

Method	Comments
NRCS Curve Number	Overland and channelized flow time for rural areas (2 acres - 2000 acres). Included in HYDRO.
Kinematic Wave	Overland flow time. Requires iterative solution and is included in HYDRO and HEC 1.
Manning's Kinematic Solution	Overland flow time. The maximum flow length is 300 ft. Included in TR-55.
Federal Aviation	Overland flow time; developed for airports.
NRCS Upland Method	Flow velocity for overland and shallow concentrated flow. TR-55 includes for shallow, concentrated flow. Grassy waterway method in HYDRO.
Triangular Gutter Flow	Flow velocity in gutter. Included in HYDRO.
Manning's Equation	Flow velocity for non-pressure flow in pipes or open channels.
Continuity Equation	Flow velocity for pressure flow in pipes.
Reservoir and Lake	Wave velocity across water; does not account for travel time of hydrograph through storage.
Kerby	Overland flow time. Watersheds < 10 acres, slopes < 1% and N values ≤ 0.8 were used to calibrate model.
Kirpich	Good estimate of overall flow time for steep wooded watersheds. Can be applied to flatter basins by dividing result by 0.6.

METHODS FOR CALCULATING TIME OF CONCENTRATION

Figure 29-7A