APPENDIX A
GLOSSARY

annual flood - The maximum instantaneous peak discharge in each year of record.

annual flood series - A sequence of annual floods.

attenuate - To reduce the flood peak discharge and lengthen the time base of the flood wave.

base flow - Discharge in a river prior to the onset of direct runoff from a rainfall event.

bed form - The irregularities of the channel bed that are larger than the largest bed material particles.

bed load - Fluvial material moving on or near the bed of the watercourse.

bed material - Fluvial material that exists in appreciable quantities in the bed of the watercourse.

broken record - A systematic record which is divided into separate continuous segments because of discontinuation of recording for a year or longer.

concentration point - A physical location in a watershed where all surface runoff must pass to exit the watershed.

direct runoff - The same as rainfall excess.

distribution - Function describing the frequency with which random events of various magnitudes occur.

drainage area - The total area contributing to surface runoff at a point of interest (flow concentration point).

duration - Used either as the length of time for rainfall, such as a 24-hour storm, or as the length of time for rainfall excess, such as used to specify the duration of rainfall excess for a unit hydrograph.

effective impervious area - The portion of a land area, expressed in percent of total land area, which will drain directly to the outlet of the drainage area without flowing over pervious area. This is often called directly connected impervious area.

exceedance probability - Probability that a flood discharge will exceed a specified magnitude in a given time period, usually one year unless otherwise indicated.

field capacity - Amount of soil moisture or water content held in soil after excess water has drained away and the rate of downward movement has materially decreased, which usually takes place within 2–3 days after a rain or irrigation in pervious soils of uniform structure and texture.

frequency - The measure of the probability of occurrence or exceedance of a flood magnitude in a number of observations.

historic data - Record of major floods which occurred either before or after the period of systematic data collection.

homogeneity - Records from the same population.

hydraulic conductivity – A description of the ease with which a water can move through pore spaces or fractures.

hydrograph - A continuous plot of instantaneous discharge versus time.

hydrologic soil group - A classification system developed by the NRCS to place soils into one of four groups based on runoff potential.

impervious area - The portion of a land area, expressed in percent of total land area, which has a negligible infiltration rate. Impervious area can be natural, such as rock outcrop (natural impervious area) and the surface of permanent water bodies; or man-made, such as paved areas, roofs, and so forth.

incomplete record - A stream flow record in which some peak flows are missing because they were too low or high to measure, or the gage was out of operation for a short period because of flooding, instrument malfunction, or similar reason.

infiltration - The rate of movement, in inches per hour, of rainfall from the land surface into and through the surface soil.

initial abstraction - The accumulative loss, due to all mechanisms, of all rainfall from the start of rainfall to the point in time when surface runoff begins. This is equivalent to the initial loss in the “Initial and Constant Loss” method.

outlier - Outliers (extreme events) are data points which depart from the trend of the rest of data.

percolation - The rate of movement, in inches per hour, of water through the underlying soil or geologic strata subsequent to infiltration.

physiography - The physical geography of a watershed.

population - The entire (usually infinite) number of data from which a sample is taken or collected. The total number of past, present, and future floods at a location on a river is the population of floods for that location even if the floods are not measured or recorded. The frequency distribution of the population defines the underlying probability model from which the sample of annual floods arises.

rainfall excess - The equivalent uniform depth of runoff, in inches, that drains from the land surface. Rainfall excess equals rainfall minus rainfall losses.

rainfall losses - The sum of rainfall that is lost to surface runoff due to interception, depression storage, evaporation, infiltration, and other mechanisms. Rainfall loss is expressed as an equivalent uniform depth, in inches.

reach - A relatively short length of channel or watercourse.

record length - The number of years of record.

return period - The average number of years between occurrences of a hydrological event of a given or greater magnitude. In an annual flood series, the average number of years in which a flood of a given size is exceeded as an annual maximum.

routing - A procedure by which an inflow hydrograph is modified by the effects of flow resistance and storage to simulate an outflow hydrograph from the system.

soil - The layer of inorganic particulate matter covering the Earth's surface. It can and does contain organic matter and often supports vegetation. For the purpose of estimating rainfall losses, only the upper horizon (generally about the top 6 inches of soil) will be considered. Underlying soil horizons or other strata will generally not affect rainfall losses in Arizona for storms of 100-year magnitude or less.

soil texture - The classification of soil into groups according to percentage of sand, silt, and clay, as used by the U.S. Department of Agriculture.

sand - Soil composed of particles in the 0.05 mm to 2.0 mm size range.

silt - Soil composed of particles in the 0.002 mm to 0.05 mm size range.

clay - Soil composed of particles smaller than 0.002 mm.

soil map unit – A collection of areas defined and named the same in terms of their components (e.g., series) or miscellaneous areas or both. The basic unit of a soil map.

stationarity - The condition in which statistical properties of the annual flood series do not change with time.

storage coefficient - A Clark unit hydrograph parameter that relates the effects of direct runoff storage on the watershed to unit hydrograph shape.

subarea - A portion of a drainage area or subbasin that is delineated according to a physical feature such as soil texture or land use.

subbasin - A portion of a drainage area that is determined according to the internal surface drainage pattern. A drainage area can often be divided into subbasins for modeling purposes.

surface retention loss - The depth of rainfall loss, in inches, due to all factors other than infiltration.

systematic record - Data from a stream gaging station for which flood discharges are systematically observed and recorded.

time of concentration - The travel time, during the corresponding period of most intense rainfall excess, for a flood wave to travel from the hydraulically most distant point in the watershed to the point of interest (concentration point).

topography - The surface features of a watershed.

unit hydrograph - The hydrograph of one inch of direct runoff from a storm of a specified duration for a particular watershed.

vegetation cover - The percentage of land surface that is covered by vegetation. Vegetation cover is evaluated on plant basal area for grasses and forbs, and on canopy cover for trees and shrubs.

water year - The water accounting year- in the U.S., from 1 October through 30 September. The year specified is the calendar year for January of the period.

watercourse - An overland flow path that is defined by topography such as a river, stream, channel, ditch, wash, swale, and so forth.

watershed - The area within definable boundaries in which all direct runoff drains to a common outlet.

wetting front suction – Portion of the total head driving infiltration at the wetting front (interface between saturated soil above and drier soil beneath).

wilting point - The point at which, through heat or drought, a plant loses turgidity and becomes limp and flaccid.