



### Wake County Flood Study Checklist

Under county ordinance, encroachments into Special Flood Hazard Areas (SFHA) require Permit and Certification Requirements per Article 14, Flood Hazard Areas, of the Unified Development Ordinance (UDO). The purpose of a Flood Study Report is to promote the public health, safety and general welfare by reducing public and private losses caused by flood conditions in SFHA. This checklist shows what information needs to be provided and what issues need to be addressed when preparing a Flood Study Report. All items listed may not be applicable to each site, nor is the list all-inclusive. It is meant to serve as a guide for the engineer preparing a Flood Study Report.

#### Delineate and Label On Map (1"=equals no more than 100') & Drawings

##### For all Special Flood Hazard Areas (SFHA)

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| Provide flood study report narrative describing study objectives and include a summary of findings  |
| Existing and proposed watershed, sub-watershed, and land use boundaries with supporting Zoning overlaid. Wake County requires Flood Study reports to be designed for upstream built out conditions.   |
| Include all assumption for supporting methodology used for determining Cubic Feet per Second (Q100).  |
| Drainage area worksheets delineating upstream drainage area in Acres.   |
| Existing and proposed Tc/Tt flow paths used to calculate pre/post development flows.  |
| Show/label all SFHA encroachment information, including field surveyed cross-sections referenced to station locations, proposed culvert inverts, profile view, plan view, back slopes, all elevations, channel slope and sum of disturbed areas are required.   |
| Indicate the location and establishment of a temporary or permanent benchmark, note must be NAVD 88 for all SFHA's.   |
| Documentation supporting applicant's choice of Manning "n" values for channel and/or over bank.   |
| A velocity dissipater design specifying length, width, mean stone diameter, outlet velocity and detail is required for each culvert.  |
| Note the Minimum Finished Floor Elevation on lots that are affected by the SFHA 100yr floodplain . Example FFE = 268.4'   |
| Submit draft flood study as built compliance document.  |
| Should flood study design incorporate overtopping of <b>PRIVATE</b> driveway, specify stabilization scope and type of downstream embankment.  |
| Place an *(asterisk) on all lots affected with SFHA and add note to plans " * - Before Acquiring a Building Permit for Lots Marked with an " * " the Builder May Need to Obtain a Flood Hazard Permit from County Zoning Administration. The Builders Engineer, Architect or Surveyor Must Certify on Any Permit That All Flood Hazard Requirements Are Met. There Shall be No Filling or the Erection of Permanent Structures in the Areas of Wake County Flood Hazard Soils or Federal Emergency Management Agency Zones. |
| For submerged culverts to meet 404/401 certification, adjust the effective flow area in HEC-RAS report to reflect this condition.   |
| Floodstudy report results should take into account and summarize the pre-construction and the post-construction BFE at the upstream and downstream property lines before and after the proposed encroachment.   |
| Should revised flood study report prove offsite backwater, applicant must secure and record any necessary backwater encroachment easements.   |
| Overlay and Label Future Conditions and 500 year Floodplain.  |
| Submit draft flood study as built compliance document.  |
| Signature, Date And Professional Seal: for all Material to be reviewed.   |

##### For Minor Flood Studies (Drainage area less than 100 acres)

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| Inlet and Outlet Control Head Water computations and elevations for all culverts  |
| Delineate HW/D backwater area plus 1 (one) foot rise and label as Q100 backwater easement and label FFE on all affected lots with Special Flood Hazard Areas. |
| Use of Bureau of Public Roads Culvert chart for inlet and outlet computations provided for review   |

##### For Major Flood Studies (Drainage area greater than 100 acres).

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| Inlet and Outlet Control Head Water computations and elevations for all culverts  |
| Delineate HW/D backwater area plus 1 (one) foot rise and label as Q100 backwater easement and label FFE on all affected lots with Special Flood Hazard Areas. |
| Provide Standard Step Method or equivalent computations and field surveyed cross sections locations on construction plans.                                    |