of Deeds' Office (Catawba, Caldwell, or Burke):

1. The following language shall appear on the final plat regarding BMP maintenance: "This property contains water quality features that must be maintained according to the Operation and Maintenance Agreement and Operation and Maintenance Manual recorded in Deed Book _____ and Page _____."
2. The following language shall appear on the final plat regarding the access easement from the BMP(s) to a public right of way: "The Access Easement shown is for the purpose of granting access to the City of Hickory to carry out all provisions of the City's Phase II Stormwater Ordinance, including but not limited to inspections of the stormwater BMP device(s)."
3. The area of the access easement shall be shown on the final plat.
4. Structural BMP(s) shall be clearly identified with an identification name and number on the final plat.

8.3 ACCESS EASEMENT ON FINAL PLAT

The access easement shown on the final plat shall encompass the structural BMP(s) and shall be of sufficient width to allow access for heavy equipment to enter the site and work around the perimeter of the structural BMP(s). A minimum width of twenty-five feet in width shall be provided for the access easement to the structural BMP(s). A minimum additional width of twenty-five feet around the outside perimeter of the structural BMP(s), measured from the top of the bank or the toe of the slope, shall be provided as a part of the access easement unless otherwise approved by the City.

8.4 WRITTEN ACCESS EASEMENT

A written access easement describing the access easement shown on the final plat shall also be provided for review and approval by the City. The written access easement shall be recorded at the appropriate County Register of Deeds’ office (Catawba, Caldwell, or Burke).

SECTION 9: SECURITIES FOR INSTALLATION AND MAINTENANCE

9.1 PURPOSE OF A SECURITY

The City shall require the submittal of a performance security to ensure that the construction of the site BMP(s) are in accordance with the design drawings approved by the Stormwater Administrator. A maintenance security shall be required to ensure that, in accordance with the Operation and Maintenance Agreement and the Operation and Maintenance Manual, the owner takes the required actions to inspect, maintain, repair, and if necessary reconstruct the BMP(s) so that adequate performance is achieved.

9.2 SECURITY SUBMITTALS AND AMOUNTS

The installation and maintenance securities may be in the form of a surety bond, irrevocable letter of credit, certified check, or other form of surety approved by the Stormwater Administrator.

The construction performance security must be submitted before onsite construction begins. The amount of the construction performance security will be 125% of the total estimated construction cost for the complete installation of the BMP(s). The amount of the construction performance security must be approved by the Stormwater Administrator.

The maintenance security must be submitted and approved before a certificate of occupancy can be issued. The amount of the maintenance security shall be based upon a reasonable estimate of the annual cost of inspection, operation and maintenance of the BMP(s) approved under the stormwater management permit in accordance with Section 4.4 (B)(2) of the Phase II Stormwater Ordinance. To meet this purpose, *The Economics of Structural Stormwater BMPs in North Carolina* by Dr. Bill Hunt and Ada Wossink shall be used to calculate the appropriate amount of the maintenance security. The example security amounts below were calculated using this study:

BMP Watershed (acres)	Wet Pond	Wetland	Sand Filter	Bio-Retention
1	\$9,200.00	\$4,500.00	\$10,600.00	\$3,400.00
2	\$11,100.00	\$5,000.00	\$15,300.00	\$3,800.00
3	\$12,400.00	\$5,300.00	\$19,000.00	\$4,100.00
4	\$13,400.00	\$5,600.00	\$22,100.00	\$4,200.00
5	\$14,200.00	\$5,800.00	\$24,900.00	\$4,400.00

9.3 RELEASE OF CONSTRUCTION PERFORMANCE SECURITY

The City shall perform an onsite inspection to determine if the BMPs have been constructed in accordance with the approved drawings and the requirements of the Phase II Stormwater Ordinance. The construction performance security shall not be released until after the City's receipt and acceptance of the Certified As-Built Drawings, Certification of Completion, Record of Construction, and the Maintenance Security.

SECTION 10: AS-BUILT SUBMITTALS

10.1 CERTIFICATION, RECORD OF CONSTRUCTION, AND AS-BUILTS

The designer shall furnish a Certification of Completion statement along with a Record of Construction form, to certify under seal that the stormwater management and control measures and devices, including the structural BMPs, have been completed in conformance with the drawings and specifications approved by the City, are functioning as designed, and are in conformance with the requirements of the Phase II Stormwater Ordinance. The Record of Construction shall document the essential design elements of the structural BMPs against the original design. The Certification of Completion statement format and the Record of Construction form shall be furnished by the City.

The as-built drawings shall be based upon information obtained by a surveyor licensed in the State of North Carolina, after construction is completed and accepted by the designer. The as-built drawings shall show the final location, size, and depth for all storm water management facilities, controls, measures, devices, and structures, including BMPs, as installed.

The Certification of Completion, Record of Construction, and as-built drawings must be submitted and approved before a Certificate of Occupancy can be issued.

SECTION 11: LOW-DENSITY PROJECTS

11.1 DEED RESTRICTIONS AND PROTECTIVE COVENANTS

A development project is low-density if it has no more than two dwelling units per acre or twenty-four percent built-upon area for all residential and non-residential development. A stormwater management permit shall be required for a development project with an overall density at or below the relevant low-density threshold, if the development project contains an area or areas that could be developed so that the overall density would exceed the low-density threshold. The approval of the stormwater management permit application shall require an enforceable restriction on property usage, such as a recorded deed restriction or protective covenants, to ensure that the development project maintains the site consistent with the development project plans and the low-density development standards in accordance with Section 3.2(C) of the Phase II Stormwater Ordinance.