



**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.

<input type="checkbox"/>	1.	<a href="#">Erosion Control and Stormwater Joint Application</a> (Required to initiate processing)
<input type="checkbox"/>	2.	<a href="#">Review Fees</a> (Required to initiate processing) RESUBMITTALS: The first resubmittal is free, but all subsequent resubmissions require a \$250 Resubmission Fee.
<input type="checkbox"/>	3.	Other documents:
<input type="checkbox"/>	a.	WC ONLY PRELIMINARY ZONING AND SUBDIVISION APPROVAL: Copy of approval notification (property description, subdivision or COSD approval, or Board of Adjustment approval, etc.)
<input type="checkbox"/>	b.	WC ONLY FLOOD STUDY: Copy of approval notification from Wake County Flood & Stormwater Environmental Engineer, (if applicable)
<input type="checkbox"/>	c.	ENGINEERING APPROVAL: Copy of approval notification for projects in a municipality's zoning jurisdiction
<input type="checkbox"/>	d.	401/404 Documentation (Buffer determination letters, PCN application, comments, and approval)
<input type="checkbox"/>	e.	NCDOT Approval (Temporary Construction Entrances, Encroachment Agreements, etc.)
<input type="checkbox"/>	f.	Encroachment agreement(s) completed, signed and notarized for all off-site construction
<input type="checkbox"/>	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
<input type="checkbox"/>	5.	Copy of the <a href="#">USGS Quad Map</a> with delineated project limits in color
<input type="checkbox"/>	6.	Copy of the <a href="#">Wake County Soil Survey map</a> from 1970 manuscript with delineated project limits
<input type="checkbox"/>	7.	One (1) electronic copy of the Hybrid Stormwater Tool ( <a href="#">click here</a> ); submit Excel workbook (Site Data Sheet, Drainage Area Sheets, Site Summary Sheet, BMP Sheets, and BMP Summary sheet) See the <a href="#">Wake County Stormwater Manual</a> for guidance Provide .csv file for <a href="#">SNAP tool</a> (See SNAP tool <a href="#">User's Manual</a> for Guidance on Exporting .csv file)
<input type="checkbox"/>	8.	Drainage Area Maps with stormwater discharge points and Tc flow paths (existing/post construction/post BMP)



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<input type="checkbox"/>	<input type="checkbox"/>	a.	For Water Supply Watersheds: Provide drainage map showing drainage acres to the drainage features for properties in the water supply watershed zoning districts
<input type="checkbox"/>	<b>9.</b>	1 set of Stormwater Calculations:	
<input type="checkbox"/>	<input type="checkbox"/>	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.
<input type="checkbox"/>	<input type="checkbox"/>	b.	Other hydraulic and hydrologic computations critical to the plan/designs
<input type="checkbox"/>	<input type="checkbox"/>	c.	Signature, Date and Professional Seal: for all Stormwater design management proposals, i.e., calculations, BMP designs, operations/maintenance/budget/as-built/inspections/manuals.
<input type="checkbox"/>	<b>10.</b>	One (1) electronic copy of a complete set of construction drawings for 1st resubmission, resubmittals, revisions, and for final approval and signature. Signed hard copies are required for the preconstruction meeting.	
<input type="checkbox"/>	<b>11.</b>	Draft Stormwater Agreement, Draft Maintenance Agreement, Draft Deed Restrictions / Protective Covenants Proposal, Draft As-Built Plan or performance guarantee paperwork	
<input type="checkbox"/>	<b>12.</b>	Proposed Site Plan:	
<input type="checkbox"/>	<input type="checkbox"/>	a.	Location/Vicinity Map
<input type="checkbox"/>	<input type="checkbox"/>	b.	North arrow, graphic scale, drafting version date, legend and professional seal
<input type="checkbox"/>	<input type="checkbox"/>	c.	Existing and proposed contours: plan and profiles for roadways
<input type="checkbox"/>	<input type="checkbox"/>	d.	Boundaries of tract: including project limits
<input type="checkbox"/>	<input type="checkbox"/>	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)
<input type="checkbox"/>	<input type="checkbox"/>	f.	Proposed improvements: roads, buildings, parking areas, grassed landscaped, and natural areas.
<input type="checkbox"/>	<input type="checkbox"/>	g.	Lot lines, lot numbers, road names, and impervious limit on each lot rounded to nearest whole number
<input type="checkbox"/>	<input type="checkbox"/>	h.	Utilities: community water and sewer, plan/profiles, easements and sediment controls, and offsite septic.
<input type="checkbox"/>	<input type="checkbox"/>	i.	Stormwater Network: inlets, culverts, swales, ditches, channels and drainage easements.
<input type="checkbox"/>	<input type="checkbox"/>	j.	Show all Riparian Buffers [Article 9-21]; (Neuse: [15A NCAC 02B.0233 & 0242])
<input type="checkbox"/>	<input type="checkbox"/>	k.	Delineation of current FEMA boundaries (floodway, non-encroachment areas, flood fringe and future/0.2%)
<input type="checkbox"/>	<input type="checkbox"/>	l.	Delineation of flood prone soil areas
<input type="checkbox"/>	<input type="checkbox"/>	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.
<input type="checkbox"/>	<input type="checkbox"/>	n.	RESIDENTIAL ONLY Asterisk lots requiring flood permits
<input type="checkbox"/>	<input type="checkbox"/>	o.	Finished floor elevations as required
<input type="checkbox"/>	<input type="checkbox"/>	p.	A note should be added to the recorded plat distinguishing areas of disconnected impervious



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<input type="checkbox"/>	q.	Location and type of all proposed stormwater management structures ( <i>grass swale, wet/dry detention basin, filtering/infiltration basin, bioretention, etc.</i> ). Must be located in a common area of development.
<input type="checkbox"/>	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.
<input type="checkbox"/>	s.	<b>RESIDENTIAL ONLY</b> Perpetuity statement <i>Impervious surface coverage shall not exceed impervious shown on the lot. Impervious surface limits will be strictly enforced into perpetuity.</i>
<input type="checkbox"/>	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**

<input type="checkbox"/>	13.	<b>Streams or Drainageways [Article 8-37-2]</b> – 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.
<input type="checkbox"/>	14.	<b>Standards [Article 8-43]</b> – 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: <ul style="list-style-type: none"> <li>• minimizes impervious or partially pervious surface coverage.</li> <li>• diffuses the flow of stormwater runoff, encourages sheet flow and avoids concentrated discharge of stormwater into surface waters.</li> <li>• incorporates Best Management Practices (BMPs) to minimize adverse water quality impacts.</li> <li>• transports stormwater runoff from the development by vegetated conveyances; and</li> <li>• avoids disturbance of vegetation within water supply watershed buffers.</li> </ul>

**Wake County UDO Article 9 - Stormwater Management Requirements**  
See the [Wake County Stormwater Manual](#) for guidance

<input type="checkbox"/>	15.	<b>Stormwater Review Required</b> - 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.
<input type="checkbox"/>	16.	<b>Stormwater Permit</b> – 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).
<input type="checkbox"/>	19	<b>Volume Management</b> – 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%.



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<input type="checkbox"/>	20.	<b>SCMs</b> - For projects requiring stormwater treatment for quality and/or quantity control, the applicant must comply with the <a href="#">NC DEQ Stormwater Design Manual</a> , as well as <i>Article 9 Stormwater Management, Part 3 Completion and Maintenance of Improvements prior</i> to approval of the record plat.
<input type="checkbox"/>	21.	<b>Downstream Impact Analysis</b> – 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.
<p><b>Nutrient Management Strategies – Falls Lake Rules [15A NCAC 02B.0277] &amp; [Article 9-21-2]</b> See the <a href="#">Wake County Stormwater Manual</a> for guidance Select all that apply.</p>		
<input type="checkbox"/>	22.	<b>Peak Flow</b> – 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.
<input type="checkbox"/>	23.	<b>Nutrient Offset Option</b> - 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. <u>Select one of the following:</u>
<input type="checkbox"/>	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.
<input type="checkbox"/>	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;
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	e.	<b>Replacement or Expansion w/No Net Increase in BUA</b> – 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.
<input type="checkbox"/>	f.	<b>Replacement or Expansion with Net Increase in BUA</b> - 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.



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	<input type="checkbox"/>	g.	<p><b>Compliance Alternative/LID option</b> - Developments that show volume matching using <a href="#">Storm-EZ</a> shall be considered as meeting nutrient export requirements without making offset payments provided the following:</p> <ul style="list-style-type: none"> <li>• When analyzing a development site, the pre-development land cover shall be entered into Storm-EZ as “Woods” for the entire project area.</li> <li>• The Wake Couty Hybrid Tool must be run to estimate the pre-development, and post-development, post-BMP nutrient export rates for the site.</li> </ul> <p>See NCDENR <a href="#">Memo on Coordination between LID &amp; NSW Programs</a></p>
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**Wake County UDO Article 10 - Erosion and Sedimentation Control Requirements**

<input type="checkbox"/>	24.	<p><b>Erosion Control:</b> This project will require an Approved Erosion and Sediment Control Plan and Land Disturbance Permit if it involves <u>greater than one acre of disturbance</u> [10-13-1(A)]. <b>Note:</b> 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.</p>
<input type="checkbox"/>	25.	<p><b>Review and Discussion [Article 10-30-3(J)]</b> If an erosion and sedimentation control plan has been disapproved, the applicant has 12 months to submit revised plans addressing the reasons for disapproval or the erosion and sedimentation control plan is deemed null and void.</p>
<input type="checkbox"/>	26.	<p><b>Validity of Plan, Lapse of Approval [Article 10-30-6]</b> An approved erosion and sedimentation control plan is valid for two calendar years from the date of approval. If a land disturbance permit has not been obtained within the two-year period, the erosion and sedimentation control plan approval becomes null and void.</p>

**Wake County UDO Article 11 - Environmental Standard Requirements**

<input type="checkbox"/>	27.	<p><b>Water Supply Watershed Buffers (WSWB) Article 11, Part 2</b> Select all that apply.</p>
<input type="checkbox"/>	a.	<p><b>Water Supply Impoundments with a drainage area of 25 acres or more [Article 11-21-2]:</b></p> <ul style="list-style-type: none"> <li>• WSWB required with a minimum width of 100 feet around all water supply impoundments</li> <li>• Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.</li> </ul>
<input type="checkbox"/>	b.	<p><b>Water Supply Impoundments with a drainage area of 5 to 25 Acres [Article 11-21-3]:</b></p> <ul style="list-style-type: none"> <li>• WSWB required with a minimum width of 30 feet provided around all water impoundments</li> <li>• Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.</li> </ul>
<input type="checkbox"/>	c.	<p><b>Non-Water Supply Impoundments with a drainage area of 25 Acres or more [Article 11-21-4]:</b></p> <ul style="list-style-type: none"> <li>• WSWB required with minimum width of 50 feet around all non-water supply impoundments.</li> <li>• Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.</li> </ul>



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<input type="checkbox"/>	d.	<p><b>Perennial Streams [Article 11-21-5]:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>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).</li> <li>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).</li> <li>No minimum building setback from the required buffer.</li> </ul>
<input type="checkbox"/>	e.	<p><b>Non-Perennial Watercourses [Article 11-21-6]</b></p> <ul style="list-style-type: none"> <li>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</li> <li>Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.</li> </ul>
<input type="checkbox"/>	f.	<p><b>Watercourses and Channels, 5 to 25 Acres [Article 11-21-7]</b></p> <ul style="list-style-type: none"> <li>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</li> <li>Buildings must be setback at least 20 feet from the outer boundary of the required buffer area.</li> </ul>
<input type="checkbox"/>	g.	<p><b>Activities Allowed within Buffers [Article 11-22-2]:</b> Driveway crossings that access single-family dwellings, provided:</p> <ul style="list-style-type: none"> <li>no alternative to their location in the buffer (including opportunity for shared driveways) exists.</li> <li>buffer disturbance is no more than 60 feet wide.</li> <li>buffer disturbance is no more than 6,000 SF.</li> <li>the driveway crosses the buffer at an angle close to 90 degrees and not less than 60 degrees.</li> <li>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</li> <li>all culverts are designed and constructed for the 25-year storm event</li> </ul>
<input type="checkbox"/>	h.	<p><b>Activities Allowed within Buffers [Article 11-22-2]:</b> Road crossings (public or private roads), provided:</p> <ul style="list-style-type: none"> <li>no alternative location in the buffer exists.</li> <li>buffer disturbance does not extend beyond the required right-of-way or easement width, or in no case is more than 90 feet wide.</li> <li>buffer disturbance is no more than 9,000 SF in area.</li> <li>the road crosses the buffer at an angle close to 90 degrees and not less than 60 degrees.</li> <li>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</li> <li>all culverts are designed and constructed for the 25-year storm.</li> </ul>
<b>Wake County UDO Article 14 - Flood Hazard Area Requirements</b>		
<input type="checkbox"/>	28.	<p><b>Flood Study Required [Article 14]</b> 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:</p>
<input type="checkbox"/>	a.	<p>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; <b>AND</b> 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)])</p>



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<input type="checkbox"/>	<b>b.</b>	a non-encroachment area [Article 14-19-3(A-B)], see note above
<input type="checkbox"/>	<b>c.</b>	a FEMA mapped area of special flood hazard that has not previously been studied in detail
<input type="checkbox"/>	<b>d.</b>	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 -
<input type="checkbox"/>	<b>e.</b>	flood hazard soils areas with a total drainage area of more than 25 ac, but less than 100 ac [Article 14-15-4] – or -
<input type="checkbox"/>	<b>f.</b>	flood hazard soils area with a total drainage area of 100 ac or more [Article 14-15-5]
<input type="checkbox"/>	<b>29.</b>	<b>Impoundments and Dams [14-23]</b>
<input type="checkbox"/>	<b>a.</b>	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]
<input type="checkbox"/>	<b>b.</b>	<p>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.</p> <ul style="list-style-type: none"> <li>• The impoundment and its dam shall be constructed or structurally upgraded to accommodate the runoff from a 24-hour, 100-year frequency storm.</li> <li>• Runoff computations must use SCS methods or other acceptable engineering standards. [Article 14-23-2]</li> </ul>

**Applicant Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_