PDN Stage 2HY1 – Hydraulics QC Checklist

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| **SPOT ID/Project TIP #:** |  Click or tap to edit. |
| **County:** |  Click or tap to edit. |

2HY1: Develop Preliminary Hydraulic Recommendations

Deliverables: Hydraulic Planning Report

 Preliminary Stormwater Management Plan

| **Item #** | **Review Item** | **Yes** | **No** | **N/A** |
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|  | **Hydraulic Planning Report** |  |  |  |
|  | **Design Calculations and Structure Sizing** |  |  |  |
|  | Future development and land use considered for discharge calculations. |[ ] [ ] [ ]
|  | Appropriate hydrologic method used to compute discharges |[ ] [ ] [ ]
|  | Resiliency and applicability of higher Level of Service evaluated for important transportation corridors such as State Transportation Corridor, evacuation routes, interstates, major roadways etc. in accordance with Chapter 3 of the [Guidelines](https://connect.ncdot.gov/resources/hydro/Pages/Guidelines-Drainage-Studies.aspx). |[ ] [ ] [ ]
|  | Comparison of USGS and FEMA discharges and justification of appropriate discharges to be used for design. |[ ] [ ] [ ]
|  | Determination of appropriate design storm event and level of service was provided. |[ ] [ ] [ ]
|  | Existing structure at each site assessed for hydraulic adequacy and structural integrity.  |[ ] [ ] [ ]
|  | Recommendation of proposed hydraulic structure at each site including size, location, and grade requirements. If bridge, assumed superstructure type/size and recommended span arrangement included. If culvert, assumed recommended size and determination whether sills & baffles are needed. |[ ] [ ] [ ]
|  | For bridge crossings, a recommended size, location, and approximate grade for a detour structure is provided.  |[ ] [ ] [ ]
|  | Bridge Recommendations follow minimum bridge length guidelines and are appropriately skewed. Documentation shows how recommended bridge length was determined. |[ ] [ ] [ ]
|  | Preliminary Hydroplaning Assessment of proposed roadway typical section(s) completed as needed and a mitigation method provided if the typical section(s) were not adequate.  |[ ] [ ] [ ]
|  | **Report Preparation** |  |  |  |
|  | Sections 1, 2, and 3 of the “Preliminary Hydraulic Field Visit Checklist” have been completed using the current [Guidelines](https://connect.ncdot.gov/resources/hydro/Pages/Guidelines-Drainage-Studies.aspx). |[ ] [ ] [ ]
|  | Dated cover page noting firm’s name & sealed by NC registered professional engineer |[ ] [ ] [ ]
|  | General Information from the HPR Template is complete and accurate.* Miscellaneous Project Information
* Green Sheet Commitments
* Risk Identification
* Avoidance and Minimization
 |[ ] [ ] [ ]
|  | Site Map provided with label for all sites |[ ] [ ] [ ]
|  | A complete and accurate “Preliminary Hydraulic Recommendations for Major Crossings” Table is provided. Information in table is consistent with information elsewhere in the report. |[ ] [ ] [ ]
|  | Site information provided for each major drainage structure stream crossing as noted in the HPR Template and is complete and accurate. |[ ] [ ] [ ]
|  | Site risks associated with the proposed structure are identified and noted in the Site Data. |[ ] [ ] [ ]
|  | NCDOT Maintenance personnel contacted for flood history and historical performance at each site and information obtained included in report. |[ ] [ ] [ ]
|  | Local resident interviews with reliable information on flooding or overtopping events |[ ] [ ] [ ]
|  | Sketch of plan and profile view to scale, showing existing site data, and recommended structure. |[ ] [ ] [ ]
|  | NFIP Flood Map Panel labeled with site number, proposed structure, and project area outline |[ ] [ ] [ ]
|  | Site photos provided with descriptions listed below |[ ] [ ] [ ]
|  | Preliminary Hydroplaning Assessment of preliminary roadway typical sections (as needed) |[ ] [ ] [ ]
|  | Supplemental Data contains all applicable items, including all supporting data and calculations |[ ] [ ] [ ]
|  | **Submittal Formatting** |[ ] [ ] [ ]
|  | Most current version of HPR Template used |[ ] [ ] [ ]
|  | PDF report formatted to print on either 8½“ x 11” or 11” x 17” |[ ] [ ] [ ]
|  | Submittal includes all deliverables noted and documented in the HPR deliverables checklist  |[ ] [ ] [ ]
|  | **Preliminary Stormwater Management Plan (pSMP)** |  |  |  |
|  | Stormwater management goals identified for each crossing using the NC SELDM catalog application |[ ] [ ] [ ]
|  | Preliminary Stormwater Management Plan prepared  |[ ] [ ] [ ]
|  | Supplemental information provided for any existing stormwater BMPs within the project limits |[ ] [ ] [ ]
|  | Most current version of SMP template (Excel file) used |[ ] [ ] [ ]

*For items marked* ***No*** *that require further explanation, provide comments or action items in the table below.*

| **Item #** | **Comments and Action Items** |
| --- | --- |
|  Click to edit. |  Click to edit. |

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| **This checklist may not be comprehensive to every project. All items may not be applicable for smaller projects. It is the responsibility of the reviewer to ensure that all necessary information has been provided and an adequate review performed.** |
| **QC Reviewer Name:** |  Click to edit. | **Date:** |  Click to edit. |
| **QC Reviewer (Signature):** |  |  |  |