



CITY OF DURHAM – STORMWATER SERVICES SITE PLAN SUBMITTAL CHECKLIST

Department of Public Works
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www.durhamnc.gov

Date: _____

PROJECT INFORMATION

Project Name: _____
Phase: _____ Planning Case Number: _____
Previous Project Name(s): _____
PIN(s): _____
Contact Person: _____ Phone: _____
Company: _____ Fax: _____
Email Address: _____

INSTRUCTIONS

For each review submittal, including re-submittals, the entire Stormwater Impact Analysis (SIA) and submittal checklist shall be submitted. Partial SIA and checklist will result in notification of an incomplete submittal with no review performed.

Contact Stormwater Services regarding redevelopment or expansion projects for modified requirements.

The following checklist outlines submittal requirements. Initial in the space provided to indicate the following submittal requirements have been met and supporting documentation is attached.

A. GENERAL REQUIREMENTS

Initials

- (Check One) ___ INSIDE ___ OUTSIDE Watershed Protection Overlay (WPO).
Indicate the WPO(s) where the project is located:
(Check all that apply) ___ F/J-A ___ F/J-B ___ E-A ___ E-B ___ M/LR-A ___ M/LR-B
If inside WPO, notation of WPO Standards is required on plans.
___ (Check all that apply) ___ Jordan Basin ___ Falls Basin ___ Lower Neuse Basin
___ A legible copy of the United States Geological Survey 7.5 Minute Quadrangle map is provided, including map reference, with site boundary clearly shown and labeled. The map clearly shows all streams.
___ A legible copy of the published Durham County Soil Survey is provided, including map reference, with the site boundary clearly shown and labeled. The map clearly shows all streams, soil types and soil type boundaries.
___ Tops of banks for the streams are shown on the plan. [Contact the North Carolina Department of Environment and Natural Resources for stream identifications in the Neuse River Basin (Falls and Lower Neuse Basins). Stream determinations in the Jordan Basin shall be submitted per the Letter to Industry found on Stormwater Development Reviews' web site at LTI (25August2011) - New Stream Buffer Requirements.]
___ All Watershed Protection Overlay, Neuse River Basin, Jordan Basin, and City riparian buffers, measured from the tops of the stream banks, are shown on the plan.
___ The 10-foot no build setback, measured from all riparian buffers, is shown on the plan.

- _____ Diffuse flow is achieved into riparian buffers.
- _____ (Check One) Yes No Regulated floodplain located on site.
- _____ A legible copy of the effective Federal Emergency Management Agency National Flood Insurance Program Flood Insurance Rate Map is provided. Map number, map date, and site boundary are clearly shown and labeled. [This map is required regardless of whether floodplain is located on the site.] The effective and/or future FEMA 100-year floodplain, with base flood elevations (if applicable), are shown on the plan.
- _____ All applicable notes, per the Standard Notes section of the *Reference Guide for Development*, have been added to the plan.
- _____ Any known site contamination (soil and/or groundwater) has been disclosed/identified and delineated
- _____ Stormwater Impact Analysis (SIA) sealed and signed by a registered North Carolina Professional Engineer (NCPE) is provided, including narrative report and drainage calculations. Note: If a site is exempt from stormwater requirements then a narrative advising of the exemption can be submitted by any designer.

B. PEAK DISCHARGE RATE EVALUATION

Initials

- _____ An introductory narrative describing pre- and post-development site conditions and site improvement changes, is provided. Note: The baseline conditions for the 1-year event varies based upon the regulatory basin in which the project is located.
- _____ Drainage area maps (one map for pre-development and one map for post-development) are provided with the following items:
 - _____ Scale and north arrow (Note: Except in the instance of site-to-drainage area maps, the scale of each drainage area map shall not exceed 1" = 30').
 - _____ Sub-basin area(s) delineated with area(s) in acres indicated.
 - _____ Analysis points clearly identified and labeled.
 - _____ Segmented TR-55 time of concentration flow paths showing and labeling each segment.
- _____ Methodologies and procedures are fully described.
- _____ A site plan with contour lines or grading plan identifying pre- and post-development drainage patterns is provided.
- _____ Pre- and post-development times of concentration, calculated by TR-55 segmented approach, are provided.
- _____ Calculations for the pre- and post-development peak discharge rates are provided for the 1-, 2-, 10-, and 100-year, 24-hour storm using TR-55, TR-20, HEC-HMS, HEC-1 or Rational Method as applicable. Note: The Rational Method may be used only on small projects with drainage areas less than 20 acres and where no stormwater control measures need to be modeled.
- _____ A Summary of Results is provided in the following format:

Site Analysis Point # _____

Site Condition	Storm Event (cfs)				
	1-year (cfs)	2-year (cfs)	10-year (cfs)	100-year (cfs)	____-year (cfs)
Pre-Development					
Post-Development without Detention					
Post-Development with Detention					

- _____ Conclusions providing detailed findings are provided.
- _____ Stormwater control measure(s) (SCM[s]) are provided (indicate number of each type of SCM):
 - ___ Level Spreader w/ Vegetative Filter Strip ___ Stormwater Wetland
 - ___ Wet Detention Basin ___ Sand Filter ___ Bioretention ___ Grassed Swale
 - ___ Restored Riparian Buffer ___ Dry Extended Detention Basin
 - ___ Permeable Pavement ___ Green Roof ___ Disconnected Impervious Surface
 - ___ Rainwater Harvesting System
 - ___ Proprietary Systems or Other _____
 - ___ Not required (provide explanation): _____
- _____ The SCM(s) indicated above are required to control the following peak discharge rates:
 - ___ 1-year ___ 2-year ___ 10-year ___ 100-year ___ Other _____
- _____ A downstream analysis in accordance with the *Reference Guide for Development* is provided with findings, or is
 - ___ Not required (provide explanation):

C. POLLUTANT CONTROL REQUIREMENTS

Initials

- _____ The project is exempt based upon cumulative land disturbance as of the applicable baseline date.
- _____ The proposed project is $\geq 24\%$ impervious, 85% Total Suspended Solids (TSS) removal is provided for this project, and all the impervious area as reasonably practical is treated by an SCM.
 - OR
 - The proposed project is $<24\%$ impervious, 85% Total Suspended Solids (TSS) removal for all runoff from non-vegetated conveyances is provided for this project, and all the impervious area as reasonably practical is treated by an SCM.
 - OR
 - The project is low density ($<24\%$ impervious) without non-vegetated conveyances, thus TSS removal is not required.

_____ SCMs for TSS removal are provided (indicate number of each type of SCM): Note: Not all of the SCMs listed below provide 85% TSS removal as a stand-alone SCM and must be used in series with other SCMs to achieve the minimum TSS removal of 85%.

- Level Spreader w/ Vegetative Filter Strip Stormwater Wetland
 Wet Detention Basin Sand Filter Bioretention Grassed Swale
 Restored Riparian Buffer Dry Extended Detention Basin
 Permeable Pavement Green Roof Disconnected Impervious Surface
 Rainwater Harvesting System
 Proprietary Systems or Other _____
 Not required (provide explanation):

_____ Excel-format electronic copies of the following:

- Pre- and post-development nutrient calculations using the Jordan/Falls Lake Stormwater Nutrient Load Accounting Tool (for Lower Neuse Basin) or North Carolina Stormwater Nitrogen and Phosphorus Tool (for Falls Basin).

Note: Nutrient calculations are always required unless the project is exempt from treatment requirements.

- The Nutrient Reporting Form (including the Compliance Worksheet tab) per the 3/7/2013 Letter to Industry <http://durhamnc.gov/documentcenter/view/3185>.

_____ Pre- and post-development land use area maps that correspond to the categories used in the Jordan/Falls Lake Stormwater Nutrient Load Accounting Tool (for Lower Neuse Basin) or the North Carolina Stormwater Nitrogen and Phosphorus Tool (for Falls Basin) for the nutrient calculations, to scale no smaller than 1 inch = 100 feet. The maps shall show the map scale, north arrow, and are to have the different land uses either hatched or shaded with areas indicated in a legend on the maps. Note: The land use area maps are always required unless the project is exempt from treatment requirements.

_____ SCMs for nutrient control are provided (indicate number of each type of SCM):

___ Level Spreader w/ Vegetative Filter Strip ___ Stormwater Wetland

___ Wet Detention Basin ___ Sand Filter ___ Bioretention ___ Grassed Swale

___ Restored Riparian Buffer ___ Dry Extended Detention Basin

___ Permeable Pavement ___ Green Roof ___ Disconnected Impervious Surface

___ Rainwater Harvesting System

___ Proprietary Systems or Other _____

___ Not required (provide explanation):

_____ After meeting the minimum on-site treatment requirements, additional treatment and/or offsite credit purchases, if needed, is provided by:

___ Additional SCMs

___ Nutrient Offset Payment to the North Carolina Ecosystem Enhancement Program

___ Nutrient Offset Payment to an Approved Nutrient Bank

_____ The project site is located in an area subject to a state-approved Total Maximum Daily Load (TMDL) for bacteria. (As of December 2019, only Northeast Creek has a TMDL for bacteria and Third Fork Creek has a TMDL for turbidity).

_____ SCMs rated as medium or high for bacterial removal are provided (indicate number of each type of SCM):

___ Bioretention Area ___ Stormwater Wetlands

___ Wet Detention Basin ___ Sand Filter

___ Level Spreader w/ Vegetative Filter Strip ___ Restored Riparian Buffer

___ Dry Extended Detention Basin ___ Permeable Pavement

___ Other (specify) _____

___ Not required (provide explanation):

D. WATERSHED PROTECTION OVERLAY REQUIREMENTS

Initials

_____ 85% Total Suspended Solids (TSS) removal is required for this project, and 100% of the impervious area will be treated by an SCM. Note: Not all of the SCMs listed below provide 85% TSS removal as a stand-alone SCM and must be used in series with other SCMs to achieve the minimum TSS removal of 85%.

_____ SCM for TSS removal are provided (indicate number of each type of SCM):

- ____ Level Spreader w/ Vegetative Filter Strip ____ Stormwater Wetland
____ Wet Detention Basin ____ Sand Filter ____ Bioretention ____ Grassed Swale
____ Restored Riparian Buffer ____ Dry Extended Detention Basin
____ Permeable Pavement ____ Rooftop Runoff Management
____ Disconnected Impervious Surface ____ Rainwater Harvesting System
____ Proprietary Systems or Other _____
____ Not required (provide explanation):

E. ELECTRONIC FILE SUBMITTAL

Initials

_____ *Electronic submittal requirements* including the following submittals in accordance with Development Service Center protocols:

- ____ **Sealed SIA**: entire document including narrative, data, calculations, pre- and post-development drainage area maps, pre- and post-development land use area maps that correspond to the categories used in the JFLSAT or SNAP, and all appendices (pdf format)
____ Jordan/Falls Lake Stormwater Accounting Tool (Lower Neuse Basin) or SNAP Tool (Falls Basin) (Excel format)
____ Nutrient Reporting Form (Lower Neuse Basin or if multiple SNAP tool process is used) (Excel format)