

Transition Plan – HEC-FDA 1.4.3 to HEC-FDA 2.0. The plan to transition from the currently certified version of the Hydrologic Engineering Center’s Flood Damage Reduction Analysis (HEC-FDA) software to the new version, HEC-FDA 2.0, was informed by coordination among the FRM-PCX, HQUSACE, and HEC.

HEC-FDA 2.0 represents the contemporary method for estimating economic risk from flooding for Flood Risk Management projects. It is a significant improvement from the previous version, HEC-FDA 1.4.3, providing a more accurate representation of economic risk from flooding than previous versions of HEC-FDA. Estimates from HEC-FDA 2.0 will be used for decision-making if results from other versions of HEC-FDA are also available.

- 1. New studies.** All new feasibility studies that include use of HEC-FDA will use HEC-FDA 2.0. This includes, but is not limited to, Continuing Authorities Program (CAP) studies and post-authorization studies resulting in General Reevaluation Reports (GRRs).
- 2. Existing studies.** All studies that can shift to HEC-FDA 2.0 without impact to overall schedule and budget should do so immediately upon certification of HEC-FDA 2.0. If a shift to HEC-FDA 2.0 would impact project delivery based on the current project schedule or budget, the rules defined below will inform when HEC-FDA 2.0 must be used. However, if the HEC-FDA 1.4.3 results are not driving study decision-making, coordinate with the FRM-PCX and Office of Water Project Review Economics Team to determine the need to transition to HEC-FDA 2.0.
 - a. Existing studies pre-TSP.** Studies that have not held a Tentatively Selected Plan (TSP) milestone at the date of HEC-FDA 2.0 certification will transition to HEC-FDA 2.0. Any potential impacts to the study schedule or budget shall be promptly coordinated with the vertical team.
 - b. Existing studies post-TSP.** Studies that have held a TSP milestone, but not the Agency Decision Milestone (ADM), and used HEC-FDA 1.4.3 will conduct a sensitivity analysis to inform whether transitioning to HEC-FDA 2.0 is required. The sensitivity analysis shall be coordinated with the FRM-PCX and the Office of Water Project Review Economics Team. It will focus on the area(s) driving flood risk in the study and compare the risk estimates between HEC-FDA 1.4.3 and HEC-FDA 2.0. If any of the below conditions are met, transitioning to HEC-FDA 2.0 is required. Any potential impacts to the project schedule or budget shall be promptly coordinated with the vertical team.
 - i.** If the findings of the sensitivity analysis demonstrate a greater than 5% change in risk estimates between HEC-FDA 1.4.3 and HEC-FDA 2.0.

- ii. If study modeling is being updated post-TSP. This includes changes to the hydrologic inputs, updates to hydrologic inputs, changes to system response functions, and/or changes to the economic inputs.
- iii. If a full technical review of the HEC-FDA 1.4.3 model and modeling inputs during concurrent review of the draft identifies an error that could impact plan selection or the viability of a federal investment. Those inputs include but are not limited to: flow/stage frequency curves, water-surface profiles, transform functions, stage-damage functions, occupancy data (including values) and associated uncertainty distributions and system response functions where levees are included.

c. **Existing studies post-ADM.** Existing studies post-ADM will continue to use results from HEC-FDA 1.4.3. If a final ATR has not yet been completed post-ADM, ATR will ensure accuracy of model inputs mentioned in Section 2.b.ii and 2.b.iii above. Additionally, if any of the below conditions are met, transitioning to HEC-FDA 2.0 is required. Any potential impacts to the project schedule or budget shall be promptly coordinated with the vertical team.

- i. If a final ATR takes place post-ADM (as described in Section 2.c above) and the review identifies an error in the HEC-FDA 1.4.3 model or modeling inputs that could impact plan selection or the viability of a federal investment. See Section 2.b.ii and 2.b.iii above.
- ii. If the modeling or recommended plan changes, the study team needs to transition to HEC-FDA 2.0.

3. **Economic updates for previously authorized projects.** Economic updates for previously authorized projects must use the latest certified version of HEC-FDA (version 2.0) per guidance (Director of Civil Works' Policy Memorandum CWPM 12-001, Subject: Methodology for Updating Benefit-to-Cost Ratios (BCR) for Budget Development, 8 March 2012). See considerations below.

- a. If it is cost prohibitive to transition to HEC-FDA 2.0 from HEC-FDA 1.4.3, the District will need to seek approval from the Chief of Office of Water Project Review, HQUSACE to continue using results from HEC-FDA 1.4.3.
- b. Versions older than HEC-FDA 1.4.3 must be updated to HEC-FDA 2.0 unless approval from the Chief of Office of Water Project Review, HQUSACE is given to update to HEC-FDA 1.4.3.