

FLOODS IN WOODSTOCK QUADRANGLE  
NORTHEASTERN ILLINOIS

This report presents hydrologic data that can be used to evaluate the economic development of flood plains in the Woodstock quadrangle, northeastern Illinois. With additional data, government officials and private citizens can make effective flood-planning regulations that will minimize the creation of new flood problems. The data presented in this report are based on a study of the Woodstock quadrangle, including waste disposal facilities, developing recreational areas, and managing surface water in relation to ground-water resources.

The areas inundated by floods along streams in the Woodstock 7½-minute quadrangle are delineated on a topographic map. The stream names and the location of the floods shown on the map are tabulated below.

Stream name	Date of flood
Slough Creek	March 1945
Apple Creek, Frankfortville	February 1966
Kishwaukee River, Woodstock	March and April 1967

The Woodstock quadrangle location is shown in figure 1.

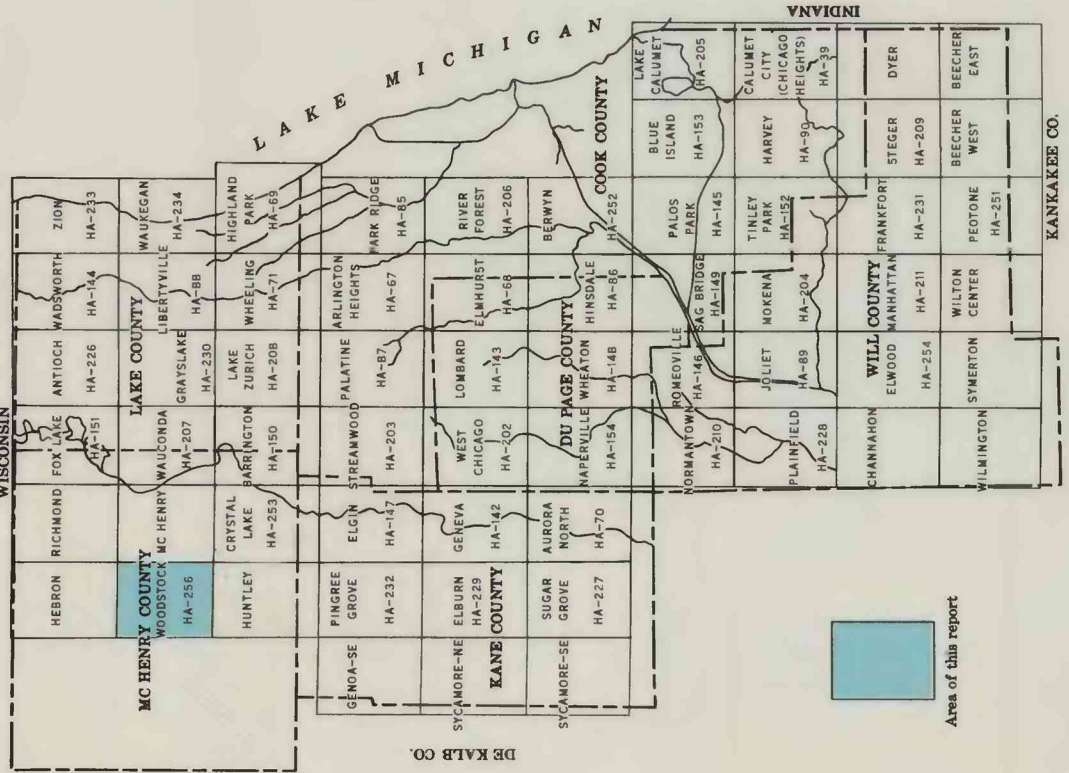


FIGURE 1.—Index map of northeastern Illinois showing location of quadrangle included in flood-damage mapping program.

Local residents reported that the flood of March 1945 was the most serious in the history of the Kishwaukee River report that only minor over-bank flooding has occurred during the last 15 years.

Greater floods than the floods whose boundaries are shown on the map are possible. The flood boundaries shown provide a record of historic fact that reflect channel conditions existing at the time of the flood. The boundaries, however, are not intended to represent permanent conditions, in waterway openings at highways and railroads, or changes in runoff characteristics of the streams caused by increased urbanization and other changes in land use.

The flood boundaries shown on the map could affect the flood height reached by a future flood of comparable magnitude. Protective works built after the floods shown may cause the frequency of flooding to be reduced, but they will not eliminate all future flooding. The inundation pattern of future floods may be affected by new highways and bridges, relocation and improvement of stream channels, and other changes in land use.

The general procedure used in defining the flood boundaries was to construct flood profiles from elevations of floodmarks identified in the quadrangle. The flood profiles were then used to construct the flood boundaries. The topographic map was derived from the profiles by interpolation between contours (lines of equal ground elevations) and by plotting overland areas flooded by the flood.

The portrayal of flood boundaries is consistent with the scale of the map (1 inch = 2,000 feet contour interval, 5 feet and 10 feet flood stage). The flood boundaries are shown for areas in the Woodstock quadrangle where surface water accumulates because of inadequate drainage into the streams. Frequency and depth of flooding in these areas are not shown. Some areas are flooded only briefly after periods of heavy rainfall or snowmelt, whereas others remain inundated continuously, depending largely on the ground. Flood boundaries are shown for all such areas that were detected in this investigation.

**Cooperation and acknowledgment.**—The preparation of this report is a part of an extensive flood-mapping program financed through cooperative efforts of the U.S. Geological Survey, the Illinois Metropolitan Area Planning Commission, and the U.S. Geological Survey. Under previous agreements, flood maps were prepared for forty-three 7½-minute quadrangles. Under the present agreement, the U.S. Geological Survey has expanded to include all the 7½-minute quadrangles shown in figure 1. The program includes parts of Cook and McHenry Counties, nearly all of Kane County, and portions of DeKalb, DuPage, and Will Counties. The six counties cooperate in the program financially through separate agreements with the Planning Commission. Financial support is provided by the U.S. Geological Survey, the Illinois Metropolitan Area Planning Commission, and the U.S. Geological Survey.

The cooperative program is administered on behalf of the Planning Commission by the U.S. Geological Survey, under the direction of the District Chief, and is coordinated by Arthur J. Zeisel, Acting Planning Officer.

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Liam D. Mitchell, district chief, and under the

Immediate supervision of Allen W. Noehren, engineer-in-charge of the project, the McHenry County Highway Department for furnishing information of flood heights at bridges and culverts in the area.

The height of a flood at a gaging station usually is stated in terms of gage height or stage, which is the elevation of the water surface above a selected datum plane. Elevations shown in this report are in feet above mean sea level. The datum plane used for the Woodstock quadrangle can be converted to elevations above mean sea level by adding the gage height to the appropriate datum of gage listed in the following table.

Over-stage gage	Station number	Datum of gage (feet below mean sea level)	Difference between datum and mean sea level, in feet
Kishwaukee River	5-4379	914.66	1.10
Slough Creek near Woodstock	5-4373	914.66	5.46
Apple Creek near Woodstock	5-4378	880.72	2.68
Kishwaukee River (Dobbs)	5-4381	943.65	4.87
Slough Creek near Woodstock	5-4382	875.54	3.02
Apple Creek near Woodstock	5-4384	875.60	4.19
Kishwaukee River (State Highway 47)	5-4385	859.46	15.5
Slough Creek near Hartsville	5-4405	899.40	7.25