

DURHAM



**CITY OF DURHAM**

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CITY OF MEDICINE

September 10, 2015

**To:** All Development Community Members, Consultants and Development Design Professionals

**From:** Shea S. Bolick, PE, PLS, CFM   
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**Subject:** Letter to Industry 09-10-15 – Requirement for Submitting SCM Drainage Areas and Reconstruction of the Stormwater Services Standard Notes

**Part A: SCM Drainage Area Polygons**

The purpose of this Letter to Industry (LTI) is the establishment of written protocol for formal submittal of each stormwater control measure drainage area polygon during the final submittal of construction documents as listed in the “City of Durham - Letter of Transmittal” instructions.

**Background**

Each project in the City of Durham which proposes or utilizes one or more Stormwater Control Measure (SCM) has an associated drainage area/basin. The surface area that drains to each SCM is typically delineated in a stormwater impact analysis and supporting design calculations. SCMs are directly impacted by changes in drainage area, whether by the amount of area or the type of land use within the drainage area, and having the drainage areas/basins for stormwater facilities as a separate digital file can greatly assist in the future.

As such, requiring the project designer to provide an electronic file that contains the drainage area polygon for each SCM will allow both the City of Durham and the development community to quickly reference the drainage areas during times of proposed modification or site improvement, for trouble shooting operational or maintenance concerns, for future compliance with various stormwater permits, and for water quality modeling to help improve surface waters as well as for future compliance with existing development regulations required by the Jordan and Falls Nutrient Strategy.

Based on this, the policy and procedures contained herein have been established whereby development in the City of Durham can continue to proceed in an orderly fashion. It should be noted that these written procedures reflect an internal policy under which the City has been operating for several months.

**Procedures a Project Designer Shall Follow to Submit the SCM Drainage Areas Associated with Each Stormwater Control Measure Employed within the City of Durham.**

Development with No Proposed SCM

For a development where there are no proposed SCM there are no associated SCM Drainage Area Polygon, thus there is *no requirement for the SCM Drainage Area Polygon* at construction plan submittal.

Development Proposing or Utilizing an Existing SCM

For a development where there are one or more proposed or utilized SCMs, the project designer shall conform to the following procedures:

- Submit the SCM drainage area polygon on a CD-ROM or DVD and in one of the following file formats: AutoCAD DWG/DXF, Microstation DGN, or ESRI ShapeFile.
- Files must be georeferenced to the North Carolina State Plane (NAD83) coordinate system in the units of US Survey Feet.
- Isolate the SCM drainage area polygon to a single CAD layer named: SCM\_AREAPOLY. (All ancillary layers can be included in this layer of the file, but are not required.)

**Timing**

The implementation of this protocol is already in effect.

**Part B: Standard Notes**

Reconstruction of Stormwater Services Standard Notes contained in Section 12 of the *Reference Guide for Development*.

**Background**

Currently, all development projects in the City of Durham are required to include standard stormwater services notes on site plans/preliminary plats. These notes have become antiquated and are in need of revision to keep up with current practices. Therefore, the City has updated the standard stormwater notes and formally expands their use to construction drawings and final plats.

**General Notes Required to be Added by the Project Designer on Site Plans/Preliminary Plats, Construction Drawings, and Final Plats as Designated Below and in Updated Section 12 of the *Reference Guide for Development*.**

**STORMWATER SERVICES STANDARD NOTES**

The following notes are required on the cover sheet for site plans/preliminary plats, construction drawings, and on final plats as noted by the appropriate section below for each type submittal.

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**The following notes shall be included in the Public Works Conditions of Approval box on the cover sheet for Site Plan/Preliminary Plat submittals.** These notes may or may not apply to the project depending on the requirements of the project (to be determined by designer and during review).

- At a minimum, the stormwater design details for this project shall be governed by the minimum standards of the most recent edition of the City of Durham (City) Reference Guide for Development (RGD) and any Letters to Industry (posted on the City's website) that are in effect the date Construction Drawings are first received for review by the City.

- Final design calculations for the stormwater control measure(s) (SCM[s]) require the use of storage indication routing methodology such as TR-20 or HEC-1 models. For each SCM, as applicable, stage-storage relationship and inflow and outflow hydrographs are required. All tabulated data including calculations showing the limiting discharge, whether orifice, weir, barrel, or outlet control, as appropriate is required. HydroCad, Hydraflow Hydrographs, and PondPack are commonly used and recognized software programs which incorporate routing methodology accepted by the City.

- *Use for residential developments with a Homeowners Association:*

Stormwater control measure(s) (SCM[s]) permit fee(s), the executed Stormwater Facility Agreement and Covenants (prepared by the City of Durham Stormwater Development Review Section) and a payment into the Stormwater Replacement Fund are required for all SCM(s) associated with this development. Construction of the development is not allowed to commence until these items are provided in accordance with the terms and conditions outlined in the Stormwater Facility Agreement and Covenants or in accordance with written policy. The designer shall submit a sealed engineer's construction cost estimate for every SCM proposed in the development prior to approval of the construction drawings.

- *Use for Multi-family and other type developments:*

Stormwater control measure(s) (SCM[s]) permit fee(s), the executed Stormwater Facility Agreement and Covenants (prepared by the City of Durham Stormwater Development Review Section) and either a payment into the Stormwater Replacement Fund or the provision of an alternate security are required for all SCM(s) associated with this development. Construction of the development is not allowed to commence until these items are provided in accordance with the terms and conditions outlined in the Stormwater Facility Agreement and Covenants or in accordance with written policy. The designer shall submit a sealed engineer's construction cost estimate for every SCM proposed in the development prior

to approval of the construction drawings if a financial guarantee in the form of payment into the Stormwater Replacement Fund is utilized.

- An as-built certification for the stormwater control measure(s) (SCM[s]), provided by the BMP Certifying Engineer (BCE), is required. The as-built certification shall be submitted in accordance with the City of Durham BCE Program, refer to Section 8.6, BMP Certifying Engineer Program for Stormwater BMPs in the City of Durham, of the Reference Guide for Development. The SCM as-built certification(s) shall be approved by the Stormwater Development Review Section prior to issuance of any final certificates of occupancy/compliance for development, with the exception of when an appropriate construction security has been provided for single family or townhome development. With this provided construction security, certificates of occupancy/compliance can be issued for a percentage of single family lots in accordance with City requirements.
- Stormwater control measure(s) (SCM[s]) design calculations will not be reviewed or approved with the Site Plan/Preliminary Plat submittal. All SCM designs will be reviewed and approved during the construction drawing submittal process. If, at the time of construction drawing submittal, it is found that the proposed SCM(s) is undersized, not properly accessible, or otherwise insufficient or unsuitable for the site, it is the responsibility of the applicant to insure that the applicable stormwater ordinance requirements are met. A revised site plan or preliminary plat may be required if the originally proposed SCM(s) are found insufficient, not properly accessible, or unsuitable and alternative SCM(s) with associated easements are required.
- The Developer/Contractor shall schedule a preconstruction meeting with the Stormwater Development Review section prior to commencing work on any Stormwater Control Measure (SCM). If the SCM will be constructed initially as a Sedimentation and Erosion Control (S&EC) device, to be converted to a permanent SCM at a later time, the preconstruction meeting should be scheduled prior to construction of the S&EC device. Call 919-560-4326 Ext. 30238 to schedule the required meeting a minimum of three business days prior to the desired meeting date. This is in addition to other preconstruction meeting requirements for erosion control, engineering inspections, etc.
- *Use for Single Family Detached, Townhome and Duplex Residential Developments making use of a nutrient bank and/or the North Carolina Division of Mitigation Services (NC Ecosystem Enhancement Program) when insufficient credits are available from the nutrient banks:*

To receive construction drawings approval for Single Family Detached, Townhome and Duplex Residential Developments that are making use of nutrient banks and/or the NCEEP, the approval of the construction drawings is contingent upon the purchase of nutrient credits. If a revised site plan/preliminary plat is submitted for this site, the revised site plan/preliminary plat will be subject to

any ordinances in place at the time of the revised site plan/preliminary plat submission. Prior to the approval of any construction drawings or prior to the release of any building permits pertaining to this development, whichever comes first, a letter/receipt showing the purchase of the nutrient credits for this development and a copy of the nutrient bank ledger if applicable, showing the total nutrient credits available minus any and all deductions, is to be provided to the Stormwater Development Review Section. However, if insufficient credits are available from nutrient banks and NCEEP will not accept payment, then the applicant shall submit a revised site plan/preliminary plat back to the Durham City-County Planning Department and shall comply with the current Stormwater Performance Standards in place at the time of the revised site plan/preliminary plat submission.

- *Use for developments other than Single Family Detached, Townhome and Duplex Residential Developments making use of a nutrient bank and/or the North Carolina Division of Mitigation Services (NC Ecosystem Enhancement Program) when insufficient credits are available from the nutrient banks:*

To receive site plan/preliminary plat approval for developments other than Single Family Detached, Townhome and Duplex Residential Developments that are making use of nutrient banks or NCEEP, the approval of the site plan/preliminary plat is contingent upon the purchase of nutrient credits. If a revised site plan/preliminary plat is submitted for this development, the revised site plan/preliminary plat will be subject to any ordinances in place at the time of the revised site plan/preliminary plat submission. Prior to the approval of the site plan/preliminary plat, a letter/receipt showing the purchase of the nutrient credits for this development and a copy of the nutrient bank ledger if applicable, showing the total nutrient credits available minus any and all deductions, is to be provided to the Stormwater Development Review Section.

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**The following notes shall be included on the cover sheet for Construction Drawings submittals.** These notes may or may not apply to the project depending on the requirements of the project (to be determined by the designer and during review).

- At a minimum, the stormwater design details for this project shall be governed by the minimum standards of the most recent edition of the City of Durham (City) Reference Guide for Development (RGD) and any Letters to Industry (posted on the City's website) that are in effect the date Construction Drawings are first received for review by the City.
- Final design calculations for the stormwater control measure(s) (SCM[s]) require the use of storage indication routing methodology such as TR-20 or HEC-1 models. For each SCM, as applicable, stage-storage relationship and inflow and outflow hydrographs are required. All tabulated data including calculations showing the limiting discharge, whether orifice, weir, barrel, or outlet control, as

appropriate is required. HydroCad, Hydraflow Hydrographs, and PondPack are commonly used and recognized software programs which incorporate routing methodology accepted by the City.

- Stormwater control measure(s) (SCM[s]) permit fee(s), the executed Stormwater Facility Agreement and Covenants (prepared by the City of Durham Stormwater Development Review Section) and either payment into the Stormwater Replacement Fund or the provision of an alternate security is required for all SCMs associated with this development. Construction of the development is not allowed to commence until these items are provided in accordance with the terms and conditions outlined in the Stormwater Facility Agreement and Covenants or in accordance with written policy. The designer shall submit a sealed engineer's construction cost estimate for each SCM proposed in the development prior to approval of the construction drawings if a financial guarantee in the form of payment into the Stormwater Replacement Fund is utilized. Note that the Stormwater Replacement Fund is the only financial guarantee option for residential developments with a homeowners association.
- An as-built certification for the stormwater control measure(s) (SCM[s]), provided by the BMP Certifying Engineer (BCE), is required. The as-built certification shall be submitted in accordance with the City of Durham BCE Program, refer to Section 8.6, BMP Certifying Engineer Program for Stormwater BMPs in the City of Durham, of the Reference Guide for Development. The SCM as-built certification(s) shall be approved by the Stormwater Development Review Section prior to issuance of any final certificates of occupancy/compliance for development, with the exception of when an appropriate construction security has been provided for single family or townhome development. With this provided construction security, certificates of occupancy/compliance can be issued for a percentage of single family lots in accordance with City requirements.
- The Developer/Contractor shall schedule a preconstruction meeting with the Stormwater Development Review section prior to commencing work on any Stormwater Control Measure (SCM). If the SCM will be constructed initially as a Sedimentation and Erosion Control (S&EC) device, to be converted to a permanent SCM at a later time, the preconstruction meeting should be scheduled prior to construction of the S&EC device. Call 919-560-4326 Ext. 30238 to schedule the required meeting a minimum of three (3) business days prior to the desired meeting date. This is in addition to other preconstruction meeting requirements for erosion control, engineering inspections, etc.

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**The following notes shall be included on Final Plats.** These notes may or may not apply to the project depending on the requirements of the project (to be determined by applicant and during review).

- *Restrictive covenants note(s) required per the final plat checklist for residential developments with a HOA:*

THE "COMMON ELEMENTS" AND/OR "OPEN SPACES" EXPRESSLY ARE DEDICATED HEREBY FOR THE USE AND ENJOYMENT OF THE HOMEOWNERS IN (ENTER NAME OF DEVELOPMENT) AND ARE TO BE CONVEYED BY (ENTER OWNER NAME) TO (ENTER HOMEOWNER ASSOCIATION NAME), AS MORE FULLY PROVIDED IN THE DECLARATION OF COVENANTS, CONDITIONS, AND RESTRICTIONS APPLICABLE TO (ENTER NAME OF DEVELOPMENT) DATED \_\_\_\_\_ AND RECORDED IN BOOK \_\_\_\_\_, PAGES \_\_\_\_\_, IN THE DURHAM COUNTY REGISTRY, AS AMENDED FOR THIS AND FUTURE SECTIONS AND MAPS, SAID DECLARATION BEING HEREBY INCORPORATED AND MADE A PART OF THIS PLAT.

STORMWATER FACILITY RESPONSIBILITY: THE (ENTER HOMEOWNER ASSOCIATION NAME) SHALL BE RESPONSIBLE FOR MAINTAINING THE COMPLETED PERMANENT STORMWATER FACILITY(IES) IN ACCORDANCE WITH THE OPERATION AND MAINTENANCE MANUAL(S) OR AS DIRECTED BY THE GOVERNEMENT OFFICE HAVING JURISDICTION FOR STORMWATER PERFORMANCE STANDARDS AND, IF THE OWNER'S ASSOCIATION SHOULD BE DISSOLVED OR CEASE TO EXIST, THEN IN THAT EVENT THE OWNERS OF RECORD AT THE TIME OF REQUIRED MAINTENANCE SHALL BE JOINTLY AND SEVERALLY LIABLE FOR ANY AND ALL COSTS ATTENDANT THERETO.

- *Easement note per the final plat checklist for developments without an HOA:*

THE OPERATION, MAINTENANCE, AND RECONSTRUCTION RESPONSIBILITY OF THE STORMWATER CONTROL MEASURE(S) (SCM[s]) LOCATED WITHIN THE SCM ACCESS & MAINTENANCE EASEMENT RESTS WITH THE OWNER PER THE RECORDED STORMWATER FACILITY AGREEMENT AND COVENANTS OR OPERATION AND MAINTENANCE AGREEMENT. THE SCM ACCESS & MAINTENANCE EASEMENT GRANTS THE CITY OF DURHAM AND THEIR ASSIGNS RIGHT OF ACCESS TO THE PERMANENT STORMWATER CONTROL MEASURE(S) FOR INSPECTIONS AND ENFORCEMENT OF OPERATION & MAINTENANCE. NO OBSTRUCTION SHALL BE ALLOWED IN THE EASEMENT WHICH COULD IMPEDE NECESSARY MAINTENANCE BY THE OWNER AND ANY ENFORCEMENT BY THE CITY.

- *Easement note per the final plat checklist for developments with an HOA:*

THE STORMWATER CONTROL MEASURE (SCM) ACCESS & MAINTENANCE EASEMENT GRANTS THE CITY OF DURHAM AND THEIR ASSIGNS RIGHT OF ACCESS TO THE PERMANENT STORMWATER CONTROL MEASURE(S) FOR INSPECTIONS AND ENFORCEMENT OF OPERATION & MAINTENANCE. NO OBSTRUCTION SHALL BE ALLOWED IN THE EASEMENT WHICH COULD IMPEDE NECESSARY MAINTENANCE BY THE OWNER OR ENFORCEMENT BY THE CITY.

- *Optional blanket easement for multi-family and other development (cannot be used for limited residential):*

THE CITY OF DURHAM AND THEIR ASSIGNS HAVE RIGHT OF ACCESS TO THE PERMANENT STORMWATER

CONTROL MEASURE(S) (**ENTER TYPE(S)**) FOR INSPECTIONS AND MAINTENANCE ENFORCEMENT. A BLANKET ACCESS EASEMENT TO, OVER AND AROUND THE STORMWATER CONTROL MEASURE IS HEREBY GRANTED FOR INSPECTIONS AS WELL AS ENFORCEMENT OF OPERATION & MAINTENANCE. ANY OBSTRUCTION PLACED IN THE BLANKET EASEMENT THAT IMPEDES NECESSARY MAINTENANCE ENFORCEMENT WILL BE REMOVED AND ALL THE ASSOCIATED COSTS WILL BE BORNE SOLEY BY THE OWNER.

**Timing**

The implementation of this requirement will take place immediately on all new submittals of each type.