

Kansas Administrative Regulations

Kansas Department of Agriculture—Division of Water Resources

Article 45.—Design of Levees

5-45-9. Levees; design storm flow determination.

(a) In determining design storm flow magnitude, the applicant shall use an accepted engineering method.

(b) For drainage areas of less than 2 square miles the following methods are acceptable, where appropriate: (1) The rational formula for flow magnitude determination when used according to the following formula:

$$Q = CIA$$

where C = the runoff coefficient

I = intensity of rainfall in inches per hour and

A = drainage area in acres.

To determine the proper intensity of rainfall for use with the formula, first determine the appropriate total rainfall from "Technical Paper Number 40, Rainfall Frequency Atlas of the United States, *Department of Commerce*, May 1961," and the time of concentration from the Kirpich nomograph and then obtain the intensity from the standard rainfall intensity-duration curves;

(2) The SCS method for estimating direct runoff, United States department of agriculture, soil conservation service;

(3) "Technical Release 55, Hydrology for Urban Areas, *United States Department of Agriculture, Soil Conservation Service*."

(c) For drainage areas two square miles or greater, the following methods of determining flow magnitude shall be acceptable, where appropriate: (1) the publication "Magnitude and Frequency of Floods in Kansas, Unregulated Streams, Technical Report 11, *Kansas Water Resources Board*, February 1975";

(2) "Technical Release 20, Computer Program for Project Formulation, Hydrology, *United States Department of Agriculture, Soil Conservation Service*"; or

(3) "HEC-1 Flood Hydrograph Package, *Corps of Engineers Hydrologic Engineering Center*."

(Authorized by and implementing K.S.A. 24-126; effective May 1, 1987.)

***** Authenticated Kansas Administrative Regulation *****