

CHAPTER 10

PRESENTATION OF MODELING RESULTS

10.1 Purpose

Effective presentation of modeling results facilitates the review and permitting of the submittal. A well-constructed and documented model is easier to review. Time invested in documentation often reduces review times. If there are errors, the documentation process is useful to identify and correct them, both before or after submitting. And a well-documented model is also easier to use when subsequent modeling efforts on the same stream are initiated. The purpose of this chapter is to provide suggestions for effective documentation of the modeling that supports a floodplain hydrologic-hydraulic assessment.

10.2 Hydraulic Modeling Checklist

The IDNR Hydraulic Modeling Checklist is included as an appendix of these guidelines. The current version can be obtained at the IDNR website. The checklist is consistent with and reinforces the concepts and suggestions presented in these guidelines.

The checklist will help a requester provide the IDNR with data and information needed to conduct the review process in accordance with the Department's minimum standards of acceptability. The modeling checklist promotes familiarity, increases understanding, and lessens frustration during the review. Moreover, the checklist introduces questions intended to highlight potential problem areas so the modeler can make corrections before submittal to the IDNR. The questions serve a dual purpose for both the modeler and reviewer.

- Suggest a method for checking the viability of the model by evaluating the data presented and quantitative output
- gain greater insight in reviewing site conditions, modeling assumptions, and project impacts.

Ultimately, this means the modeler spends less time explaining what he or she did and why, and IDNR personnel spend less time trying to determine the modeler's intent.

Modeling submitted in support of a construction in a floodway permit application is reviewed and evaluated by the ESC. The modeling checklist must be included with the submittal. Models submitted without a completed checklist will not be reviewed until a completed checklist is submitted. Upon the review of the

submitted checklist and modeling, the ESC will draft a technical memorandum recommending either approval or denial of the project, or asking for corrections to the modeling before a conclusion can be reached. Refer back to Section 3.3 for applicable principles and procedures.

10.3 Project Evaluation Table

For IDNR approval, the requester must demonstrate that the project will not, either individually or in combination with other past, present, and reasonably foreseeable future actions, increase the BFE by more than 0.14 feet outside the requester's property. This is calculated by comparing the elevations from the Proposed or Post-Project Condition Model with the Existing or Pre-Project Condition Model as well as with the Corrected Effective Model, or with the Duplicate Effective Model, if no enhancements/corrections were performed. The Project Evaluation Table provides a standard format for presenting these results and identifying whether the elevation differences are acceptable. Figure 3-1 depicts a sample Project Evaluation Table, which should be included in the submittal package.

10.4 Hydraulic Modeling Documentation

FEMA and IDNR recommend that all the documentation for a model be presented in a notebook form (hardcopy or PDF), including a narrative regarding the modeling, the checklists and application forms, model output and results, cross-section and profile plots, tables, photos and any other relevant support materials.

Plans, maps or drawings should be clean, clear and concise, neatly drawn and presented, and have all of the elements suggested in the checklist.

Site photographs provide an excellent way to document the selection of Manning roughness coefficients and bridge and culvert geometry without requiring the internal or external reviewer to go onsite. Refer to Figure 5-2 in these guidelines for example photographs. For advice on photography in support of modeling, refer to the IDNR permit manual which is available on the Department's website.

Another characteristic of a good model is documentation within the model. HEC-RAS provides a place in almost every screen where comments can be made. Use this feature to fully explain modeling assumptions and to clarify modeling data.