

Help Sheet – Basic HEC-HMS Input, Run Setup, Run Model, and View Output Sequence

1. Open HEC-HMS/Set Program Defaults/Create New Project

- Select HEC-HMS from desktop or browse programs
- Program Defaults: Tools – Program Settings – Defaults. Set unit system (U.S. Customary), Subbasin loss (SCS Curve Number), Subbasin transform (SCS Unit Hydrograph), subbasin precipitation (Specified Hyetograph)
- File – New. Create a new project. Set Default Unit System to U.S. Customary

2. Create Basin Model Manager

- Components – Basin Model Manager – New. Enter name and Create the basin.
- Left Watershed Explorer Panel – Expand Basin Models – Select created basin – Desktop Pane should appear

3. Create Paired Data

- For Example, when modeling a culvert an Elevation-Area or Elevation-Discharge Paired Data will be required
- Components – Paired Data Manager – Select desired Data Type – New. Enter name and Create the data.
- Left Watershed Explorer Panel – Expand Paired Data – Expand type of paired data – select created paired data
- Component Editor – Select Table Tab – enter data

4. Create Watershed Elements

- Add Background Images if desired – View – Map Layers – Add. Select desired shapefile or image.
- Using icons on top toolbar  (subbasin, reach, reservoir, junction, diversion, source, sink) select an element, then click in the Desktop Panel to place watershed element.
- Subbasin may be used for drainage areas, reservoir may be used for culverts, junction may be used for the outlet

5. Enter Parameters for each Watershed Element and make Hydrologic Connections for Each Element

- Watershed Explorer Panel – Expand Basin (Step 2) – Select Watershed Element (Step 4)
- Component Editor Panel – Enter required information for each Watershed Element. **Note: Lag Time = 0.6*Tc**

6. Create Time Series Data

- Components – Time-Series Data Manager. Data Type – Precipitation Gages - New. Enter name and Create Gage.
- Watershed Explorer Panel – Expand Time-Series Data – Expand Precipitation Gages – Select Created Gage.
- Component Editor Panel – Time-Series Gage tab – Unit: Cumulative Inches – Time Interval: 6 minutes
- Component Editor Panel – Time Window tab –needs to be 24 hours
- Component Editor Panel – Table tab – Copy & Paste [MSE 3 Ratio column](#) from excel into Precipitation Column – Ctrl+v for paste in HEC-HMS

7. Create Meteorological Models

- Components – Meteorological Model Manager – New. Enter name and Create Model.
- Watershed Explorer Panel – Expand Metrologic Model – Select created Model.
- Component Editor Panel – Precipitation – Specified Hyetograph – Gage – select created gage (Step 6)

8. Create Control Specification

- Components – Control Specifications Manager – New. Enter name and Create Control.
- Watershed Explorer Panel – Expand Control Specifications – Selected created Control.
- Component Editor Panel – Enter Date & Time information (Must be the same as in Step 6). Select Time Interval (typically 6 minutes)

9. Create Run File & Run Model

- Compute – Create Compute – Simulation Run. Follow steps to Create Simulation Run.
- Watershed Explorer Panel – Compute Tab – Expand Simulation Runs – Select created Simulation Run
- Component Editor Panel – Ratio Tab – Ratio Method: Precipitation – Apply to Subbasins: Yes – Ratio: Rainfall Amount
- With Simulation Run selected - Select 

10. View Output

- Watershed Explorer Panel – Results Tab – Expand Simulation Runs – Select desired Run
- Select Global Summary or output by individual element.

