

ReFH Unit Hydrograph

Input Variables

Most of these values are imported from the FEH CD-ROM software package via the on-screen 'Import' Button.

However on small catchments it is particularly important to check them against a site survey to verify the data where possible.

Area

This is the catchment drainage area.

Areal Reduction Factor

Reduces the rainfall as it calculated as point rainfall based on time and area. The value may be obtained from FEH Figure 4.3.4.

Season

The season that the rainfall will use to generate the associated profile (this follows the Design Storm settings if present, otherwise this value is used). This affects the calculation of the seasonal correction factor (SCF) see below as well as how the loss model is calculated. If continuous analysis is used this season will only be used for calculation of the initial base flow and should reflect the season at the start of the first rainfall file.

Recommended seasons are:

Winter - November to April

Summer - May to October

SAAR

The standard average annual rainfall (1961-1990). This can be determined by clicking on the 'Map' button and selecting the location.

BFIHOST

Baseflow index derived from Hydrology of Soil Types (HOST) soils data.

DPSBAR

The mean catchment slope. Mean of all inter-nodal slopes.

DPLBAR

Mean drainage path length. This is the mean of the distances between each node (on a 50m grid) and the catchment outlet.

PROPWET

The proportion of time when the soil moisture deficit ≤ 6 mm during 1961-1990 as defined by Met Office Rainfall and Evaporation Calculation System (MORECS).

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Workflow - What's next...?



Inflows connect to either **Junctions** or **Stormwater controls** via **Inlets**. Specify an **Outlet** on these objects then choose to connect to another Junction or Stormwater Control.

The extent of urban and suburban cover. Either select the 1990 or 2000 values if available or simply enter a user-defined value. Please note that the year 2000 values are only available if using the FEH CD-ROM Version 2. If values for 1990 or 2000 are zero, please check the values as they may not be available from the FEH data.

LAG

This value can be used in lieu of DPSBAR, DPLBAR, Urban and PROPWET to calculate the time to peak T_p . It is defined as the time delay between the centroid of a hyetograph and the resulting peak flow at the catchment outfall.

Note: This may be appropriate if measured lag values are available or if the engineer estimates that the calculated time to peak is in error. This may be the case, for example, if the ditches have been improved or piped.

Baseflow

This value replaces the calculated baseflow value to allow a user defined baseflow. The baseflow calculation can be switched off by entering a value of "0", it should be left blank in order for the software to calculate it. Note that if a user defined baseflow is used it is a constant baseflow and does not vary with the rainfall.