

Unit Hydrograph

Civil Engineering

Rainfall in, flow hydrograph out.

The runoff hydrograph produced by one unit of effective rainfall falling over a fixed duration.

AREA UNDER THE GRAPH

One unit of runoff

TIME TO PEAK

Falls as land is paved

- A property of the catchment, not of the storm
- Linear: double the rainfall, double the peak
- Successive rainfall blocks are superposed
- Named by duration: a one hour unit graph
- Urbanisation raises the peak and shortens it
- Baseflow is separated out before fitting

LOOK FOR IT

Two hours of rain are routed by adding two lagged copies of the one hour graph.

Educational reference. Linearity is an approximation that weakens at extremes; flood estimation follows national guidance.