

Hydraulic Analysis Model



BACKGROUND

MCD requires hydraulic modelling to be performed for proposed construction projects or modifications to existing structures that may impact the flood protection system. HEC-RAS is the preferred modelling format. Models are to be certified by a Professional Engineer and submitted along with a hydraulics report.

MODEL REQUIREMENTS

Discharge/ Frequency Events

- MCD Official Plan Flood (OPF) to be modeled (MCD will provide discharge values)
- OPF analysis is separate from any FEMA requirements or local floodplain regulations

Water Surface Impacts

- New or modified structures must demonstrate **“no rise” in the OPF water surface profile**
- Channel encroachments for floodplain development projects must demonstrate **“no rise” in the OPF water surface profile**
- Temporary cofferdams and causeways may increase OPF water surface profile, but may not result in overtopping of levees or floodwalls

Models Submitted

- Electronic files of hydraulic analysis using HEC-RAS, or other approved hydraulic model
- Existing Conditions model reflecting pre-construction channel geometry and structure conditions
- Proposed Conditions model reflecting the final design or modifications to the structure and channel geometry
- Temporary Conditions model reflecting major appurtenances, such as cofferdams and causeways, used during a portion of construction
- Final as-built model after construction is completed

Model Calibration

- Model to be calibrated to nearest USGS gage
- If not practical, model to be calibrated to 1959 Survey High Water Marks provided by MCD
- Other surveyed high water marks may be allowable

Other Federal, State and Local Requirements

- Other federal, state and local floodplain development requirements may need to be satisfied
- MCD does not certify work for other jurisdictional or regulatory requirements

QUESTIONS

Roxanne Farrier, Property Administrator
937-223-1278 x3230
rfarrier@mcdwater.org