Wake County Environmental Services Department
Water Quality Division, Watershed Management Section
336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
TEL 919 856-7400 • FAX 919 743-4772

SWCPS – STORMWATER CONSTRUCTION PLAN SUBMITTAL CHECKLIST (FALLS LAKE)

Project Name _____ **Watershed** _____ **New or Expansion (N/E)?** _____

Project Acreage _____ **Existing Impervious SF** _____ **Proposed Impervious** _____ **Disturbed Acreage** _____

Applicant:
Name _____
Address: _____
Phone: _____
Email: _____

Engineer:
Name: _____
Address: _____
Phone: _____
Email: _____

Construction Plan Review Submittal Package Requirements Applicant shall select all applicable items below and provide with the submittal. Unless otherwise noted, all references shown in brackets are for the *Wake County Unified Development Ordinance* (UDO), adopted 04/17/06.			
☐	**1.**		Erosion Control and Stormwater Joint Application (Required to initiate processing)
☐	**2.**		Review Fees (Required to initiate processing) RESUBMITTALS: The first resubmittal is free, but all subsequent resubmissions require a $150 Resubmission Fee.
☐	**3.**		Other documents:
	☐	**a.**	WC ONLY PRELIMINARY ZONING AND SUBDIVISION APPROVAL: Copy of approval notification (property description, subdivision or COSD approval, or Board of Adjustment approval, etc.)
	☐	**b.**	WC ONLY FLOOD STUDY: Copy of approval notification from Wake County Flood & Stormwater Environmental Engineer, (if applicable)
	☐	**c.**	ENGINEERING APPROVAL: Copy of approval notification for projects in a municipality's zoning jurisdiction
	☐	**d.**	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval)
	☐	**e.**	NCDOT Approval (Temporary Construction Entrances, Encroachment Agreements, etc.)
	☐	**f.**	Encroachment agreement(s) completed, signed and notarized for all off-site construction
☐	**4.**		Cover letter stating the purpose of the submission, describing site drainage, stormwater management objectives, and how the proposed stormwater management plan will meet the objectives and be implemented
☐	**5.**		Copy of the USGS Quad Map with delineated project limits in color
☐	**6.**		Copy of the Wake County Soil Survey map from 1970 manuscript with delineated project limits
☐	**7.**		One (1) electronic copy of the Hybrid Stormwater Tool (click here); submit Excel workbook (Site Data Sheet, Drainage Area Sheets, Site Summary Sheet, BMP Sheets, and BMP Summary sheet) See the Wake County Stormwater Manual for guidance Provide .csv file for SNAP tool (See SNAP tool User's Manual for Guidance on Exporting .csv file)
☐	**8.**		Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP)
	☐	**a.**	For Water Supply Watersheds: Provide drainage map showing drainage acres to the drainage features for properties in the water supply watershed zoning districts
☐	**9.**		1 set of Stormwater Calculations:

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	☐	**a.**	Support data for all stormwater practice designs, such as inflow/outflow rates, stage/storage data, hydrographs, outlet designs, infiltration rates, water elevations, design output, summary, etc.
	☐	**b.**	Other hydraulic and hydrologic computations critical to the plan/designs
	☐	**c.**	Signature, Date and Professional Seal: for all Stormwater design management proposals, i.e., calculations, BMP designs, operations/maintenance/budget/as-built/inspections/manuals.
☐	**10.**	One (1) electronic copy of a complete set of construction drawings for 1st submission, five (5) copies for final approval	
☐	**11.**	Draft Stormwater Agreement, Draft Maintenance Agreement, Draft Deed Restrictions / Protective Covenants Proposal, Draft As-Built Plan or performance guarantee paperwork	
☐	**12.**	Proposed Site Plan:	
	☐	**a.**	Location/Vicinity Map
	☐	**b.**	North arrow, graphic scale, drafting version date, legend and professional seal
	☐	**c.**	Existing and proposed contours: plan and profiles for roadways
	☐	**d.**	Boundaries of tract: including project limits
	☐	**e.**	Table with impervious calculations - existing and proposed impervious surfaces: roads, well lots, recreation sites, single family residences, etc. (consistent with SW Hybrid Tool inputs)
	☐	**f.**	Proposed improvements: roads, buildings, parking areas, grassed landscaped, and natural areas.
	☐	**g.**	Lot lines, lot numbers, road names, and impervious limit on each lot rounded to nearest whole number
	☐	**h.**	Utilities: community water and sewer, plan/profiles, easements and sediment controls, and offsite septic.
	☐	**i.**	Stormwater Network: inlets, culverts, swales, ditches, channels and drainage easements.
	☐	**j.**	Show all Riparian Buffers [*Article 9-21*]; (Neuse: [15A NCAC 02B.0233 & 0242]
	☐	**k.**	Delineation of current FEMA boundaries (floodway, non-encroachment areas, flood fringe and future/0.2%)
	☐	**l.**	Delineation of flood prone soil areas
	☐	**m.**	Proposed stormwater easements, access lanes and backwater easements. Provide and label minimum 20 ft. Access easement and 10 ft. Maintenance easement from toe of stormwater pond embankment. Provide and label 20 ft. Drainage easement between every 4 residential lots or 4 acres of drainage area.
	☐	**n.**	RESIDENTIAL ONLY Asterisk lots requiring flood permits
	☐	**o.**	Finished floor elevations as required
	☐	**p.**	A note should be added to the recorded plat distinguishing areas of disconnected impervious
	☐	**q.**	Location and type of all proposed stormwater management structures *(grass swale, wet/dry detention basin, filtering/infiltration basin, bioretention, etc.).* Must be located in a common area of development.
	☐	**r.**	Location of stormwater management structures should meet setback requirements from all wastewater system components in accordance with Regulations Governing Wastewater Treatment and Dispersal Systems in Wake County.

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	☐	**s.**	RESIDENTIAL ONLY Perpetuity statement *Impervious surface coverage shall not exceed impervious shown on the lot. Impervious surface limits will be strictly enforced into perpetuity.*
	☐	**t.**	Q-100 backwater elevations must be shown above all culverts/BMPs draining 4 or more acres.
Standards and Requirements By marking items with an "X", applicant acknowledges potential standards to be applied to the proposed development.			
Wake County UDO Article 8 – Subdivision Design and Improvements			
☐	**13.**		**Streams or Drainageways [Article 8-37-2]** – Easements for streams or drainageways must be provided and must follow the existing course of such streams or drainageways. Easements for drainage of surface waters from 4 lots or less may cross lots only if the Planning Board or Planning Director determines that such location will not pose a hazard to persons or property.
☐	**14.**		**Standards [Article 8-43]** – All subdivisions within the zoning districts R-40W, R-80W and overlay districts WSO-2NC, WSO-3CA, WSO-3NC and WSO-4P must be designed and constructed so that all development directly associated with the subdivision (e.g., roads, utilities, grading, drainage facilities) and all subsequent development (e.g., buildings, driveways, yards, on-site utilities, grading, drainage facilities) on the subdivision's lots and other parcels: • minimizes impervious or partially pervious surface coverage. • diffuses the flow of stormwater runoff, encourages sheet flow and avoids concentrated discharge of stormwater into surface waters. • incorporates Best Management Practices (BMPs) to minimize adverse water quality impacts. • transports stormwater runoff from the development by vegetated conveyances; and • avoids disturbance of vegetation within water supply watershed buffers.
Wake County UDO Article 9 - Stormwater Management Requirements See Wake County's *Stormwater Manual: Submittal and Design Guidance*			
☐	**15.**		**Stormwater Review Required -** All residential subdivision development must submit a plan to comply with Article 9. Minor subdivisions have the option of limiting impervious to 15%. Office, institutional, commercial or industrial development that disturbs greater than ½ acre is required to comply with the stormwater management regulations of Article 9.
☐	**16.**		**Stormwater Permit** – is required for all development and redevelopment unless exempt pursuant to the UDO. A permit may only be issued subsequent to a properly submitted, reviewed and approved stormwater management plan and permit application. [*Article 9*] Note: A permit may not be required if there are no post-construction requirements (i.e., BMPs).
☐	**19**		**Volume Management** – is required for RESIDENTIAL regular subdivisions when the post development curve number exceeds the pre-development curve number using the Wake County Hybrid Stormwater Tool. Minor subdivisions have the option of limiting impervious to 15%.
☐	**20.**		**SCMs** - For projects requiring stormwater treatment for quality and/or quantity control, the applicant must comply with the NC Stormwater Design Manual,, as well as *Article 9 Stormwater Management, Part 3 Completion and Maintenance of Improvements prior* to approval of the record plat.
☐	**21.**		**Downstream Impact Analysis** – Required analysis using the "10% rule" drainage area evaluation of the 10-year, 24-hour peak flow of the pre/post development to determine if the project will have any impacts on flooding or channel degradation downstream of the project site in accordance with Article 9-22.
Nutrient Management Strategies – Falls Lake Rules [15A NCAC 02B.0277] & [Article 9-21-2] See Wake County's *Stormwater Manual: Submittal and Design Guidance* Select all that apply.			

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☐	**22.**		**Peak Flow –** new development shall not result in a net increase in peak flow leaving the site from the pre-development conditions for the 1 yr-24 hr. storm.
☐	**23.**		**Nutrient Offset Option**- Nitrogen and Phosphorus Loads contributed by the proposed new development activity shall not exceed the unit area mass loading rate for nitrogen and phosphorus of 2.2 N lb./ac./yr. and 0.33 P lb./ac./yr. [15A NCAC 02B.0277(4)(a)] Developers shall have the option of offsetting part of their nitrogen and phosphorus loads by implementing or funding offset management measures. Before using the offsite offset option, a development shall implement onsite structural controls that achieve one of the following levels of reduction. Select one of the following:
	☐	**a.**	Proposed new development activity disturbing at least ½ acre but less than 1 acre of land for single family and duplex residential property & recreational facilities, shall achieve 30 % or more of the needed load reduction in both nitrogen and phosphorus loading onsite.
	☐	**b.**	Proposed new development activity disturbing at least 12,000 but less than 1 acre of land for commercial, industrial, institutional, multifamily residential, or local government property & other non-residential property, shall achieve 30 % or more of the needed load reduction in both nitrogen and phosphorus loading onsite;
	☐	**c.**	Except as stated in (d) below, proposed new development activity that disturbs 1 acre of land or more shall achieve 50 % or more of the needed load reduction in both nitrogen and phosphorus loading onsite.
	☐	**d.**	Proposed development that would replace or expand structures or improvements that existed as of December 2006 and that increases impervious surface within a local government's designated downtown area, regardless of area disturbed, shall achieve 30 % of the needed load reduction in both nitrogen and phosphorus onsite.
	☐	**e.**	**Replacement or Expansion w/No Net Increase in BUA** – proposed development that would replace or expand structures or improvements that existed as of December 2006, and that would not result in a net increase in built-upon area shall not be required to meet nutrient loading targets or high-density requirements except to the extent that the developer shall provide stormwater control at least equal to the previous development.
	☐	**f.**	**Replacement or Expansion with Net Increase in BUA** - proposed development that would replace or expand structures or improvements and that would result in a net increase in built-upon area shall have the option either to achieve at least the % loading reduction objectives as applied to nitrogen (40%) and phosphorous (77%) loading from the previous development for the entire project site, or to meet the loading rate targets expressed in lbs./ac./yr. of nitrogen 2.2 and phosphorous 0.33.
	☐	**g.**	**Compliance Alternative/LID option** - Developments that show volume matching using Storm-EZ shall be considered as meeting nutrient export requirements without making offset payments provided the following: • When analyzing a development site, the pre-development land cover shall be entered into Storm-EZ as "Woods" for the entire project area. • The Wake Couty Hybrid Tool must be run to estimate the pre-development, and post-development, post-BMP nutrient export rates for the site. See NCDENR Memo on Coordination between LID & NSW Programs

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Wake County UDO Article 10 - Erosion and Sedimentation Control Requirements			
☐	**24.**		**Erosion Control:** This project will require an Approved Erosion and Sediment Control Plan and Land Disturbance Permit if it involves greater than one acre of disturbance [10-13-1(A)]. **Note**: If the land disturbance is part of a common plan of development that is greater than one acre of disturbance, an Approved Erosion and Sediment Control Plan and Land Disturbance Permit are required for each individual tract or parcel disturbance within the common plan of development, regardless of land disturbance acreage in each tract/parcel.
Wake County UDO Article 11 - Environmental Standard Requirements			
☐	**25.**		**Water Supply Watershed Buffers (WSWB) *Article 11, Part 2*** Select all that apply.
	☐	**a.**	**Water Supply Impoundments with a drainage area of 25 acres or more [Article 11-21-2]:** • WSWB required with a minimum width of 100 feet around all water supply impoundments • Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.
	☐	**b.**	**Water Supply Impoundments with a drainage area of 5 to 25 Acres [Article 11-21-3]:** • WSWB required with a minimum width of 30 feet provided around all water impoundments • Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.
	☐	**c.**	**Non-Water Supply Impoundments with a drainage area of 25 Acres or more [Article 11-21-4]:** • WSWB required with minimum width of 50 feet around all non-water supply impoundments. • Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.
	☐	**d.**	**Perennial Streams [Article 11-21-5]:** • WSWB required with a minimum width of 100 feet along each side of a stream shown as a perennial stream on the most recent edition of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps. • The area of the required buffer that begins at the stream bank and extends landward 50 feet is subject to the Zone 1 standards of Sec. Section 11-22-1(A). • The area of the required buffer that begins at the outer edge of Zone 1 and extends landward 50 feet is subject to the Zone 2 standards of Sec. Section 11-22-1(B). • No minimum building setback from the required buffer.
	☐	**e.**	**Non-Perennial Watercourses [Article 11-21-6]** • WSWB required with a minimum width of 50 feet along each side of non-perennial watercourses, channels, ditches or similar physiographic features with a drainage area of 25 acres or more • Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.
	☐	**f.**	**Watercourses and Channels, 5 to 25 Acres [Article 11-21-7]** • WSWB required with a minimum width of 30 feet along each side of a watercourse, channel, ditch, or similar physiographic feature with a drainage area of at least 5 acres, but less than 25 acres • Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.
	☐	**g.**	**Activities Allowed within Buffers [Article 11-22-2]:** Driveway crossings that access single-family dwellings, provided: • no alternative to their location in the buffer (including opportunity for shared driveways) exists. • buffer disturbance is no more than 60 feet wide. • buffer disturbance is no more than 6,000 SF. • the driveway crosses the buffer at an angle close to 90 degrees and not less than 60 degrees. • side slopes do not exceed a 2:1 (horizontal to vertical) ratio (bridging and/or retaining walls may be used to meet this and the disturbance width standard); and • all culverts are designed and constructed for the 25-year storm event

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	☐	**h.**	**Activities Allowed within Buffers [Article 11-22-2]:** Road crossings (public or private roads), provided: • no alternative location in the buffer exists. • buffer disturbance does not extend beyond the required right-of-way or easement width, or in no case is more than 90 feet wide. • buffer disturbance is no more than 9,000 SF in area. • the road crosses the buffer at an angle close to 90 degrees and not less than 60 degrees. • side slopes do not exceed a 2:1 horizontal: vertical ratio (bridging and/or retaining walls may be used to meet this and the disturbance width standard); and • all culverts are designed and constructed for the 25-year storm.
Wake County UDO Article 14 - Flood Hazard Area Requirements			
☐	**26.**	**Flood Study Required [*Article 14*]** A study of the potential changes in the base flood elevation caused by the obstruction (fill), encroachment, alteration or relocation (including driveway or road crossings) of the following areas:	
	☐	**a.**	a FEMA mapped floodway (Note: No new structures may be constructed or placed within a floodway or non-encroachment area except as otherwise provided by subsection 14-19-2; **AND** No fill may be placed in a floodway or non-encroachment area except as otherwise provided by subsection 14-19-2; [Article 14-19-3(A-B)])
	☐	**b.**	a non-encroachment area [Article 14-19-3(A-B)], see note above
	☐	**c.**	a FEMA mapped area of special flood hazard that has not previously been studied in detail
	☐	**d.**	flood hazard soils areas with a total drainage area of more than 5 ac but no more than 25 ac [Article 14-15-3] – or -
	☐	**e.**	flood hazard soils areas with a total drainage area of more than 25 ac, but less than 100 ac [Article 14-15-4] – or -
	☐	**f.**	flood hazard soils area with a total drainage area of 100 ac or more [Article 14-15-5]
☐	**27.**	**Impoundments and Dams [14-23]**	
	☐	**a.**	Any construction, repair, alteration, or removal of a jurisdictional dam shall obtain State Agency Approval in accordance with Article 21, Chapter 143 of the North Carolina General Statutes. [Article 14-23-1]
	☐	**b.**	If an impoundment is proposed to be constructed or retained within any proposed subdivision, the following standards shall apply. These County standards are separate from and do not supersede any State Agency requirements. • The impoundment and its dam shall be constructed or structurally upgraded to accommodate the runoff from a 24-hour, 100-year frequency storm. • Runoff computations must use SCS methods or other acceptable engineering standards. [Article 14-23-2]

Applicant Signature: _____

Date: _____