



Estimating basin lagtime and hydrograph-timing indexes used to characterize stormflows for runoff-quality analysis: USGS Scientific Investigations Report 2012-5110

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## Estimating Basin Lagtime and Hydrograph-Timing Indexes Used to Characterize Stormflows for Runoff-Quality Analysis: Usgs Scientific Investigations Report 2012-5110 (Paperback)

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Print on Demand \*\*\*\*\*. A nationwide study to better define triangular-hydrograph statistics for use with runoff-quality and flood-flow studies was done by the U.S. Geological Survey (USGS) in cooperation with the Federal Highway Administration. Although the triangular hydrograph is a simple linear approximation, the cumulative distribution of stormflow with a triangular hydrograph is a curvilinear S-curve that closely approximates the cumulative distribution of stormflows from measured data. The temporal distribution of flow within a runoff event can be estimated using the basin lagtime, (which is the time from the centroid of rainfall excess to the centroid of the corresponding runoff hydrograph) and the hydrograph recession ratio (which is the ratio of the duration of the falling limb to the rising limb of the hydrograph). This report documents results of the study, methods used to estimate the variables, and electronic files that facilitate calculation of variables. Ten viable multiple-linear regression equations were developed to estimate basin lagtimes from readily determined drainage basin properties using data published in 37 stormflow studies. Regression equations using the basin lag factor (BLF, which is a variable calculated...

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