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| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **COUNTY** | | | **ROUTE** | | | **STATION** | | | **UPN** | | | **FPN** | | | **ITEM #** | | | **LEVEL 1 –** Qualitative assessment involving the application of hydrologic, hydraulic, and geomorphic factors to identify potential problems and alternative solutions for bridges. Perform hydrologic analysis and field survey *(i.e. bridge opening, roadway profile, stream profile, hydraulic sections, etc.).* | | | | | | | | | Review (check) available documentation: | | | | | | | | | County Soils Study | | Old Drainage Folder | | | Flood Insurance Maps | | | | Flood Insurance Study | | Geologic Maps | | | Roadway Plans | | | | USACE Study | | USGS Study | | | Other: | | | | Bridge Maintenance File | | Bridge Plans | | |  | | | |  | |  | | |  | | | | * Is the proposed structure a new crossing?  Yes  No * Is the proposed bridge > 2 bridge widths up or downstream of the existing bridge, > 50 feet long *(total bridge length)* multispan, > 100 feet long *(single span)?*  Yes  No * Does the proposed bridge have a grade increase that is larger than the allowable increase?  Yes  No * Is the proposed bridge in a FEMA Detailed Study Area?  Yes  No * Is the proposed bridge in a mapped Floodplain where the community is requesting the development of BFEs?  Yes  No * Is a scour analysis needed?  Yes  No   Replace with hydrologically, hydraulically, and geomorphically equivalent structure. If all issues are addressed with the equivalent structure, document design. If there are outstanding issues that cannot be resolved with Level 1 analysis, go to Level 2. | | | | | | | | | **LEVEL 2 –** Quantitative analysis combined with a more detailed qualitative assessment of the hydrologic, hydraulic, and geomorphic factors of the stream. Generally includes water surface profile and scour calculations. | | | | | | | | | List Design Controls *(i.e. hydraulic, roadway, structure, surrounding property, etc.)* | | | | | | | | | Perform hydraulic analysis and scour analysis. Evaluate stream stability. | | | | | | | | | If the answer to either of the following 2 questions is Yes, go to Level 3. | | | | | | | | | Is the desk area >120,000 ft2?  Yes  No | | | | | | | | | Is the existing or proposed structure a unique bridge, foundation, etc.?  Yes  No | | | | | | | | | Design structure to meet the design controls. If design controls are met, document design. If there are outstanding issues that cannot be resolved with a Level 2, go to Level 3. | | | | | | | | | **LEVEL 3 –** Complex quantitative analysis based on detailed mathematical modeling and possibly physical hydraulic modeling. This analysis is necessary only for high risk locations, extraordinarily complex problems, and after the fact analysis where losses and liability costs are high. | | | | | | | | | Check if used: | FESWMS Analysis | | | Floodway Modification\* | | | Overflow structure(s) | |  | Risk Analysis | | | Other | | | | | Document Design | | | | | | | |   \*IF Existing Roadway Width < Proposed, Purchase Floodway Increase. If Existing Floodway Elevation < Proposed, Purchase Floodplain Increase. |