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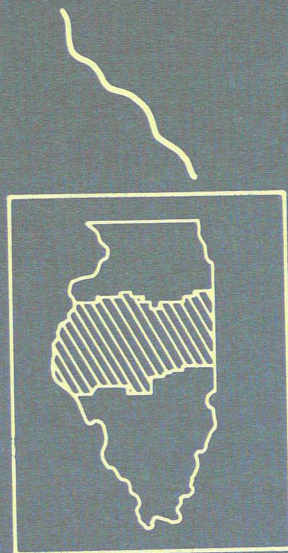
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Potential Surface Water Reservoirs of North-Central Illinois

by JULIUS H. DAWES and MICHAEL L. TERSTRIEP



ILLINOIS STATE WATER SURVEY

URBANA

1966

REPORT OF INVESTIGATION 56

*Potential Surface Water Reservoirs
of North-Central Illinois*

by JULIUS H. DAWES and MICHAEL L. TERSTRIEP



STATE OF ILLINOIS
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FOREWORD

In many parts of Illinois, reservoir storage of water is an important means of increasing usable water supplies to enable community growth and development. Because of this significance for water resources of the future, the Illinois State Water Survey initiated a reconnaissance investigation to identify potential sites within the state where surface storage of water is physically feasible.

This report provides information on potential and existing reservoirs in 33 counties of north-central Illinois. Publications containing similar data for 17 southern and 29 south-central counties have been published as Reports of Investigation 31 and 54, respectively. Data are being tabulated in preparation for a report on 23 northern counties. The division of the state was based primarily on drainage systems.

These publications are intended to bring about greater understanding of surface water storage potential. It is hoped that the information will be of value in rural, urban, and regional planning for development of industry, agriculture, and recreation.

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Potential Surface Water Reservoirs of North-Central Illinois

by Julius H. Dawes and Michael L. Terstriep

SUMMARY

The north-central portion of Illinois comprises 33 counties having a total area of 20,907 square miles. The physical potential for development of surface water reservoirs is favorable in much of this area because the rainfall and resulting runoff is adequate and the topography is suitable for reservoir construction.

The counties included in the north-central section are Adams, Brown, Cass, Champaign, Christian, DeWitt, Ford, Fulton, Hancock, Henderson, Iroquois, Kankakee, Knox, Livingston, Logan, Macon, Marshall, Mason, McDonough, McLean, Menard, Morgan, Peoria, Piatt, Pike, Sangamon, Schuyler, Scott, Stark, Tazewell, Vermilion, Warren, and Woodford.

Within these counties 340 potential surface water reservoir sites have been identified. Potential sites are generally abundant in the north-central section of the state. However, sites suitable for reservoir development are scarce in Champaign, Ford, Kankakee, Livingston, Logan, Mason, Piatt, and Stark Counties. Some of these counties have a limited number of sites because of the lack of topographic relief. A few counties have geologic conditions that indicate leakage and stability problems.

Ground-water contribution to streamflow causes continuous flow in many of the streams on which potential reservoir sites have been located. The normal runoff out of the north-central area from streams such as the Kankakee, Vermilion, Mackinaw, Sangamon, Spoon, La Moine, and The Sny Rivers, and tributaries to the Mississippi and Illinois Rivers is estimated at 8.64 billion gallons per day (bgd).

Rainfall in the area averages 35.5 inches per year, or 35.35 bgd. The normal runoff is estimated at 24.4 percent of the normal rainfall.

The north-central area inventory consists of 340 sites which have 175,340 surface area acres, 3,041,000 acre-feet of storage, a combined drainage area of 6,523 square miles, and 4,616 miles of shoreline. Hydrologic data indicate that from these selected sites 786 million gallons of water would be available daily during a drought that could be expected once in 25 years.

INTRODUCTION

It has become increasingly apparent that water deficiencies can and do exist in the 33 north-central Illinois counties. This region is bordered by the Mississippi River on the west and by the Indiana state line on the east. Internally the area is drained by the Vermilion River, The Sny, and the Illinois River with its tributaries which include the Kankakee, Mackinaw, Sangamon, Spoon, and La Moine Rivers. There are several developments of surface water impoundments, exemplified by the Jacksonville, Springfield, Decatur, Vermilion, Chautauqua, Bloomington, Argyle, Canton, and Spring Lakes.

There are 340 potential reservoir sites capable of development within the 33 counties. This section of the state supports a population of 1,570,294 or 15.6 percent of the state population, and extends over 20,907 square miles which represents 37.4 percent of the area of Illinois.

Objectives and Scope

This report is primarily an inventory of potential reservoir sites, plus a partial list of presently developed

sites of the 33 north-central counties. The sites are potential reservoir areas insofar as they have 1) the physical characteristics necessary to impound water, 2) runoff from the watershed in sufficient quantities to provide storage for beneficial use plus anticipated losses, and 3) relative freedom from man-made or natural obstructions. Although a large potential for reservoir storage is present in the north-central counties, the distribution over the area is poor.

A complete evaluation of the potential reservoir sites for water resource development involves far more than physical availability of sites such as considered here. It is important to consider water developments in relation to other natural resources, social and political environment, and the economy of a region. Cost of development must be balanced by benefits. These are all critical factors that must be dealt with before a comprehensive report can be made. The surface water impoundment potential is dependent upon rainfall, topography, run-

off, geology, and man's occupancy as determined from an analysis of physiographic and hydrographic data.

This inventory of potential reservoir sites was selected from a map study of U. S. Geological Survey quadrangles. Each site was then visited by an engineer and a geologist for a feasibility study. These studies were reconnaissance in nature, and only surficial site examinations using manual equipment could be conducted. Thus, these studies do not take the place of the individual, and far more detailed, engineering survey in establishing the feasibility of any particular project. Detailed economic studies were not made, but studies of relative land cost, favorable topography, and runoff indicate the general feasibility of the selected sites. Cost considerations are described by the terms high, moderately high, normal, moderately low, or low.

From these studies it can be said with assurance that the physical potential exists for water resource development through the storage of surface water. An attempt has been made to indicate the maximum yield based on the largest reservoir available at each of these sites. Since the basic site data were obtained from topographic maps, they may require modification in light of additional field investigations.

This report has two principal parts. Part 1 discusses the pertinent hydrologic elements including geology and climate. Part 2 includes the data on potential and existing reservoirs for each of the 33 counties.

Acknowledgments

This study has been completed by the authors under the guidance of H. F. Smith, Head of the Hydrology Section, and William C. Ackermann, Chief, Illinois State Water Survey. A number of Water Survey personnel have aided in the preparation of this report. John B. Stall, Engineer, provided the streamflow analysis and furnished counsel during the development of a computer program used in watershed yield analysis. W. J. Roberts, Engineer, made available previous reservoir studies and evaporation data. Wayne Neibel and Roger Corinth provided sedimentation data and assisted in the preparation of that section. The section on Climatological Elements was prepared by Stanley A. Changnon, Jr., Climatologist. William Motherway, Jr., Assistant Draftsman, and John W. Brother, Jr., Drafting Supervisor, prepared the illustrations.

Geologic investigations for sites west of the Illinois River were conducted by John R. Bergstrom. Paul B. Du Montelle examined site areas east of the Illinois River. All geologic investigations were made under the direction of W. Calhoun Smith, Geologist, Illinois State Geological Survey.

The University of Illinois Digital Computer Laboratory's computer facilities, principally the IBM 7094 system, were used extensively in carrying out data processing for this report.

Part 1. Hydrology

Study Criteria and Procedures

The greatest potential surface water resource in the 33 north-central counties lies in utilization of runoff of relatively small streams by creation of impoundments. Additional surface resources are the large rivers that border the north-central section and the major tributaries such as the Mackinaw, Sangamon, and Spoon Rivers. Each of the 33 counties has been studied with respect to availability of potential reservoir sites as determined under the following criteria: 1) the surface area should be larger than 50 acres, 2) maximum depth at dam not less than 20 feet, 3) average mean depth not less than 7 feet, 4) time to fill not greater than or less than the lines depicted on the graph in figure 1 showing relationship of capacity to drainage area, 5) a maximum allowable storage loss of 2 percent per year by reason of sediment, 6) maximum dam length of 0.5 mile, and 7) a maximum dam height of 90 feet.

The procedure for conducting the inventory was as follows: 1) an initial inventory of potential reservoir sites was made from a topographic map study; 2) data obtained from the topographic maps were analyzed for conformance to the study criteria; 3) a field examination of each reservoir area was made by an engineer for determining its physical feasibility; and 4) a field examination of each dam site and reservoir area was made by a geologist for determining its geologic feasibility as to stability of dam construction, retention of water, and availability of construction material.

U. S. Geological Survey quadrangle sheets were used for the map study. A small percentage of the area is covered by 7.5 minute, 1:24,000 scale maps, and these were used where available; however, most of the work was done on the earlier 15 minute, 1:62,500 scale maps.

Personal judgment had to be relied upon throughout the map study. Required factors of consideration included length of dam, area of the lake, maximum depth, excessive shallow water, capacity of the lake and its relation to the watershed size, inundation of man-made obstructions, and possible future uses. Relative costs affecting feasibility were observed, although the economics involved in a complete evaluation was beyond the scope of this study. Whenever records were available, sites selected in previous studies and sites for which local interest had been shown were included in the inventory. In many cases literally hundreds of possible dam sites were available in a relatively small area; in such cases, and as a matter of general practice, an attempt was made to select the best development for each

particular watershed without the use of an excessively long or high dam. The limits of dam size are arbitrary and were imposed as the study proceeded since they seemed to meet the requirements of the topography.

The quadrangle maps were studied one at a time and then combined by counties for an additional search, and for tabulating the inventory. In general, the larger waterways were searched first and then the small tributaries. Smaller sites included in the inventory are generally located near centers of population as possible municipal water supply reservoirs. Since overlapping sites were not considered, one large site shown in the study might have been replaced by several smaller sites on tributaries. Obviously, because of the number of factors involved, no two individuals making a similar study would select identical reservoirs, but it is believed that the individual sites and the number of sites selected per county are representative of the area.

Data measured on the topographic maps were reservoir surface area, maximum depth, watershed area, length of shoreline, length of dam, and abutment slopes at the dam site. The contour interval of 10 or 20 feet used on the quadrangle maps was a severe limitation, especially on the selection of optimum spillway elevation. The capacity of a reservoir was computed as one-third times the maximum depth times the surface area. This formula gave results that were generally within 10 percent of the average-end-area method which involves planimetry of the area inside each contour line below lake level.

The watershed-capacity relation is one of the more important factors used for the selection of potential sites. Figure 1 indicates the acceptable relations between watershed and reservoir capacity. The sedimentation curves were developed from actual sedimentation surveys on existing lakes in this area of the state. The upper limit is based on watershed/capacity ratios of existing reservoir sites that have demonstrated the proper balance between storage and runoff to insure satisfactory performance. The "years to fill" values were computed on the basis of 10 inches of runoff per year. There is a definite tendency for the potential sites to lie along the upper rather than the lower limit. In cases where one watershed is included within another, the sites were analyzed independently.

A program was prepared to compute net reservoir yield and volume of earthwork required. The method of determining reservoir yield is described elsewhere. Volume of earth was computed using a dam height of maximum depth plus 10 feet of freeboard; an upstream slope of 3 to 1; a downstream slope of 2.5 to 1; and a

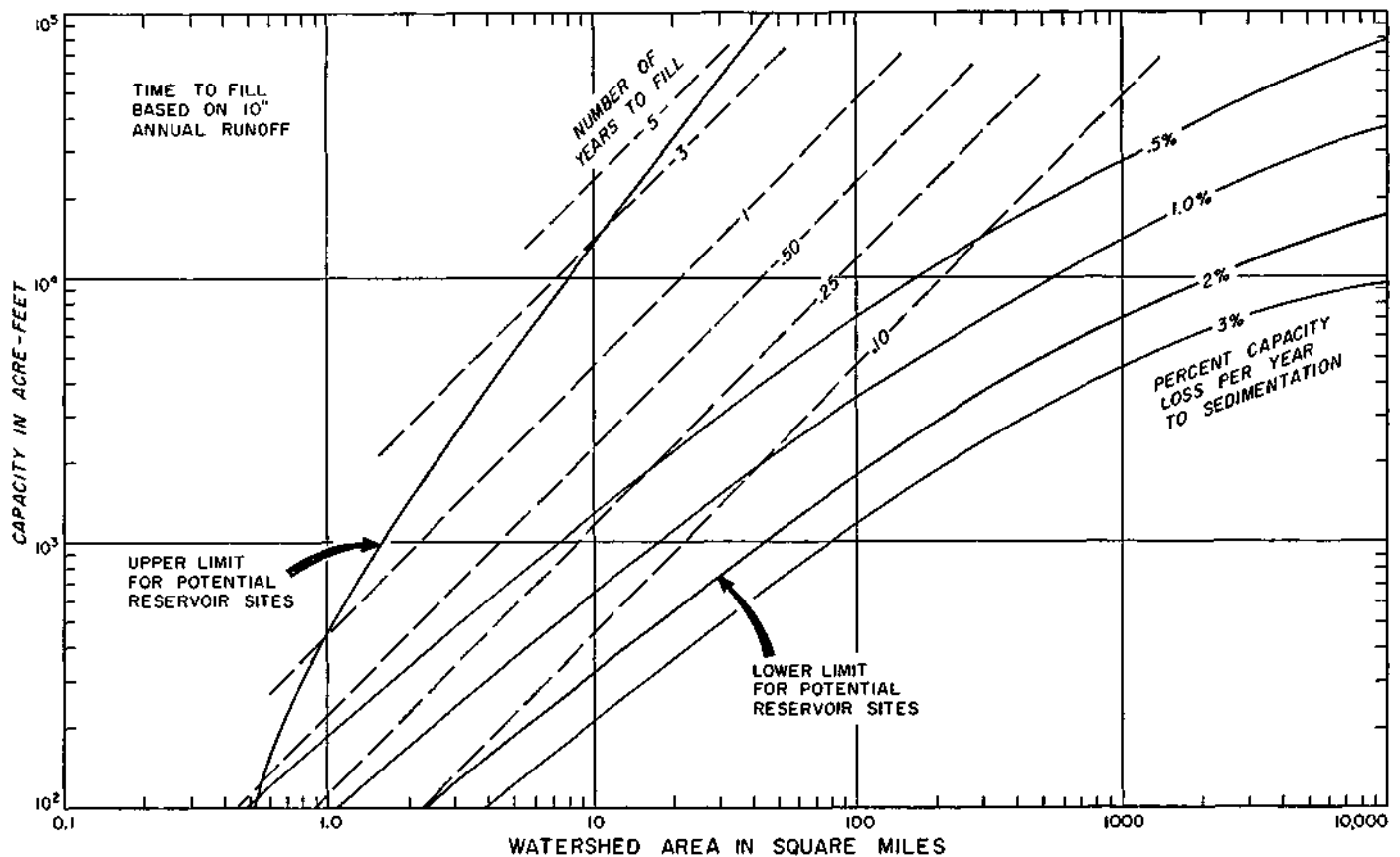


Figure 1. Capacity-watershed area criteria extracted from sedimentation curves

top width of 10 feet or twice the square root of dam height plus 3 feet, whichever is greater. The dam length was scaled at spillway elevation, and the abutment slopes were measured on the quadrangle sheets. In addition to the above computations, a 5-foot berm was added on both sides of the dam for each 30 feet of vertical height.

Field evaluation of each site by an engineer was primarily aimed at updating the maps for such features as homes, roads, or other man-made obstructions that might have been developed in the reservoir area. Since many of the existing maps are 30 to 40 years old, such a visit was imperative. The field evaluation also offered an opportunity to make a rough estimate of land use and project costs.

The field evaluations by a geologist, although surficial in nature, were extremely valuable in identifying those sites that have obvious geologic problems. These evaluations also made it possible to state with near certainty that a high percentage of the sites selected are geologically feasible. However, this evaluation in no way takes the place of a complete boring and testing program that should be undertaken early in the investigation stage of every reservoir development. The thorough program of borings and material testing may reveal unobserved problems and may be expected to provide information that can be used to resolve the geologic problems in some cases.

Climatological Elements

The climatic elements most closely related to water resources are precipitation, soil and air temperatures, and evapotranspiration. Precipitation, which is the major source of surface water, is the most important of these elements. For this reason, much of this discussion concerns precipitation conditions in north-central Illinois.

The continental type of climate present in north-central Illinois is characterized by warm to hot summers (June-August) and cool to cold winters (December-February). The strong latitudinal controls on the weather of this area often cause a north-to-south gradation noted in the areal distribution of most of the region's climatic elements. However, certain west-to-east gradients occur in seasonal precipitation patterns.¹ In general, more than 65 percent of the precipitation occurs in the warmer half-year (April-September), and the driest months during the winter.²⁻⁸ Air temperatures have ranged from as low as -30 F to as high as 115 F, and the average length of the growing season is 178 days. Portions of this area have a high frequency of all forms of severe weather including sleet and ice storms.

Precipitation

Annual and Seasonal. The distribution of the average annual precipitation in the north-central area is shown

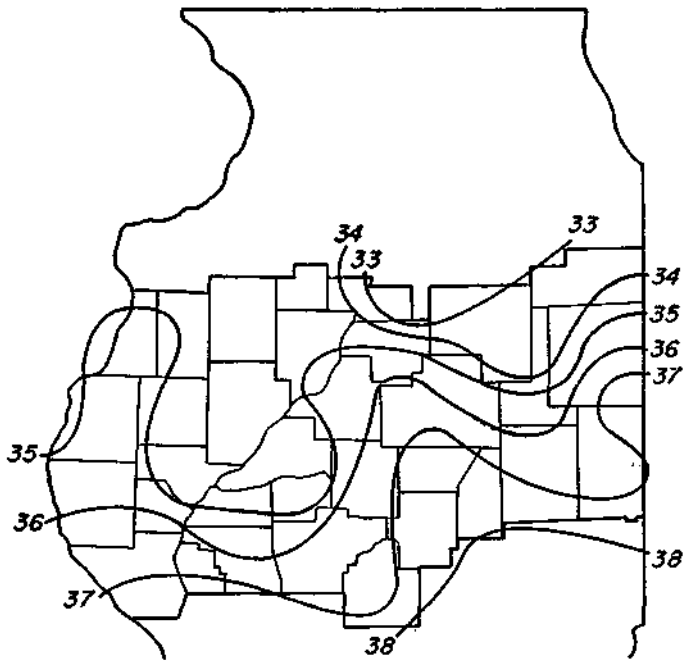


Figure 2. Average annual precipitation, in inches, 1900-1944 period

in figure 2. The maximum regional difference is 5 inches, ranging from 33 inches along the northern boundary to 38 inches in the southeast.⁹ The average precipitation for the north-central area is 35.5 inches, and thunderstorms account for between 37 percent (eastern portion) and 50 percent (western portion) of the total precipitation.¹ The wettest years on record have produced as much as 47 inches of precipitation in the northern extremes and as much as 60 inches in the southern portions. Dry calendar years have resulted in annual totals of less than 21 inches in the eastern, northern, and southwestern portions of the area, and less than 25 inches in the southeastern portions.

The distribution of precipitation in the colder half-year (October-March) largely accounts for the pattern of the annual precipitation (figure 3). The area average for this half-year is 14 inches, and normally from 13 to 20 percent of the cold season precipitation is derived from snowfall.

The average precipitation during the warmer half-year (April-September) is 22 inches, and the distribution in the area (figure 4) varies from 20 inches in the northeast to 23 inches in the west.

Chiang¹⁰ has shown that during the warm season, rain-producing cold fronts are more frequent in the western portion of north-central Illinois than in any other portion of the state. This area also experiences more summer thunderstorms than the remaining portion of north-central Illinois. Much of the warm season rainfall is derived from thunderstorms. More than 70 percent of the June, July, and August average rainfall amounts is derived from thunderstorms.¹

Monthly. Throughout the entire area, the month with

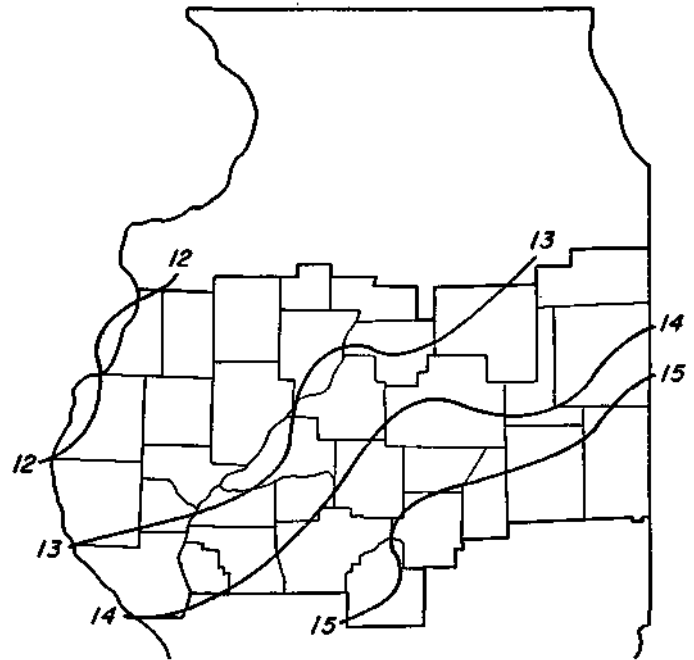


Figure 3. Average colder half-year precipitation, in inches, 1900-1944

the lowest average precipitation is February, and the second driest month normally is December. The month of maximum precipitation varies considerably. May has the highest average values in a large portion of the north-central area including all of the area east of the Illinois River except Champaign and Vermilion Counties where the June averages are the highest. June averages also are the highest in most of the area west of the Illinois River, but September values rank first in the lower portion of the Illinois Valley and in Adams and Pike Counties. The wettest three consecutive months in

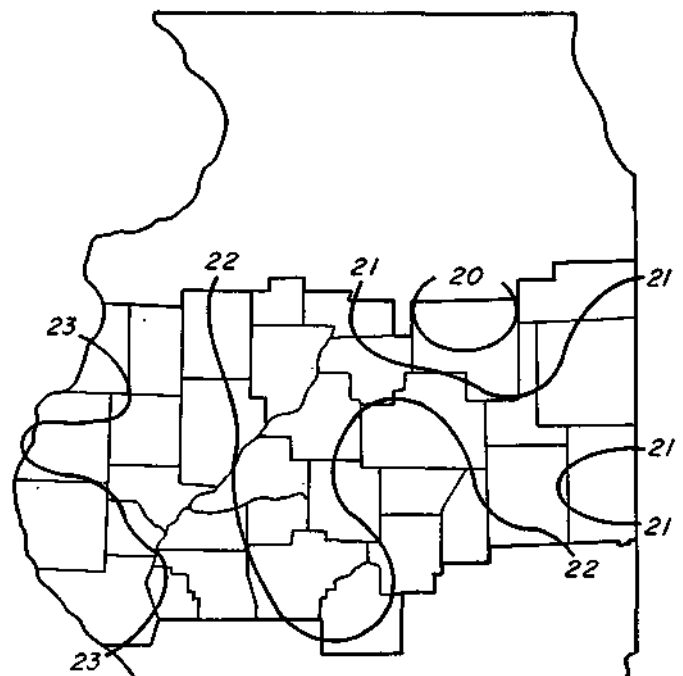


Figure 4. Average warmer half-year precipitation, in inches, 1900-1944

Table 1. Average Number of Days with Varying Weather Conditions per Month

Months	Precipitation \geq given amounts, inches			Minimum air temperatures \leq 32F
	0.1	0.5	1.0	
Jan	4	1	*	28
Feb	4	1	*	24
Mar	6	2-	1-	18
Apr	7	2	1-	6
May	7+	3-	1	*
Jun	7	3	1+	0
Jul	6-	2	1	0
Aug	5	2	1	0
Sept	6-	2+	1	0
Oct	5	2+	1-	4
Nov	5-	2-	*	13
Dec	4	1	*	26
Annual	66	23	8	119

* Indicates an occasional occurrence in a month

an average year are April, May, and June in the eastern portion, and May, June, and July in the western portion. The driest three consecutive months are normally December, January, and February.

Daily Frequencies. Table 1 shows the average number of days per month with varying intensities of rainfall. These averages are generally representative for any point in north-central Illinois, although slight regional variations do exist. Days with rain of 0.1 inch or more and days with 0.5 inch or more are most frequent in the spring and early summer and least frequent in the winter.

Short-Period Heavy Rainfall Frequencies. Figure 5 portrays the frequency of maximum precipitation amounts for varying durations at any point in the north-central area.^{11,12} The curves on figure 6 describe the areal extent of maximum 24-hour rainfall amounts.

Long-Term Dry Period Frequencies. One of the

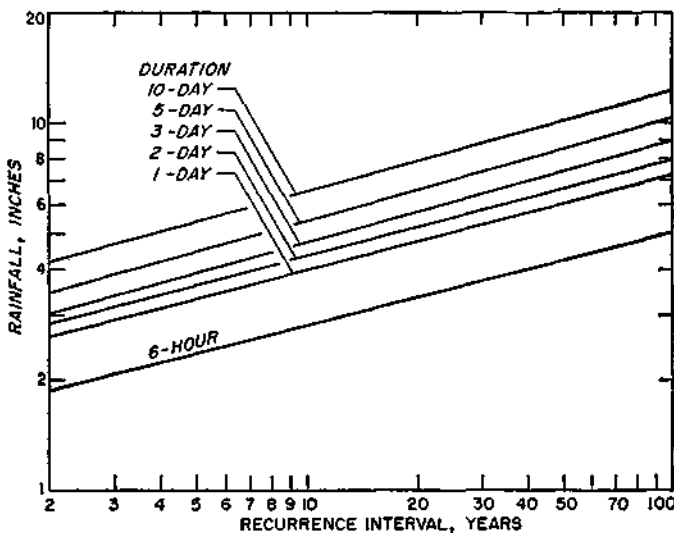


Figure 5. Maximum rainfall amounts equalled or exceeded for various recurrence intervals and durations at any point in north-central area

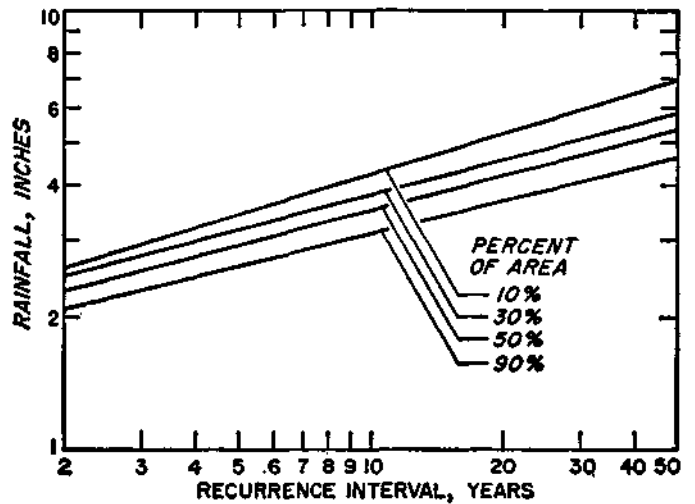


Figure 6. Areal frequency distribution of maximum 24-hour amounts equalled or exceeded at various recurrence intervals in the north-central area

notable features of the precipitation climate of north-central Illinois is the fact that the western portion has experienced great and frequent precipitation deficiencies. In contrast, 3- to 60-month rainfall deficiencies in the eastern portion are less frequent and less severe than in any other part of the state.¹³ The tendency toward drouth in the western portion is supported by the fact that a high percentage of its precipitation is derived from thunderstorms which tend to exhibit great temporal variability.

Frequency maps of low precipitation expected during 6- to 60-month periods are presented in figures 7 and 8. Because of the great difference in average seasonal precipitation (figures 3 and 4), two sets of 6-month minimum rainfall maps are shown for the 5-year and 25-year frequencies. More than 60 percent of all 6-month dry periods in the north-central area occur during at least 4 of the 6 months of the colder half-year.¹³ Figures 7 and 8 reveal that, in general, the lowest values in the area occur in the western and northeastern parts, and the highest values occur in the southeast.

Snowfall

The distribution of the average annual snowfall in the north-central area is shown on figure 9. Snowfall is extremely variable from year to year, with observed annual values at points in the area ranging from 3 to 68 inches. More than 70 percent of the annual snowfall occurs in December, January, and February. November, March, and April are normally the only other months when measurable snowfall occurs.

The north-central area has a higher frequency of days with freezing rain and sleet than other regions of the state.⁹ These forms of icing conditions occur on the average of 10 to 12 days in the central portion of the

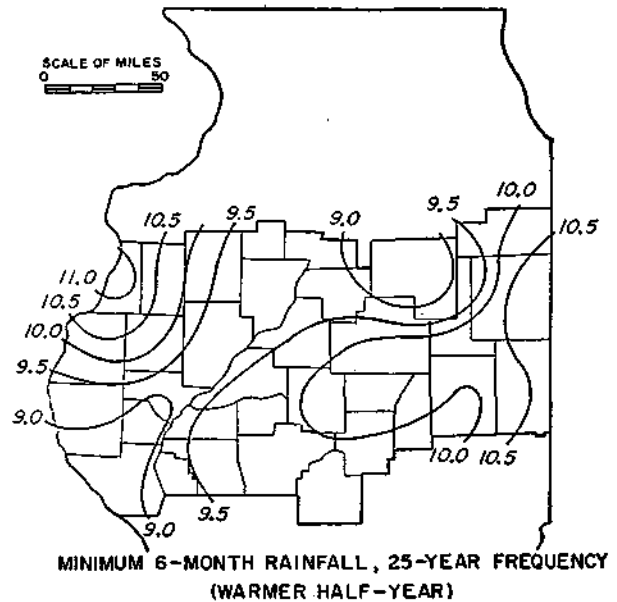
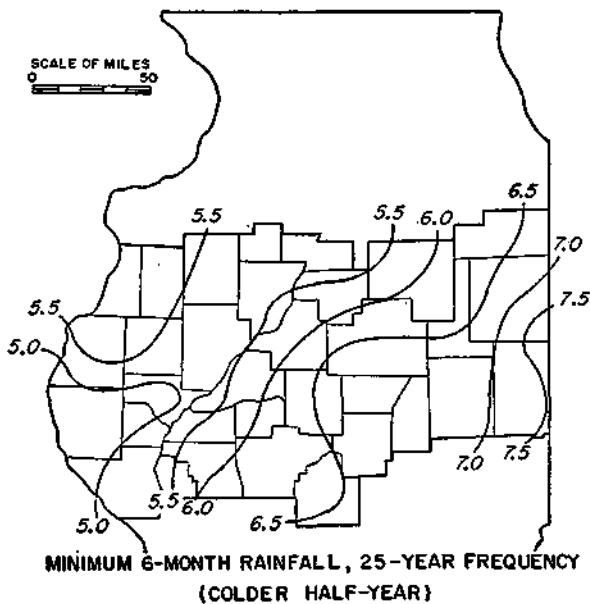
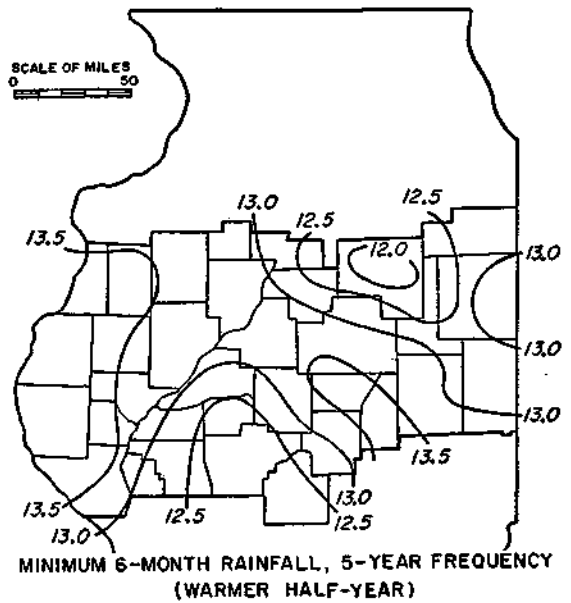
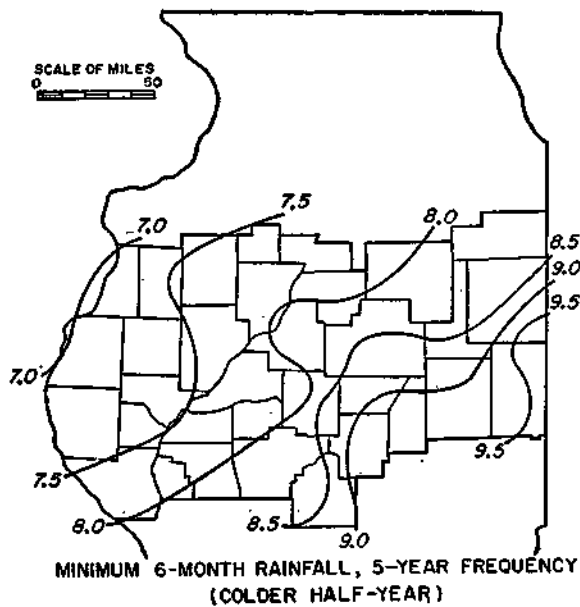


Figure 7. Minimum 6-month precipitation amounts, in inches, expected once every 5 and every 25 years, for colder and warmer half-years

area, and on 7 to 8 days in the western and eastern portions.

Gold Air and Soil Temperatures

Certain low air and soil temperatures affect water resources because the movement of water in lakes and ponds, across ground surfaces, and through the upper soil layers is affected by freezing conditions. Table 1 lists the average number of days per month with minimum temperatures of 32 F or lower.¹⁴⁻¹⁸

Air temperatures below 0 F are infrequent and normally occur on 7 days in the south and 10 to 11 days

in the north. Some years have no days with 0 or lower temperatures. The first freezing temperature of the fall season normally occurs during the October 15-20 period, and the last freezing temperature in the spring normally occurs during the April 15-30 period.⁹

In the central portions of the area the soil temperature at a depth of 4 inches normally goes below 32 F on about December 11 and rises above freezing on March 10, producing a 90-day period of frozen soil at this depth.¹⁸ Northern portions of the area normally have 100 days per year with below freezing soil temperatures at the 4-inch depth.

Soil temperatures at the 12-inch depth normally remain below the freezing level in the north-central area

from early January until the middle of March, producing 60- to 70-day periods of frozen soil at this depth.¹⁸

Geology

The many geologic considerations relating to the selection of feasible lake sites may be generalized into three categories: 1) composition of the bedrock, 2) composition of the unconsolidated material, and 3) thickness of unconsolidated material overlying the bedrock surface.

Except for a band along the Mississippi and Illinois Rivers, Kankakee County, and the northern half of Iroquois County, the bedrock surface in the north-central area consists of Pennsylvanian rocks.¹⁹ The Pennsyl-

vanian formations consist dominantly of weak shales which are easily eroded. Included in the formations are thin limestones, generally less than 25 feet thick, and locally developed sandstones which are more resistant to erosion. Along the Mississippi and Illinois Rivers an older formation of limestone and shale from the Mississippian age would be encountered. Bedrock in Kankakee County would be primarily dolomite of Silurian age. In the northern half of Iroquois County, limestone and shale from Mississippian, Devonian, and Silurian ages underlie the unconsolidated material.

The unconsolidated material that rests on the bedrock surface was deposited by great ice sheets known as glaciers. These ice sheets modified the bedrock surface by cutting down the peaks and ridges and filling the

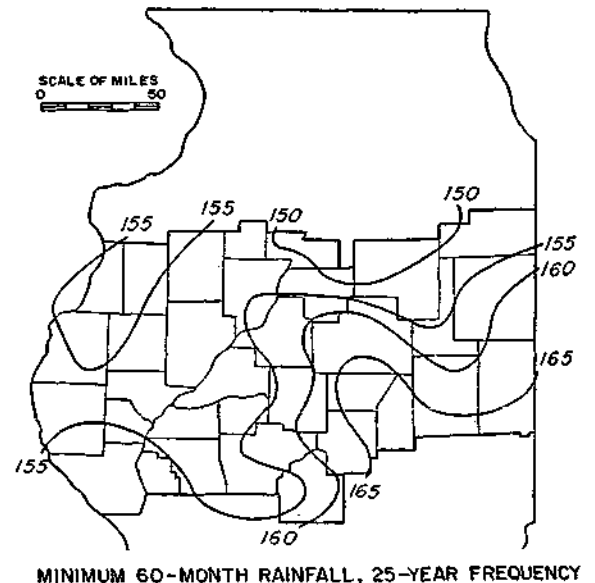
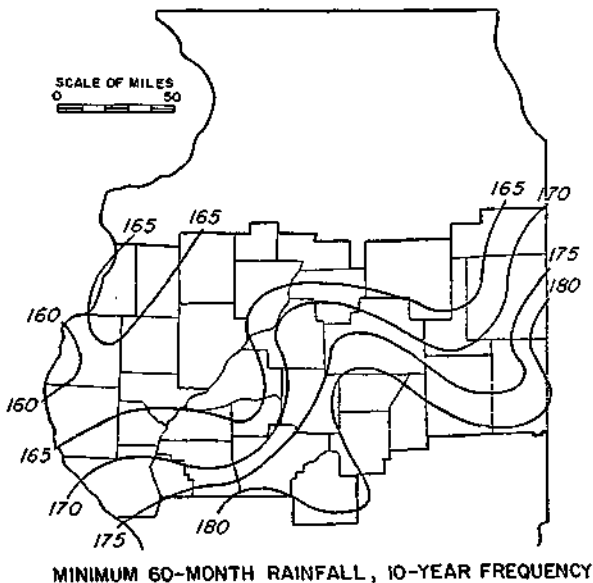
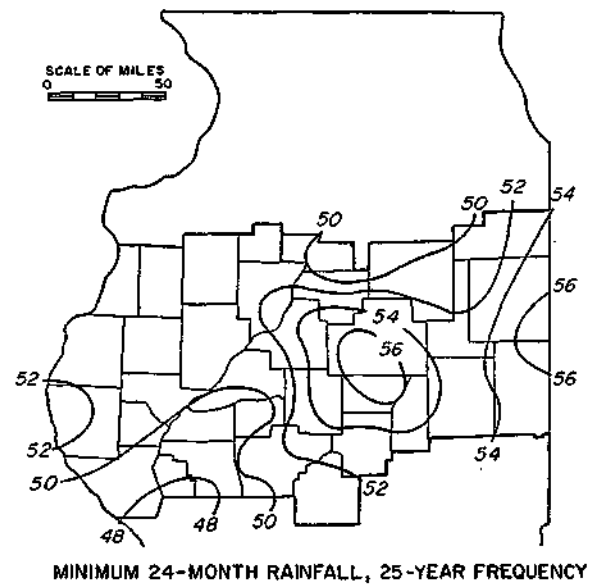
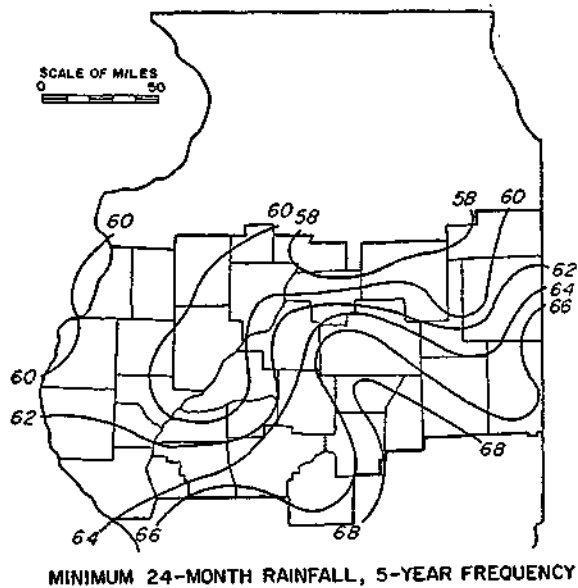


Figure 8. Minimum 24- and 60-month precipitation amounts, in inches, expected at varying recurrence intervals

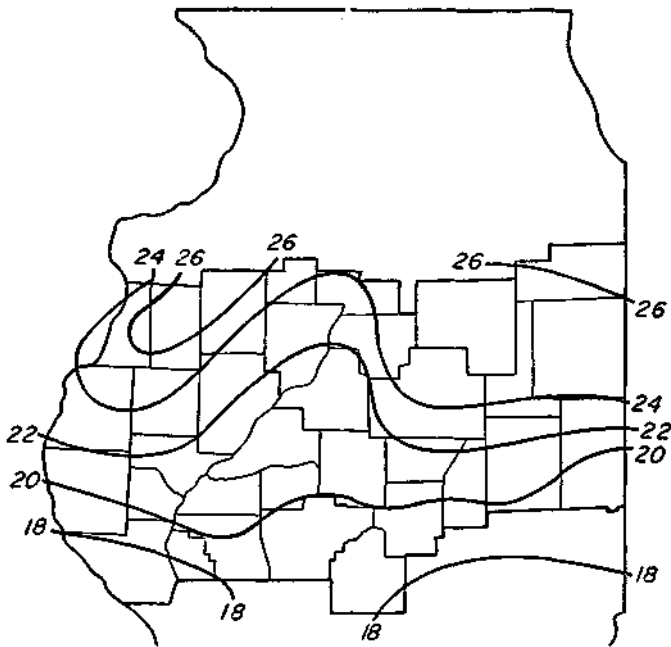


Figure 9. Average annual snowfall, in inches, 1920-1955 period

valleys with rock debris created in the process. The glacial debris, known as glacial drift, often contains water-bearing sands and gravels, and tight pebbly clay and silt known as till. The meltwaters carried sediments into the valleys, partially filling them with outwash which consists of gravel, sorted sand, clays, and silts. The river flats were subjected to wind erosion and thus great volumes of silt were blown onto the uplands to form what is known as loess.

Thickness of the drift east of the Illinois River varies from exposed bedrock of shale in valley walls near Danville to a depth of 400 feet or more near Paxton, Rantoul, Mahomet, Monticello, and Clinton. Long winding ridges, visible in the prairie areas, were created by large amounts of glacial debris dumped in front of the melting ice. Layers of firm rock such as shale, coal, limestone, and sandstone lie beneath the glacial drift. The very hard "basement" granites and similar rocks are found at a depth of 4000 to 8000 feet.

Low broad ridges, known as moraines, rise above the upland plains in northeastern McDonough, northwestern Fulton, and southeastern Knox Counties. The moraines are composed of mixed clay, silt, sand, pebbles, and boulders. The western front of the Wisconsin glacier is marked by a prominent moraine crossing the eastern portion of Peoria, Stark, and Henry Counties. Earlier glacial deposits from the Kansan and Illinoian glaciers are west of the moraine.

In general, the geology of north-central Illinois is well suited to water storage structures except for the Havana Lowlands and the Ridged Plain in Livingston and Ford Counties. The glacial till, a relatively impervious material, is generally available throughout the area and provides an excellent material for earth dams. The two

major geologic considerations are the availability of impervious borrow material and the lack of continuous sand and gravel deposits or porous bedrock exposures which might cause leakage from the reservoir.

More detailed geology has been presented in each county section of this report, and the observations of a geologist at the dam site are presented in each site description. Pending verification by adequate borings and material testing, the sites are classified geologically as feasible, probably feasible, probably not feasible, and not feasible.

Streamflow and Water Yields

The major rivers in the north-central 33-county area are: the Mississippi River, which provides the western border; the Vermilion River, which drains the southeastern area; the Illinois River crossing from the center of the northern boundary to the southwestern corner; and the tributaries to the Illinois River such as the Kankakee, Vermilion, Mackinaw, Spoon, Sangamon, and La Moine Rivers.

The U. S. Geological Survey in its cooperative programs with the Illinois State Water Survey and other state, local, and federal agencies, collects long-term streamflow records to determine the performance of rivers and streams. The measurement of river discharge is usually expressed in cubic feet per second (cfs). It is sometimes converted to units of rate per unit of area, such as cubic feet per second per square mile of drainage area, or to inches of runoff per year. Inches of runoff is a term representing the depth to which a drainage area would be covered if all of the flow during a period of time (usually a year) were distributed uniformly on its surface. The term is convenient to use when comparing inches of rainfall with runoff. Figure 10 shows the location of 36 stream gaging stations used in this report. Information on each station is presented in table 2. The detailed streamflow data were obtained from the Surface Water Records of Illinois, published by the U. S. Geological Survey. Data for the water years 1951 through 1959 were obtained from the U. S. Geological Survey Water Supply Papers.

The streamflow data have been used in two ways: first, for determining average streamflow conditions to estimate normal runoff at each of the potential sites; and second, for determining minimum yields for each site. Minimum yields were determined by a method developed during a study of low flows.²⁰

In another study, the gross watershed yield was determined for 164 Illinois stream gaging records for selected recurrence intervals using a statistical analysis of monthly low flows for duration intervals by 1 month for the first 12 months and then by 2-month intervals for periods up to 60 months.²¹ Mutually exclusive and

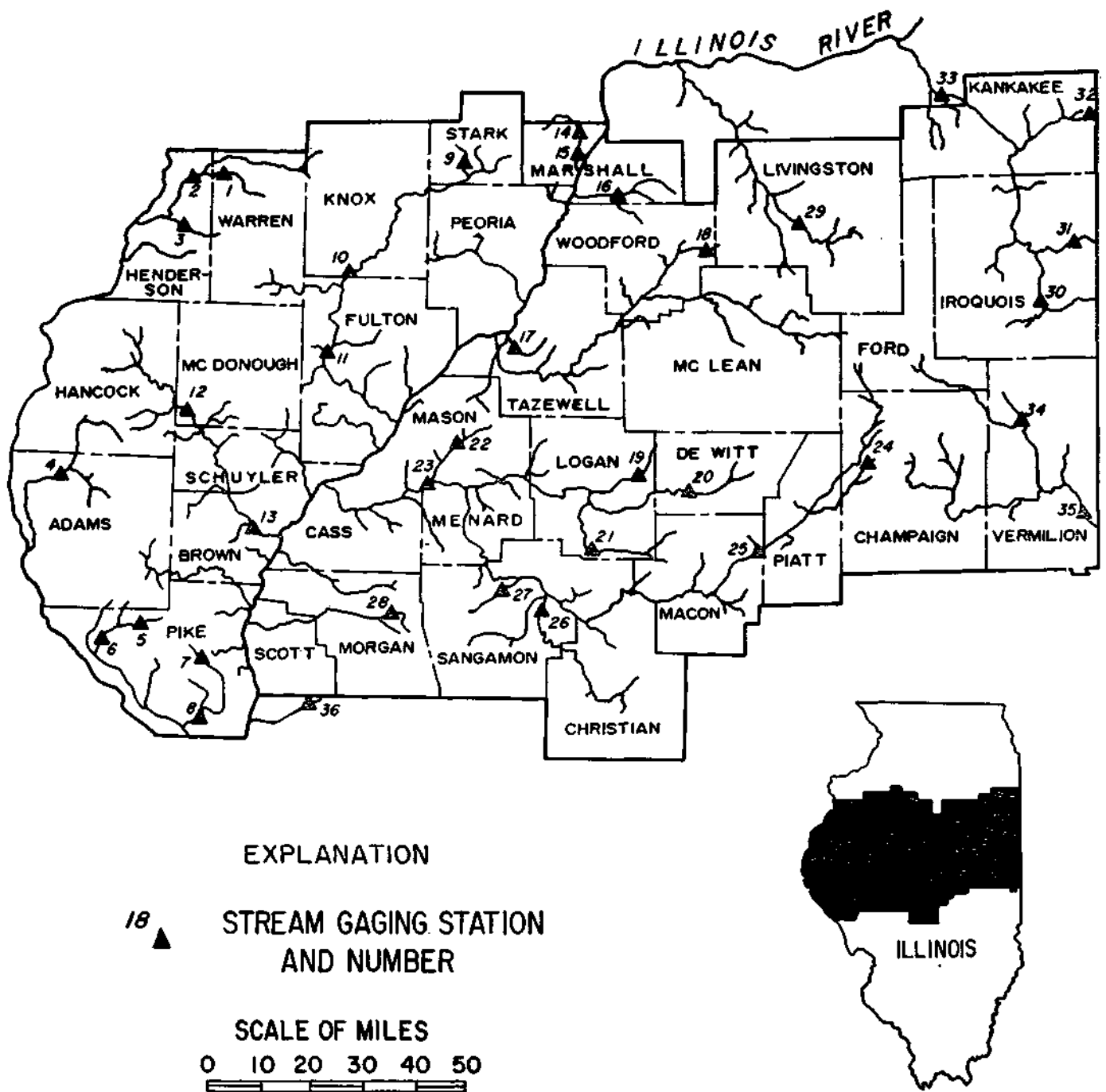


Figure 10. Stream gaging stations and numbers

independent low flow periods from these series were secured by avoiding overlapping of low flow periods. Plottings were made on log extreme value paper and a broken line was constructed through the plotted points.

For each particular reservoir site, the analyzed stream gage having watershed runoff characteristics most similar to those of the site was employed to determine gross yield. Gross yield was determined as the percent of mean flow a given reservoir could sustain for droughts of various recurrence intervals. Adjusting gross yield to net yield involves two factors: 1) losses due to seepage,

and 2) losses due to evaporation. In addition to these factors, loss of capacity to sedimentation will lower the yield.

Since reservoirs with severe seepage losses are generally discovered by geological investigations and eliminated or given special treatment, seepage losses were considered to be negligible and were not considered in this report.

Evaporative losses do not normally amount to a large percentage of the gross yields; however, for shallow reservoirs evaporation losses can be severe. A method

Table 2. Summary of Discharge Records at Stream Gaging Stations

Map no.	Station and number	Location	Location remarks	Drainage area (sq mi)	Records available	Discharge (cfs)		
						Average	Maximum	Minimum
1	Cedar Creek at Little York (5-4685)	Between secs 20 and 21, T12N, R3W	Downstream side of bridge on Ill. 135 N of Little York	128.0	Oct 1940 to Sep 1963	84.1	8,260	1.0
2	Henderson Creek near Oquawka (5-4690)	NE ¼ SW ¼ sec 28, T12N, R4W	Left bank downstream of bridge on Ill. 94	428.0	Oct 1934 to Sep 1963	255.0	16,500	1.7
3	South Henderson Creek at Biggsville (5-4695)	Between secs 16 and 17, T10N, R4W	Downstream side of bridge on Ill. 94 N of Biggsville	81.4	Oct 1939 to Sep 1963	47.0	6,700	0.0
4	Bear Creek near Marcelline (5-4955)	Between secs 20 and 21, T2N, R8W	Right bank downstream highway bridge, 2.25 mi NE of Marcelline	348.0	Mar 1944 to Sep 1963	174.0	21,200	0.0
5	Hadley Creek near Barry (5-5100)	SW ¼ SW ¼ sec 14, T4S, R6W	Left bank 300 ft downstream from bridge on U. S. 36	40.6	Oct 1955 to Sep 1963	24.1	8,000	0.0
6	Hadley Creek at Kinderhook (5-5105)	SE ¼ NE ¼ sec 25, T4S, R7W	Right bank upstream bridge on Ill. 96, 0.8 mi SE of Kinderhook	72.7	Oct 1939 to Sep 1963	48.4	15,000	0.0
7	Bay Creek at Pittsfield (5-5125)	NE ¼ SW ¼ sec 18, T5S, R3W	Right bank downstream bridge on abandoned highway, 0.1 mi downstream Ill. 107	39.6	Oct 1939 to Sep 1963	23.1	10,000	0.0
8	Bay Creek at Nebo (5-5130)	NW ¼ sec 19, T7S, R3W	Left bank downstream bridge 0.25 mi W of Nebo	162.0	Oct 1939 to Sep 1963	69.3	23,500	0.0
9	Indian Creek near Wyoming (5-5688)	SE ¼ SE ¼ sec 17, T12N, R6E	Left bank upstream county highway bridge, 4.5 mi SW of Wyoming	62.9	Oct 1959 to Sep 1963		1,490	0.2
10	Spoon River at London Mills (5-5695)	NW ¼ sec 3, T8N, R2E	Left bank downstream highway bridge in London Mills	1070.0	Oct 1942 to Sep 1963	620.0	35,300	3.6
11	Spoon River at Seville (5-5700)	SW ¼ sec 24, T6N, R1E	Downstream side of highway bridge in Seville	1600.0	Jul 1914 to Sep 1963	968.0	37,300	3.8
12	La Moine River at Colmar (5-5845)	SE ¼ SW ¼ sec 18, T4N, R4W	Right bank upstream side of bridge on Ill. 61	655.0	Oct 1944 to Sep 1963	400.0	20,300	0.0
13	La Moine River at Ripley (5-5850)	NE ¼ sec 33, T1N, R2W	Right bank upstream of bridge on U. S. 24, 0.25 mi E of Ripley	1310.0	Mar 1921 to Sep 1963	743.0	18,600	4.9
14	Crow Creek (west) near Henry (5-5585)	SW ¼ SE ¼ sec 36, T14N, R9E	Right bank downstream of bridge No. 7, 3.6 mi NW of Henry	55.3	May 1949 to Sep 1963	32.9	2,680	0.0
15	Gimlet Creek at Sparland (5-5590)	SE ¼ NW ¼ sec 14, T12N, R9E	Left bank 120 ft upstream of bridge on Ill. 29	5.42	Oct 1945 to Sep 1947 Oct 1949 to Sep 1963	3.61	2,650	0.0
16	Crow Creek near Washburn (5-5595)	SW ¼ sec 23, T29N, R2W	Left bank downstream bridge 2.5 mi NW of Washburn	123.0	Oct 1944 to Sep 1963	58.2	5,750	0.0
17	Farm Creek at East Peoria (5-5620)	SW ¼ NW ¼ sec 33, T26N, R4W	Left bank 30 ft upstream from Main St. bridge in East Peoria	60.9	May 1943 to Sep 1963	36.7	22,000	0.0
18	East Branch Panther Creek at El Paso (5-5665)	Line between secs 32 and 33, T27N, R2E	Left bank downstream of highway bridge 0.9 mi N of El Paso	28.8	Oct 1949 to Sep 1963	16.9	5,300	0.0
19	Kickapoo Creek near Lincoln (5-5805)	NE ¼ NW ¼ sec 18, T20N, R2W	Left bank downstream of bridge, 3 mi N of Lincoln	306.0	Oct 1944 to Sep 1963	178.0	7,800	0.8
20	Salt Creek near Rowell (5-5785)	NE ¼ SE ¼ sec 11, T19N, R1E	Right bank downstream highway bridge 0.5 mi upstream from U. S. 54	334.0	Oct 1942 to Sep 1963	226.0	12,400	0.7
21	Lake Fork near Cornland (5-5795)	SW ¼ sec 1, T17N, R3W	Upstream side of bridge on U. S. 54	207.0	Jan 1948 to Sep 1963	120.0	4,900	1.3
22	Crane Creek near Easton (5-5825)	NE ¼ NW ¼ sec 26, T21N, R7W	Right bank downstream of highway bridge 1.25 mi NW of Easton	28.7	Oct 1949 to Sep 1963	13.8	500	0.4
23	Sangamon River near Oakford (5-5830)	NW ¼ SE ¼ sec 3, T19N, R8W	Right bank downstream of bridge on Ill. 97	5120.0	Oct 1939 to Sep 1963	2984.0	123,000	68.0
24	Sangamon River at Mahomet (5-5710)	NE ¼ SW ¼ sec 15, T20N, R7E	Right bank downstream of bridge on U. S. 150	356.0	Mar 1948 to Sep 1963	240.0	14,600	0.0
25	Sangamon River near Oakley (5-5725)	SE ¼ NE ¼ sec 24, T17N, R3E	Downstream side of bridge, 3 mi N of Oakley	750.0	Jul 1951 to Sep 1963 (fragmentary since Sep 1956)	331.0	15,300	0.2
26	South Fork Sangamon River near Rochester (5-5760)	NE ¼ SE ¼ sec 8, T15N, R4W	Left bank downstream of bridge on Ill. 29	809.0	Jul 1949 to Sep 1963	471.0	18,100	0.4
27	Spring Creek near Springfield (5-5775)	NW ¼ NE ¼ sec 30, T16N, R5W	Right bank downstream of bridge on Ill. 125	107.0	Dec 1948 to Sep 1963	55.4	6,750	0.0
28	North Fork Mauvaise Terre Creek near Jacksonville (5-5860)	SE ¼ NW ¼ sec 8, T15N, R9W	Left bank downstream of bridge 6 mi E of Jacksonville	30.0	Dec 1949 to Sep 1963	16.8	2,870	0.0
29	Vermilion River at Pontiac (5-5545)	SW ¼ sec 27, T28N, R5E	Downstream of Vermilion Street bridge in Pontiac	568.0	Oct 1942 to Sep 1963	354.0	13,600	0.0
30	Sugar Creek at Milford (5-5255)	N ¼ sec 16, T25N, R12W	Right bank downstream of highway bridge, 1.5 mi W of Milford	430.0	Jul 1948 to Sep 1963	335	22,900	2.8
31	Iroquois River at Iroquois (5-5250)	SE ¼ sec 15, T27N, R11W	Left bank upstream bridge on U. S. 52 at Iroquois	682.0	Oct 1944 to Sep 1963	514	10,400	8.2
32	Singleton Ditch at Illinois (5-5200)	SW ¼ NW ¼ sec 8, T31N, R15E	50 ft downstream of county highway bridge at Illinois	219.0	Oct 1944 to Sep 1963	165.0	2,040	11.0
33	Ferry Creek near Custer Park (5-5265)	SE ¼ sec 20, T32N, R10E	Right bank downstream of bridge on Ill. 113S	12.0	Jul 1949 to Sep 1963	8.16		0.02
34	Bluegrass Creek at Potomac (3-3365)	SE ¼ NE ¼ sec 34, T22N, R13W	Left bank downstream highway bridge, 1 mi N of Potomac	34.5	Oct 1949 to Sep 1963	28.8	4,380	0.0
35	Vermilion River near Danville (3-3390)	SE ¼ NW ¼ sec 22, T19N, R11W	On left bank, 2.5 mi SE of Danville	1279.0	Jun 1928 to Sep 1963	894.0	48,700	2.0
36	Hurricane Creek near Roodhouse (5-5865)	NE ¼ sec 15, T12N, R12W	Left bank 150 ft downstream from bridge on Ill. 106	2.33	Oct 1950 to Sep 1963	1.26	1,700	0.0

published by the State Water Survey^{21,22} was used to evaluate evaporative losses. Evaporation and precipitation data were analyzed in the same manner as the low flow data. After developing a series of mutually exclusive and nonoverlapping evaporation events and minimum precipitation events for periods of 1 to 60 months duration, net evaporation tables were developed by subtracting minimum precipitation from maximum evaporation for events of equal duration and recurrence interval. Tables for representative locations give net lake evaporation in inches for durations from 1 to 60 months and for recurrence intervals from 2 to 50 years. Spring-field evaporation data were used in this report.²¹

Immediately upon closure of the dam, a surface water impoundment begins the process of trapping incoming water-borne sediments. The importance of sediment as a factor in determining the useful life of a water-supply reservoir has been recognized since the early 1930s. Prior to that time, selection of a reservoir site was based upon economic and engineering considerations such as distance between reservoir site and city, dam foundation conditions, watershed hydrology, evaporation losses, and predicted population and industrial growth trends. A prudent look to the future, with particular reference to water-supply reservoirs, should also include a provision for sediment storage volume.

The movement and deposition of sediment particles from watershed to reservoir requires the understanding of three different but related regimes of sediment movement. The first is the actual displacement of the soil particles by the bombing effect of individual raindrops striking the soil surface. The next step is the transportation of eroded material, and the third phenomenon is that of sediment deposition.

No attempt was made to relate sedimentation losses with reductions in water yield since expected sediment losses were usually less than 1 percent per year for all selected potential sites. Figure 1 shows the sedimentation curves developed from 80 sedimentation surveys by the Illinois State Water Survey.

Since the yield analysis assumes a full reservoir at the beginning of the critical period and an empty one at the end of it, an effective evaporative surface area of 65 percent of the normal lake area was used in the computations. Another phase of the yield analysis assumes that the reservoir is drawn down from full storage capacity to one-half of its storage capacity. For this computation an effective evaporative surface of 80 percent of the normal lake area was used. Gross yields reduced by the evaporative losses, and computed for recurrence intervals of 5, 10, 25, and 40 years, are reported as net yields in million gallons per day (mgd). Yield data, presented in the tables of potential reservoir sites in each county, are given for both full reservoir capacity and one-half reservoir capacity.

A knowledge of stream discharge is important to the

hydraulic engineer in solving problems of water supply. For this purpose he may use the flow-duration curve which illustrates graphically the percentage of total period of record when discharge falls within selected rates. Procedure for developing a curve for a particular river is described by Mitchell,²³ who demonstrates how to construct curves that will compare one basin having a long and representative period of record with an adjacent basin having only a short-term record. Mitchell has

Table 3. Data on Public Surface Water Supplies

Municipality*	Population 1960	Date installed	Source**	Pumpage (1,000 gpd)
Adams				
Clayton	774	1943	(1) Walnut Creek	40
Quincy	44,693	1873	Mississippi River	6,000
Brown				
Mc. Sterling	2,262	1880	(1) Trib. Crooked Creek	150
Cass				
Virginia	1,669	1933	(1) Jobs Creek	80
Christian				
Bulpitt	307	1930	Kincaid	
Humphrey	593	1959	(1) Kincaid	
Jeisyville		1959	(1) Kincaid	
Kincaid	1,544	1914	(1) Trib. Sangamon River	370
Pana	6,432	1892	(1) Sugar Creek	500
Fulton				
Astoria	1,206	1897	(1) Otter Creek	72
Avon	996	1927	(1) Avondale Lake	71.5
Canton	13,588	1880	(1) Copperas Creek	1,000
Vermont	903	1898	(1) Br. Sugar Creek	45
Hancock				
Augusta	915	1943	(1) Crooked Creek	65
Carthage	3,325	1898	(1) S. Br. Long Creek	250
Dallas City	1,276	1907	Mississippi River	90
Hamilton	2,228	1912	Mississippi River	160
La Harpe	1,322	1894	Trib. Crooked Creek	90
Nauvoo	1,039	1907	Mississippi River	55
Plymouth	781	1945	(1) Augusta	26
Warsaw	1,938	1908	Mississippi River	140
Kankakee				
Bradley	8,082	1905	(C) Kankakee	300
Kankakee*	27,666	1886	(C) Kankakee River	6,500
Livingston				
Pontiac*	8,435	1892	Vermilion River	1,500
Macon				
Decatur	78,004	1870	(1) Sangamon River	10,000
Mt. Zion	925	1959	(1) Decatur	
McDonough				
Blandinsville	853	1941	(C) Little Creek	45
Macomb	12,135	1894	(C) La Moine River	700
			(1) Spring Creek	
McLean				
Bloomington	36,271	1875	(1) Money Creek	3,600
Towanda	586	1941	(1) Bloomington	22
Morgan				
Franklin	500	1942	(1) Waverly	30
Jacksonville	21,690	1871	(1) Mauvais Terre Creek	2,500
			(1) Sandy Creek	
South Jacksonville	2,340	1926	(1) Jacksonville	5
Waverly	1,375	1939	(1) Apple Creek	110
Sangamon				
Auburn	2,209	1935	(1) Springfield	83
Chatham	1,069	1935	(1) Springfield	33
Diverson	997	1935	(1) Springfield	30.7
Grandview	2,214	1941	(1) Springfield	200
Leland Grove	1,731	1922	(1) Springfield	
Loami	450	1958	Lick Creek	
Pawnee	1,517	1935	(1) Springfield	100
Riverton	1,536	1936	(1) Springfield	50
Rochester	742	1936	(1) Springfield	70
Southern View	1,485	1941	(1) Springfield	
Spaulding	178	1954	(1) Riverton	
Springfield	83,271	1868	(1) Sugar Creek	12,000
Thayer	649	1942	(1) Springfield	16
Vermilion				
Belgium	494	1949	(1) Westville	
Danville*	41,856	1883	(1) N. Fk. Vermilion River	7,000
Georgetown	3,544	1934	(C) Little Vermilion River	150
Tikon*	2,598	1909	(1) Danville	
Weatville	3,497	1932	(1) Danville	120
Woodford				
Eureka	2,538	1889	(1) Trib. Walnut Creek	135

* All supplies are municipally owned except those starred which are privately owned.
** (1) impounding reservoir, (C) channel dams.

prepared duration curves for several streams in the north-central portion of Illinois including the Spoon River at Seville, La Moine River at Ripley, Sangamon River at Oakford and Mahomet, Vermilion River at Pontiac, and the Vermilion River near Danville.

Water resource development requires both basic data and data analysis that permit an evaluation of the adequacy of the water supply. The techniques employed should allow the planner to select an acceptable risk governing the adequacy of the water supply. The impounding reservoir stores water when runoff is above normal making water available when runoff is below normal. In developing the inventory of potential reservoir sites, the amount of reservoir storage capacity was dictated by availability of runoff and the physical characteristics of the reservoir site.

Municipal Surface Water Supplies

In the north-central region 346 municipalities depend on wells, and 53 communities use surface water as a source of water supply. Four of the 53 surface water supplies are privately owned. For these 53 surface water supplies, water is obtained from 5 channel dams, directly from 8 rivers or creeks, and from 41 impounding reservoirs which include two impoundments for one municipality. Surface water supplies are used by 21.3 percent of the region's population, which was 1,570,294 according to the 1960 census for the 33 counties. The pumpage of surface water supplies amounts to 334.4 mgd or approximately 213 gpd per person. Table 3 shows the distribution of municipal surface water supplies in north-central Illinois.

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Part 2. Potential Reservoir Sites

There are numerous potential sites in the 33-county area of north-central Illinois that might be developed for water-supply reservoirs and/or other purposes. The hydrology of 340 potential sites has been studied, and data for each reservoir are presented in tabular form. Plate 1 (*in back-cover pocket*) shows the surface water resources of north-central Illinois.

In certain areas many similar potential sites exist; therefore, only data for typical examples have been included. The extent to which each would affect existing structures has been considered. The data presented are provisional and subject to revision when more detailed topographic, geologic, and engineering surveys are available.

On the following pages, the potential reservoir sites in the 33 north-central counties are discussed in detail, by counties in alphabetical order. Site possibilities in each county were numbered during the map study, and since the nonfeasible sites were eliminated, the numbers of sites described in this report are not consecutive. A map for each county shows the locations of potential sites, identified by site number. Many of the existing reservoirs also are shown on the county maps, but it was not possible to show the small ones. Available hydrologic data for both potential and existing sites are given in tables that accompany the descriptions for each county. Where data are missing in the tables, it has not been possible to obtain accurate information.

ADAMS COUNTY

The bedrock surface in Adams County is of two distinct systems. The Pennsylvanian strata which occur in the northeastern quarter of the county are the more youthful and could consist of weak shales, limestone layers up to 25 feet thick, coal seams, and locally developed sandstones. Mississippian rocks, which normally underlie the Pennsylvanian system, form the bedrock surface throughout the remainder of the county. The most common Mississippian rock in this area is Burlington limestone which may be 70 to 100 feet thick.

The glacial period brought two glacial advances to Adams County. The Kansan was first, moving east and southeast and covering all except the southeast part of the county. A long period elapsed before the next glacier. During this time normal weather conditions allowed soils such as the black, 2-foot thick Yarmouth to develop. This soil is now found buried as deep as 100 feet. The Illinoian glacier came from the northeast and covered the entire county leaving a moraine that extends diagonally across the county from southeast to northwest. This moraine has been divided by stream action into five short ridges. Silt and fine sand were carried by the wind and deposited on the uplands. This wind-blown material, known as loess, was picked up from barren river flats kept free of vegetation by frequent glacial flooding from the Iowan glacier. The loess deposits vary in depth from 5 to 50 feet and constitute the material from which most of the present soils have been derived. The thickness of the glacial drift varies from a few feet to 165 feet with an average depth near 65 feet. The present topography is largely the result of erosion. The northeastern portion of Adams County has large areas of extremely flat, poorly drained land. The western and southern parts have extensive areas of hilly, untillable land mixed with undulating tillable land.

The county is divided by two distinct drainage basins. The Mississippi Basin drainage is west and southwest by Pigeon, Mill, and Bear Creeks. The Illinois Basin drainage is to the southeast by McKee Creek and to the northeast by tributaries of Crooked Creek.

Both the topography and the geology of Adams County appear to be suited to reservoir development, and sites are available throughout most of the county. The results of 19 feasibility studies follow.

Site 2. Construction of a dam across a tributary of Mud Creek about 3.5 miles northwest of Loraine and 5 miles southwest of Stillwell would create a small reservoir. The watershed is 2 miles long and 0.5 mile wide, and consists of rolling cultivated uplands. Lack of roads, residences, and agricultural developments should make land acquisition relatively inexpensive. The channel is about 30 feet wide and 5 feet deep. The floodplain is

about 250 feet wide. The alluvium consists of silt with some gravel and other rock fragments up to cobble size. The valley walls have gentle slopes composed of glacial drift overlain by gray loessial silt containing some scattered pebbles. The depth of relatively permeable material in the floodplain would have to be determined by future test boring. This site is considered possibly feasible geologically. This is the same as probably feasible except that the valley and valley bottoms are exceptionally wide, and therefore the alluvium may be thicker and may possess characteristics less desirable for dam construction. This site should produce a good small reservoir at a normal project cost.

Site 3. A large impoundment could be developed by construction of a dam across Thurman Creek about 2 miles northeast of Loraine, just below the confluence with Woodville Branch. The lake would be within 9 miles of Bowen, Golden, Camp Point, Mendon, and several smaller towns. Road improvements would require raising gravel roads slightly at six locations. A new road over the structure about 1 mile in length would probably be required to join existing north-south roads. Two residences would have to be acquired. The watershed is 6 by 4 miles, and consists of one-third gently rolling uplands and two-thirds gently sloping valleys. The dam site appears probably feasible geologically. The abutments and valley walls consist of glacial drift overlain by loessial silt, all of which is suitable material for a dam. The creek is entrenched in about 13 feet of alluvium, and is underlain by sand with a small amount of gravel and pinkish clay containing well-rounded quartz pebbles. The depth of alluvium and foundation material for the dam would have to be determined by future test borings. This site should produce a large many-fingered reservoir at a normal project cost.

Site 4. A potential reservoir site exists on Cedar Creek 2 miles northeast of La Prairie, 4 miles northeast of Golden, and 5 miles south of Augusta. About two-thirds of the 4 by 2 mile watershed is gently rolling cultivated uplands, and the remainder is composed of gently sloping pasture valleys with timber along the creek banks. A gravel road across the reservoir area would have to be abandoned and a two-lane blacktop road slightly raised. No residences would be inundated by the site, but two would require new access roads. The south abutment is steep and composed of glacial till; the north abutment is gently sloping but the underlying material is unknown. The alluvial material visible in the creek bed consists of silt, sand, gravel, and a few limestone cobbles. Geologic conditions appear favorable.

This should make a good reservoir at a normal project cost.

Site 7. Construction of a dam across Ursa Creek about 2 miles west of Mendon and 0.5 mile east of Illinois Route 96 would create a small reservoir. The village of Ursa is 0.5 mile south and 2.5 miles west of the dam site. The watershed has gently sloping valleys, most of which are in scrub timber and rolling cultivated uplands. The reservoir area is in rough pasture and brushy timber. No roads nor utilities would be involved in this development. The valley floor is about 250 feet wide, and consists of a channel about 30 by 3 feet and irregular indistinct terraces which are 12 to 15 feet above the floodplain.

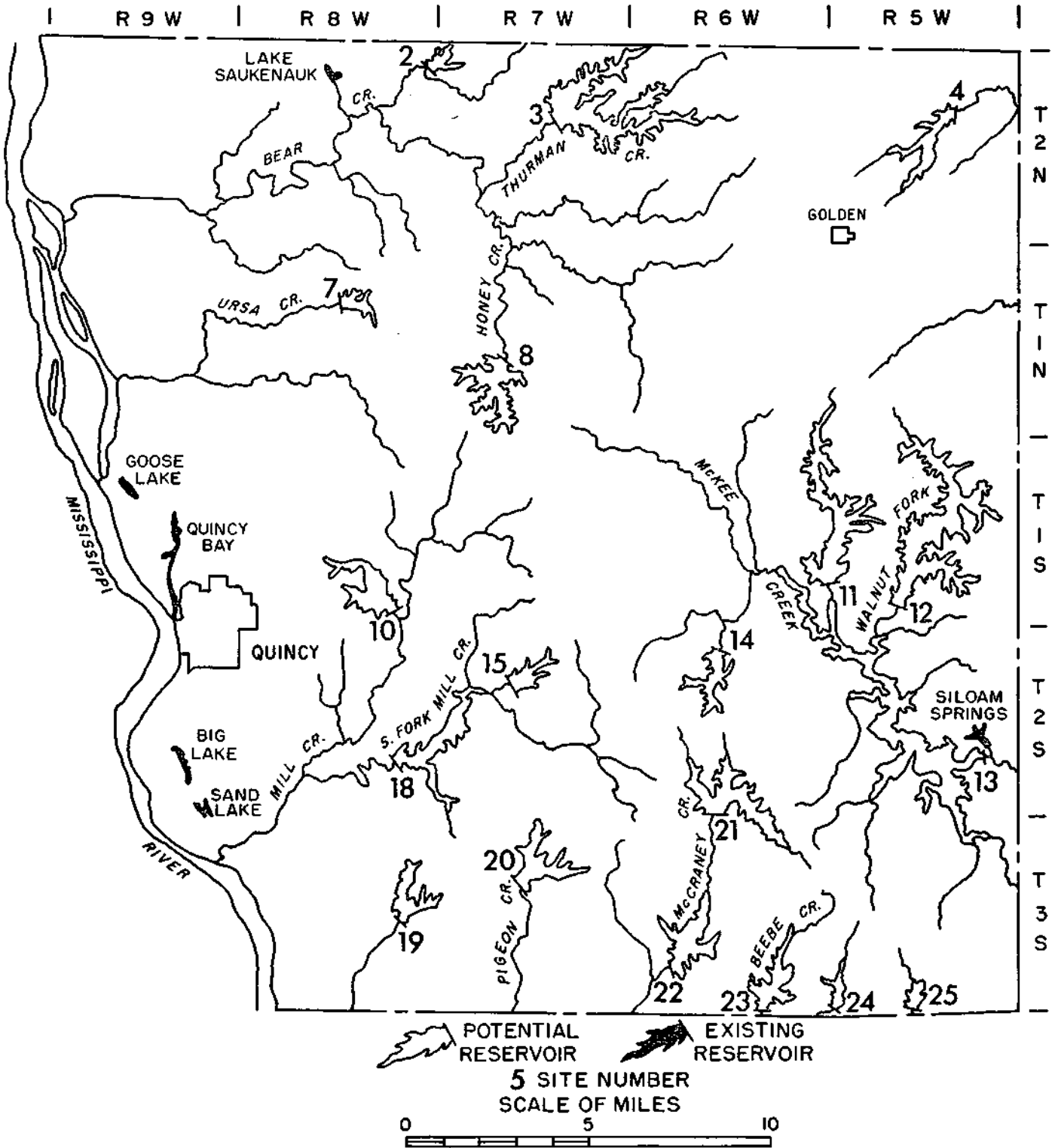
Near the dam site gray silty shale overlain by 4 to 5 inches of slabby fine-grained sandstone is exposed in the stream bed. The gently sloping valley walls are composed of glacial till overlain by loessial silt. Good material for construction of an earth dam is readily available. From a geologic standpoint this site is considered probably feasible, subject to verification by an adequate program of testing and boring. This site should make a good small reservoir at a normal project cost.

Site 8. A good reservoir site exists on Honey Creek, a tributary of the South Pork Bear Creek, located 3.5 miles west and 1 mile north of Coatsburg. The floodplain and watershed uplands are under cultivation.

Potential Reservoirs in Adams County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	Trib. Mud Creek NE ¼ SE ¼ 1-2N-8W (Mendon Quad)	580	95	1,100	400	2.2	0.8	35	400	84	5	0.68	0.6	0.6	0.5	0.4	0.5	0.3	0.2	0.2
3	Thurman Creek Cr. NE ¼ 15-2N-7W (Camp Point Quad)	640	1,650	30,800	10,000	26.1	0.3	56	1,400	551	34	8.05	6.2	6.2	6.2	6.2	5.8	5.8	5.8	5.3
4	Cedar Creek Line secs 10 & 15-2N-5W (Augusta Quad)	680	530	8,800	2,900	8.5	0.4	50	950	313	10	3.01	2.3	2.3	2.3	2.3	2.7	2.6	2.1	1.9
7	Ursa Creek Line secs 10 & 15-1N-8W (Mendon Quad)	660	90	1,100	400	4.1	1.2	38	800	168	2	1.27	1.2	0.9	0.7	0.6	0.8	0.5	0.3	0.3
8	Honey Creek SW ¼ SW ¼ 21-1N-7W (Camp Point)	670	358	5,000	1,600	7.2	0.5	42	900	229	12	2.22	1.8	1.8	1.8	1.7	1.7	1.6	1.1	0.9
10	Little Mill Creek Cr. N ½ NE ¼ 27-1S-5W (Quincy Quad)	670	120	1,800	600	2.8	1.1	45	600	177	4	1.82	1.7	1.3	1.1	0.9	1.2	0.7	0.5	0.5
11	Trib. McKee Creek SW ¼ NW ¼ 30-1S-5W (Liberty Quad)	670	790	14,200	4,600	11.0	0.3	54	1,000	422	22	4.15	3.6	3.6	3.6	3.6	3.4	3.4	2.7	2.3
12	Walnut Fork NW ¼ NW ¼ 33-1S-5W (Mt. Sterling Quad)	680	1,980	42,900	14,000	34.7	0.3	65	1,300	678	39	13.09	11.7	11.7	11.7	10.9	11.3	11.3	8.6	7.3
13	McKee Creek Line secs 24-25-2S-5W (Mt. Sterling Quad)	600	3,250	69,300	22,600	206.0	1.3	64	350	99	44	77.69	76.4	50.3	41.5	37.9	48.8	31.0	26.5	22.2
14	Trib. Lierie Creek SW ¼ SE ¼ 4-2S-6W (Liberty Quad)	690	330	5,300	1,700	4.6	0.6	48	900	310	9	3.00	2.8	2.8	2.4	2.2	2.4	1.8	1.1	1.1
15	Trib. Tournear Creek Cr. SW ¼ 9-2S-6W (Liberty Quad)	680	205	2,300	700	3.0	0.9	34	650	115	6	1.95	1.8	1.5	1.2	1.0	1.3	0.8	0.5	0.5
18	S. Fk. Mill Creek Cr. NE ¼ 26-2S-8W (Quincy Quad)	620	670	11,600	3,800	26.2	1.6	52	1,150	410	12	17.07	13.1	9.9	7.2	7.0	8.4	6.3	3.6	3.4
19	Fall Creek NW ¼ NW ¼ 24-3S-8W (Quincy Quad)	630	224	4,100	1,300	5.3	0.9	54	700	250	4	3.45	3.4	2.8	2.3	2.0	2.4	1.7	1.1	1.1
20	Pigeon Creek NW ¼ SE ¼ 9-3S-7W (Liberty Quad)	640	545	7,600	2,500	10.0	1.0	42	1,500	405	8	6.51	6.3	5.1	4.2	3.6	4.4	2.9	1.8	1.8
21	McCraney Creek NE ¼ NW ¼ 9-3S-6W (Liberty Quad)	680	870	13,300	4,300	11.6	0.6	46	1,400	438	18	7.56	7.1	7.1	5.9	5.5	6.1	4.6	2.8	2.8
22	McCraney Creek SE ¼ NW ¼ 29-3S-6W (Liberty Quad)	600	915	14,600	4,800	31.0	1.5	48	1,300	435	11	20.19	15.8	12.1	8.7	8.3	10.1	7.5	4.5	4.0
23	Beebe Creek SE ¼ SE ¼ 34-3S-6W (Liberty Quad)	660	465	7,500	2,400	7.5	0.7	48	1,100	372	8	4.89	4.7	4.4	3.7	3.2	3.8	2.7	1.7	1.7
24	Hadley Creek NW ¼ SW ¼ 31-3S-5W (Liberty Quad)	680	122	1,800	600	3.2	1.2	44	750	215	3	2.08	1.8	1.4	1.0	0.9	1.3	0.8	0.5	0.5
25	Trib. Hadley Creek SW ¼ SE ¼ 33-3S-5W (Mt. Sterling Quad)	700	96	1,200	400	4.0	2.3	36	1,050	233	2	2.61	1.7	1.2	0.8	0.8	0.9	0.6	0.4	0.3

ADAMS COUNTY



The valley walls are either timbered or in pasture with scattered timber. The small watershed limits the reservoir to the bottom one-third of the fairly deep valley. Access roads to the reservoir area are good and there are no roads in the reservoir area. The east valley wall is steep; the west wall has a gentle slope;

both are composed of glacial till overlain by tan and gray silt. Material suitable for construction of an earth dam is readily available. Burlington limestone is exposed in the banks downstream from the dam site. This site is considered possibly feasible, but should have verification of the presence and character of under-

lying bedrock which might have solution channels, and the extent and thickness of coarse material above bedrock. This should make a good reservoir at a normal project cost.

Site 10. A potential reservoir site exists on Little Mill Creek, a tributary of Mill Creek, located 3 miles east of Quincy. The reservoir area is free from timber and about three-fourths in pasture. No known residences, roads, nor utilities would be inundated by development of this site. The channel is about 25 feet wide and 7 feet deep in an alluvial plain 450 feet wide which is composed principally of silts and sands. The valley walls have gentle slopes and consist of glacial till overlain by tan silt. The depth to bedrock and nature of bedrock is unknown. The site is considered probably feasible, subject to verification by test borings. This should make a good small two-fingered reservoir at a moderately low cost.

Site 11. A fairly large reservoir could be developed on a tributary of McKee Creek about 4 miles southeast of Camp Point. Nearly all of the 6 by 2 mile watershed has a well developed drainage system and

is covered by timber. Most of the floodplain is under cultivation. There are no roads crossing the reservoir, but two farm residences would be inundated. Land acquisition, easement, and right-of-way costs should be moderate. The alluvial floodplain is composed of sandy silt with some gravel. A channel 90 feet by 6 feet is cut into the alluvium which overlies Burlington limestone. Burlington limestone is also exposed in the steep west bank. The abutments show no rock outcroppings and appear to be silt over dark reddish sandy clay which is suitable material for construction of an earth dam. Future test borings would be required to establish the depth of alluvium, distance to bedrock, and nature of foundation materials. The dam site is considered possibly feasible and should make a good reservoir at a normal project cost.

Site 12. A potential reservoir site exists on Walnut Fork, a tributary of McKee Creek, located 3 miles south and 12 miles west of Mount Sterling and 8 miles northeast of Liberty. Development of this site would inundate five residences and two gravel roads. A two-lane blacktop highway could be raised. A double pole power line crosses the site 0.75 mile above the dam. The wide flood-

Existing Reservoirs in Adams County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)	(ft)	(ft)		(ac-ft)	(mg)	(in)	
Lake Camp Saukenauk	4-9-2N-8W (Mendon Quad)	Saukee Council (BSA)	1.61	1,030	40	30	42.0	420	136.8	4.89	Soil Cons. Serv.
Martin Lake	24-25-2N-10W (Mendon Quad)	Adwell Corp.				5	29.5				Ill. Div. of Fisheries
Goose Lake	10-15-1S-9W (Quincy Quad)	Wm. F. Jansen				6	65.4				Ill. Div. of Fisheries
Spring Lake	11-1S-9W (Quincy Quad)	Spring Lake C. Cb.	0.02	15	15	10	8.0				Ill. Div. of Fisheries
Quincy Bay	22-23-27-34-1S-9W (Quincy Quad)	State of Ill.				8-10	306.0				Ill. Div. of Fisheries
Big Lake	26-2S-9W (Quincy Quad)	Big Lake Hunt Club				6	57.4				Ill. Div. of Fisheries
Twin Lake	26-2S-9W (Quincy Quad)	Big Lake Hunt Club				6	24.2				Ill. Div. of Fisheries
Turtle Shell Lake	35-2S-9W (Quincy Quad)	Lowell Newton				6	7.0				Ill. Water Survey Bull. 31
Snyder Lake	35-2S-9W (Quincy Quad)	Art Witte Lowell Newton				6	17.0				Ill. Div. of Fisheries
Sand Lake	35-2S-9W (Quincy Quad)	Dr. C. Hendricks Frank Fiedler Robert Pottle				4	68.2				Ill. Div. of Fisheries
Kate Lake	36-2S-9W (Quincy Quad)	Robert Pottle				4	15.0				Ill. Water Survey Bull. 31
Bluebill Lake	2-3S-9W (Quincy Quad)	Anton Vidas				5	5.0				Ill. Water Survey Bull. 31
Triangle Lake	22-1S-9W (Quincy Quad)	State of Ill.				5	113.8				Ill. Div. of Fisheries
Lakeshore Hills	32-1S-7W (Quincy Quad)	Hermann Real Est.	1.01	650	25	20	40.0				Ill. Div. of Fisheries
Hadley Cr. No. 2	31-3S-5W (Liberty Quad)	Walter Meyer	3.10	1,984	31	16	28.0				Soil Cons. Serv.
Clayton Res.	2-1S-5W (Augusta Quad)	Clayton	3.14	2,010	25	19	24.7				McCaslin & Co., Nokomis
Camp Point	35-1N-6W (Camp Point Quad)	CB&Q R.R.	2.18	1,391	10	6	9.3				Ill. Div. of Fisheries
Siloam Springs	24-2S-5W (Mt. Sterling Quad)	State of Ill.	1.98	1,272	40	30	62.0				State Park System
Humke Lake	2-2S-6W (Liberty Quad)	Alma Humke	.18	113	24	19	5.9				Soil Cons. Serv.
Horseshoe Lake	1-3S-9W (Quincy Quad)	Lee Terstrieip				5	5.0				

plain areas are in row crop production, but there are large areas of timber on the smaller tributary branches. Considerable land clearing would be required to clear the reservoir area. The dam site could be moved either upstream or downstream for a distance of a half mile. Walnut Pork is about 70 feet wide and flows over bluish gray shale which is entrenched some 11 feet in a floodplain 700 to 900 feet wide. The floodplain consists of gray silt and sand with some gravel and an occasional boulder. The valley walls have moderate slopes and consist of tan or gray clayey silt. The dam site is considered feasible, and there is sufficient suitable material for construction of an earth dam. This site should produce a large reservoir at a moderately high project cost.

Site 13. A potential reservoir site exists on McKee Creek located 9 miles east of Liberty and 12.5 miles southwest of Mount Sterling. This site could develop into a large reservoir on a drainage area of 206 square miles. The entire floodplain is under intensive agricultural production. Because of the limited accessibility and the size of this site, the investigation was limited. The major problems involved are the relocation of highways, two residential developments on Grindstone Creek, and three residences on Pish Hook Creek. It would be possible to locate a highway across the structure to integrate with the Siloam Springs State Park road system. Siloam Springs is on Crabapple Creek with the dam about 0.5 mile from the proposed reservoir. At the dam site the floodplain is about 250 feet wide and has a channel 85 feet by 11 feet. The alluvium consists primarily of silts and sands with some very large blocks of sandstone. Above the sandstone, exposed in the steep slopes of the valley, is bluish shale overlain by tan loessial silt that is suitable for construction of an earth dam. This site should make a large reservoir but at a high project cost.

Site 14. A potential reservoir site exists on a tributary of Lierle Creek located 3 miles north and 0.5 mile east of Liberty. The reservoir area and stream banks are about three-fourths covered with heavy timber of mixed hardwoods. Two gravel roads cross the reservoir area, but one could be raised and the other abandoned. The channel is 20 feet wide and 6 feet deep in a floodplain 450 feet wide which consists of sand and silt with some small gravel. The valley walls have gentle slopes and consist of silt. About 15 feet above the floodplain color of the silt changes from gray to red. The upland consists of tan silt and should provide an adequate amount of borrow material for the construction of an earth dam. The dam site is considered probably feasible, subject to verification by an adequate program of test borings. This site should make a good reservoir at a normal project cost.

Site 15. A potential reservoir site exists on a tributary of Tournear Creek located 1.5 miles east and 0.5 mile north of Burton. The reservoir area is about 50 percent timber, and the remainder is in brush and pasture. One gravel road crosses the reservoir area and could be raised. One small summer residence would have to be acquired. The stream bed, 60 feet wide, is developed on well bedded cherty Burlington limestone displaying little evidence of solution. The west abutment is a vertical cliff of the same limestone. The east abutment slopes gently above the limestone. Both valley walls have gentle slopes and are composed of pinkish tan loessial silt containing little or no pebbles. This material is suitable for an earth dam, and appears to be plentiful near the dam site. This site is possibly feasible, subject to verification by an adequate program of test borings. This site should make a small reservoir at a normal project cost.

Site 18. A potential reservoir site exists on the South Pork Mill Creek located 5 miles east and 3 miles south of Quincy. The reservoir area is about three-fourths cultivated and one-fourth light timber. There are no residences in the reservoir area, but access roads would have to be provided for at least two residences. Three gravel roads crossing the reservoir area would be inundated and would have to be abandoned. A channel 90 by 6 feet is developed on Burlington limestone and has cut through the alluvial plain which contains sand and gravel and larger pieces of rock. Burlington limestone is exposed in the steep west bank, but the valley walls have generally gentle slopes and consist of clayey silt with some white cherty chips. The dam site is rated as possibly feasible, subject to a program of test borings to reveal the character and condition of the limestone. This would make a fair reservoir at a moderately high project cost.

Site 19. A potential reservoir exists on Fall Creek, a tributary of The Sny, located 4.5 miles east and 2.5 miles south of Marblehead. The reservoir area is almost entirely under cultivation. One gravel road crosses the reservoir area and could be relocated over the structure. The channel is about 45 feet wide and 8 feet deep in a narrow floodplain which contacts low valley slopes. The stream at the dam site has cut through to bedrock. The underlying bedrock is cherty Burlington limestone through which leakage might occur. The abutments are fairly steep, and on the eastern abutment there is evidence of limestone outcroppings. The upper part of the slopes and the uplands are underlain by tan loessial silt suitable for construction of an earth dam. The site is probably feasible, subject to an adequate program of test borings to explore subsurface conditions, especially the possibility of leakage through the Burlington limestone bedrock. This site should make a good deep reservoir constructed at a normal project cost.

Site 20. A potential reservoir on Pigeon Creek is located 1.75 miles east and 0.5 mile north of Payson. The reservoir area is about 50 percent timber, with the remainder under cultivation. One gravel road and a two-lane blacktop road cross the reservoir site. The two-lane blacktop road could be raised. Another gravel road would have to be abandoned and one residence acquired. The channel is about 60 feet wide and 4 feet deep. The floodplain is about 600 feet wide, and is composed of alluvial silt with much sand mixed with some gravels overlying Burlington limestone. The east valley wall is moderately steep, but the west wall has a gentle slope. Both are developed on Burlington limestone and are mantled with colluvium. Materials suitable for a dam may not be readily available. The site is classified as probably feasible, subject to an adequate program of test borings to determine bedrock conditions and the availability of borrow material. This should make a deep two-fingered lake at a moderately high project cost.

Site 21. A potential dam site exists on McCraney Creek located 2.5 miles south and 0.5 mile east of Liberty. About three-fourths of the reservoir area is under cultivation, and there is timber along the stream banks and valley walls. One small frame residence would have to be acquired. One gravel road crossing the reservoir area would have to be abandoned. The channel is about 60 feet wide and 10 feet deep. The alluvial floodplain is approximately 250 feet wide, and is composed largely of sand with pockets and lenses of gravel. The valley walls have gentle slopes, and both slopes and the uplands consist of silty clay suitable for construction material for an earth dam. The dam site is probably feasible, subject to verification by an adequate program of test borings. This should make a good many-fingered reservoir at a moderately high project cost.

Site 22. A reservoir could be developed on McCraney Creek 3.5 miles east and 0.5 mile south of Plainville. Most of the reservoir area is under cultivation. About 1.5 miles of two-lane blacktop road would be inundated and would have to be abandoned. Two gravel roads crossing the reservoir area would have to be raised or abandoned. Several residences are very close to the proposed water level. The floodplain is about 0.25 mile wide with a channel of 200 to 400 feet. There is a terrace 20 to 25 feet above the creek bed. The stream bed and alluvial plain contain much brown chert gravel. The creek banks are gentle and irregular. The valley walls have moderate slopes developed from limestone. The uplands consist of silt and gravel as well as rounded quartz pebbles. An adequate supply of suitable material for construction of

an earth dam may not be readily available. This site is considered possibly feasible, but an extensive program of test borings would be required to determine subsurface conditions and availability of borrow material. This site should make a good many-fingered reservoir but at a moderately high project cost.

Site 23. A reservoir could be developed on Beebe Creek located 4 miles south and 2 miles west of Kingston. Over three-fourths of the reservoir area is under cultivation. Two gravel roads, one north-south and the other east-west, would have to be abandoned. Two residences would be inundated and would have to be acquired. Brush and timber are confined to creek banks and valley walls. The channel is about 55 feet by 8 feet in a floodplain more than 500 feet wide. The alluvium consists of gray silt intermixed with sand, with lenses of gravel. The west slope is gentle and is developed on tan silt. The east slope is very steep and exposes ledges of cherty limestone down to 2.5 feet above the floodplain surface. This site is probably feasible, subject to verification by an adequate program of test borings. This site should make a many-fingered reservoir at a normal project cost.

Site 24. A potential reservoir site exists on Hadley Creek located 2.5 miles south and 1.75 miles west of Beverly. This site is isolated and not readily accessible by road. No residences nor roads would be involved. The reservoir area is about 75 percent free from timber. The creek bed is about 18 feet wide and 4 feet deep and exposes sand, silt, gravel, and some sandstone ledges. The valley slopes are gentle, and the uplands consist of tan silt. Material for construction of an earth dam appears plentiful. This site appears probably feasible, subject to verification of an adequate program of test borings. This would make a long narrow reservoir at a normal project cost.

Site 25. A potential reservoir site exists on a tributary of Hadley Creek located 2.25 miles south and 0.75 mile east of Beverly. About three-fourths of the reservoir area is open land, mostly in pasture. No roads nor residences would be involved in this development. One access road would have to be relocated. The channel is about 30 feet wide and 7 feet deep in a floodplain about 550 feet wide. The alluvium consists of silt with much sand and Lafayette gravel. The valley slopes and uplands are underlain by gray to tan silt, which is suitable material for the construction of an earth dam. This site should make a good small reservoir with a slightly larger than normal fill, at a normal project cost.

BROWN COUNTY

Several glaciers covered most or all of Brown County, the last two being the Kansan-Keewatin Center and the Illinoian. All of the county lies within the eroded Illinoian drift plain which conforms to the bedrock surface in its gross features of major uplands and lowlands. The glacial deposits that have escaped erosion in the lower Illinois Valley area are complex. The uplands are blanketed by glacial debris known as till. In the valleys and in some places on the uplands are beds of sand and gravel. Also in the uplands are deposits of silt and fine sand known as loess.

The bedrock consists of layers of shale, coal, limestone, dolomite, and sandstone. The bedrock material originally was deposited as loose sediment in a continental sea, later buried and consolidated. In the time between deposition and the glacial era, erosion took place. Some tilting and warping of bedrock also occurred at this time.

All of Brown County drains into the Illinois River by the La Moine River in the north and McKee Creek in the south.

Brown County is generally suited to reservoir development, and many sites are available. The results of 12 feasibility studies follow.

Site 1. A potential reservoir site exists on Little Missouri Creek located 4 miles east and 1 mile north of Clayton. No roads nor residences would be involved in this development. The entire reservoir area appears to be in timber. The channel is about 20 feet wide and 6 feet deep in a narrow alluvial floodplain consisting mostly of sand with rock fragments up to boulder size. The bedrock beneath the stream bed is bluish gray shale. The lower valley slopes are steep, and bedrock is near the surface. The upland is underlain by silt which contains some pebbles and scattered large pieces of siltstone and some limestone. Suitable material for the dam may be difficult to obtain. The site is probably feasible, subject to determining availability of material for the dam. This site should make a good small reservoir at a normal project cost.

Site 3. A reservoir could be developed on a tributary of the North Fork Shelby Creek 4 miles south and 8 miles west of Rushville. The entire reservoir area is in timber. No roads nor residences would be involved in this development. The stream channel is about 60 feet wide and 10 feet deep in a floodplain about 300 feet wide. The alluvium consists of sand; a minor amount of gravel, pebbles, and cobbles; and some gray clay with fragments of Pennsylvanian limestone. The alluvium is underlain with rubbly limestone which also underlies the tan silt on the lower parts of the valley slopes, particularly on the south slope of the valley up to about 35 feet above the alluvial plain. Large blocks of limestone represent

a weathered surface on slabby limestone with bedding planes enlarged by weathering. For this reason the site is considered probably not feasible, subject to verification by an adequate program of test borings. Low cost of land acquisition, easements, and rights of way would be offset by a higher cost of construction, so that this site should result in a normal project cost.

Site 4. A reservoir site could be developed on South Fork Shelby Creek located 3 miles west and 1 mile north of Ripley. Nearly all of the reservoir area is covered with mixed hardwoods. One gravel road crosses the reservoir area but could be relocated over the structure. The channel is 5 feet deep in a valley bottom 350 feet wide that consists of alluvial silt, sand, and gravel with rock fragments of variable size. The alluvium overlies fine-grained, ripple-marked sandstone with well developed joints. The valley slopes and uplands are of tan and gray silt, and contain patches of glacial gravels in addition to some sandstone fragments of larger size. This site is questionable because of the presence of gravels, joints in the sandstone bedrock, and the lack of suitable material for a dam. An extensive program of test borings would be required to determine the feasibility of this site. Difficulties in construction would cause this project to have a moderately high cost.

Site 5. Development of a reservoir site on West Creek, a tributary of the La Moine River 2 miles west and 1 north of Ripley, would create a deep J-shaped lake. There are a few patches of cultivated land and pasture in the reservoir area, but most of the area is in mixed hardwoods. One gravel road would require raising or relocation. The dam site itself is not easily accessible by highway. The stream bed is about 50 feet wide and 9 feet deep in an alluvial plain about 500 feet wide. The alluvium contains much sand with sandstone rock fragments. The east valley wall is steep whereas the west wall is gently sloping. Pennsylvanian shale, siltstone, sandstone, and other beds of the Potsville group underlie the alluvial plain, stream bed, and valley walls up to an elevation to about 70 feet above the alluvial plain. These beds are overlain by similar beds of the Carbondale group that include coal beds which have been extensively mined in the area. Material suitable for construction of a dam is readily available. The old mines constitute a serious problem, because their workings may be connected and provide an escape for reservoir water. If the dam site were located above the coal horizon this site would be classified as probably feasible. Suitability of this site is subject to verification by an adequate program of test borings. Construction cost would probably make this a moderately high cost project.

Site 7. A potential reservoir site exists on Little Creek, a tributary emptying into Perkins Lake, 3.5 miles east and 2.5 miles north of Versailles. Three residences would have to be acquired and a gravel road abandoned. Mixed hardwoods are restricted mostly to the valley walls. The reservoir bed is under cultivation and in pasture. A small gravel pit is located near the north abutment. The gravel seems to be mixed with sandstone and clay. The stream cuts through bedrock at elevation 520, about 4 miles upstream from the site. The stream bed contains much mucky silt and clay, some gravel bars, and an occasional large boulder of limestone indicating limestone bedrock near the surface. The banks of the stream contain some pink to reddish colluvium and gravel lenses as high as 7 feet above the stream bed with overlying gray alluvial silt. An alluvial plain more than 400 feet wide merges with moderate valley slopes rising to the uplands. The valley slopes and uplands are underlain surficially by tan silt containing occasional blocks of sandstone as much as 2 feet long. Friable, heavy limonitic-stained Pennsylvanian sandstone is exposed about 45 feet above the stream bed in a small tributary of Little Creek near the dam site. This reservoir site is probably feasible, subject to verification by an adequate program of test borings. This site should make a good reservoir at a normal project cost.

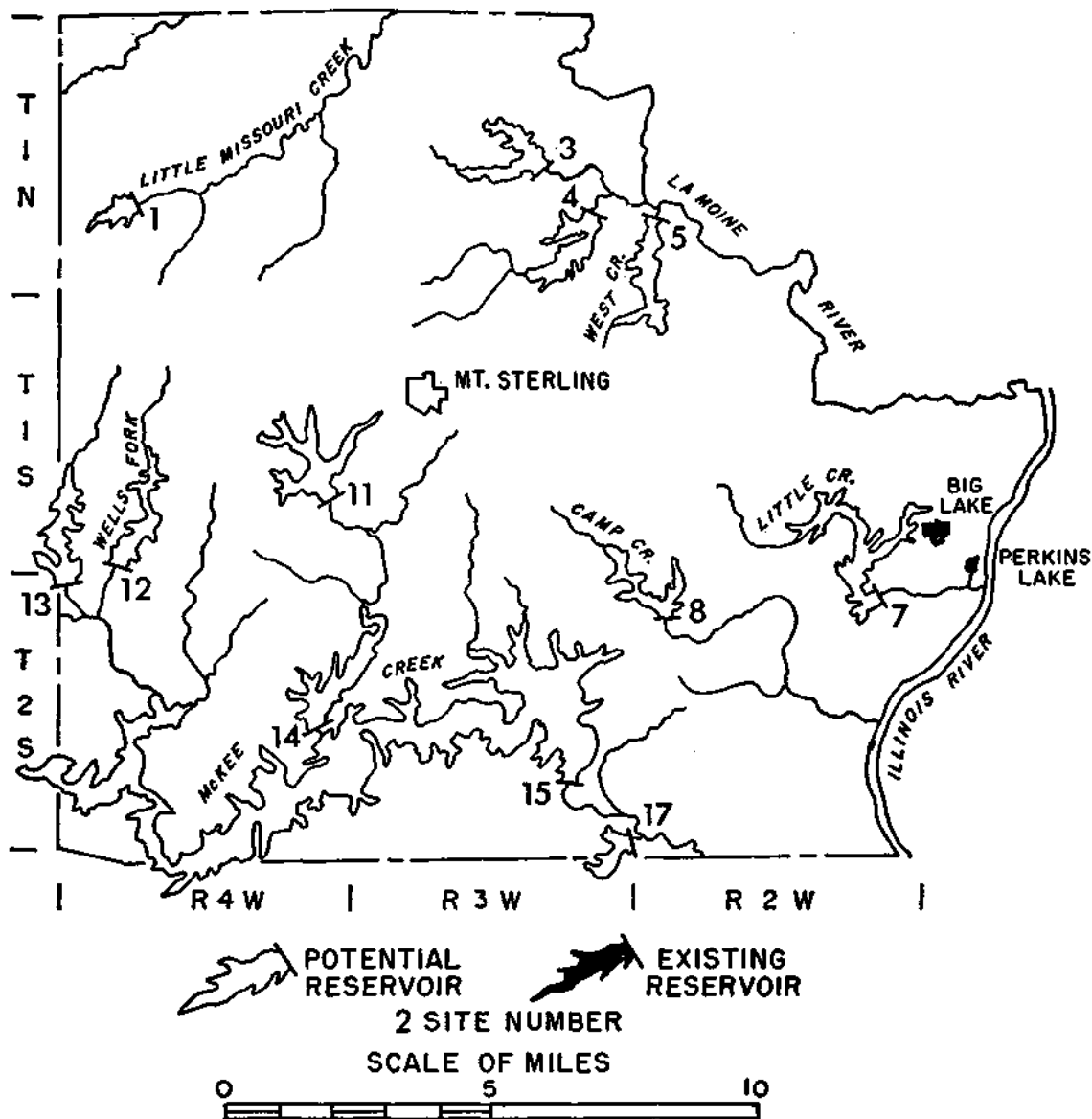
Site 8. A potential reservoir exists on Camp Creek, a tributary of the Illinois River, 2 miles north and 0.5 mile west of Versailles. The reservoir area is primarily in pasture and row crops with mixed timber confined to the valley walls. No residences would be involved but a gravel road which crosses the reservoir area would have to be abandoned. The stream bed is about 30 feet wide and 9 feet deep. The alluvial plain is about 400 feet wide, underlain by silt and slightly reddish silty clay without pebbles. The stream bed is floored with sand and some silt and a small amount of gravel. Both valley slopes are gentle, silty, and probably underlain by Pennsylvanian siltstones and sandstones. Suitable material for construction of a dam is available. The dam site is probably feasible, subject to verification of the possible occurrence, extent, and depth of gravel lenses in the alluvium. This should make a good small forked reservoir at a normal project cost.

Site 11. Dry Fork, a tributary of McKee Creek, has a potential reservoir site 2 miles west and 2.5 miles south of Mount Sterling. The reservoir area bottomland is in row crops, and the slopes are in pasture. There is very little mixed timber in the reservoir area. A gravel road crossing the lower third of the reservoir area could be abandoned, and a road at the upper end could be raised.

Potential Reservoirs in Brown County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Little Missouri Creek NE ¼ NW ¼ 29-1N-4W (Augusta Quad)	680	75	1,100	400	2.0	0.7	44	450	141	6	0.71	0.7	0.6	0.6	0.5	0.6	0.4	0.3	0.3
3	Trib. North Fk. Shelby Creek NW ¼ NW ¼ 23-1N-3W (Rushville Quad)	590	245	4,500	1,500	4.3	0.4	56	750	333	7	1.52	1.4	1.4	1.4	1.4	1.4	1.3	1.0	0.9
4	S. Fk. Shelby Creek NW ¼ NW ¼ 25-1N-3W (Rushville Quad)	540	339	6,800	2,200	11.1	0.6	60	550	258	10	3.93	3.5	3.5	3.3	3.0	3.6	2.6	2.0	1.9
5	West Creek SE ¼ NW ¼ 30-1N-2W (Rushville Quad)	520	333	1,700	600	15.7	3.6	60	750	372	9	5.56	3.0	2.2	1.5	1.3	1.4	1.0	0.7	0.6
7	Little Creek SW ¼ NW ¼ 1-2S-2W (Meredosia Quad)	520	800	17,100	5,600	13.2	0.3	64	1,050	573	23	4.68	3.5	3.5	3.5	3.5	3.2	3.2	3.2	3.2
8	Camp Creek NE ¼ NE ¼ 7-2S-2W (Meredosia Quad)	600	326	5,600	1,800	7.0	0.5	52	700	182	15	2.48	2.3	2.3	2.3	2.1	2.3	1.9	1.6	1.4
11	Dry Fork SW ¼ NE ¼ 25-1S-4W (Mt. Sterling Quad)	660	520	6,600	2,200	13.9	0.9	38	950	227	17	5.24	4.9	4.1	3.3	2.8	3.9	2.3	1.8	1.7
12	Wells Fork SW ¼ SW ¼ 32-1S-4W (Mt. Sterling Quad)	680	340	6,000	2,000	7.1	0.5	53	600	240	9	2.68	2.4	2.4	2.1	1.9	2.4	1.7	1.5	1.3
13	Purpus Creek NW ¼ NW ¼ 6-2S-4W (Mt. Sterling Quad)	680	261	4,800	1,600	6.5	0.6	55	1,000	400	10	2.45	2.3	2.3	1.9	1.7	2.2	1.5	1.2	1.1
14	Dry Fork NE ¼ NW ¼ 24-2S-4W (Mt. Sterling Quad)	580	532	10,800	3,500	30.6	1.2	61	650	257	13	11.54	11.3	7.8	6.5	5.9	7.5	4.7	4.1	3.3
15	McKee Creek NW ¼ NE ¼ 26-2S-3W (Meredosia Quad)	540	6,100	164,700	53,700	324.0	0.8	81	1,250	973	118	122.19	119.4	110.4	81.4	72.8	104.7	61.8	51.6	48.6
17	Leineke Branch NE ¼ SE ¼ 36-2S-3W (Meredosia Quad)	500	105	1,500	500	5.6	1.6	41	800	218	4	2.11	1.9	1.2	1.0	0.9	0.9	0.7	0.5	0.4

BROWN COUNTY



Existing Reservoirs in Brown County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Mt. Sterling	4-1S-3W (Augusta Quad)	Mt. Sterling	1.80	1,152	35	21	25.3	306	100	3.19	2/4/63 est. Water Survey
Hambaugh-Martin No. 1	33-2S-2W (Meredosia Quad)	John Riley	2.09	1,340	33	26	28	221	72	1.98	Soil Cons. Serv. 1961
Hambaugh-Martin No. 3	28-2S-2W (Meredosia Quad)	Raymond Turner	1.33	850	36	25	18	142	46	2	Soil Cons. Serv. 1961
Perkins Lake	32-1S-1W (Meredosia Quad)	Joe Beidie					67				Ill. Water Survey Bull. 31
Elbow Lake	7-2S-1W (Meredosia Quad)	R. J. Marquard					12				Ill. Water Survey Bull. 31
Big Lake	29-1S-1W (Meredosia Quad)	White & Co.					262				Near Versailles
Hambaugh-Martin No. 2	28-2S-1W (Meredosia Quad)	Raymond Turner	0.22	141	2	22	6.3				Soil Cons. Serv. 1959
Hambaugh-Martin No. 4	21-2S-1W (Meredosia Quad)	A. Thoroman Jr.	0.33	215	27	15	5.2				Soil Cons. Serv. 1959
Clara Orr Lake	12-1S-4W (Mt. Sterling Quad)	Clara Orr	0.30	192	18	14	8				Built about 1945

The channel is about 7 feet deep in a floodplain about 600 feet wide. The alluvium consists of silt overlying bluish clay and silty shale which contains subspheroidal iron-like concretions. The bedrock shale is exposed at places in the stream bed and banks. The valley slopes are gentle, and are developed on shaly silty clayey fine-grained sandstone. The uplands are partly glacial till and partly colluvium containing scattered pebbles. Material for the construction of an earth dam is readily available. The dam site is considered probably feasible. This should make a good many-fingered reservoir at a normal project cost.

Site 12. A potential reservoir site exists on Wells Fork, a tributary of the Little Missouri Creek, 6.5 miles west and 4 miles south of Mount Sterling. The lower portion of the reservoir area is in scrub brush and mixed timber, and the remainder is clear and under cultivation. No roads nor residences would be involved in this development. The stream flows over stream gravels and silty shale in a channel about 8 feet deep. The floodplain is about 375 feet wide. The alluvium consists of a few feet of silt and sand resting on blue silty clay. The valley walls are moderately steep and consist of light tan clayey silt. The dam site is considered geologically feasible. This site would make a long narrow reservoir with much dendritic drainage entering directly into the reservoir. This site should develop at a normal project cost.

Site 13. A potential reservoir site exists on Purpus Creek, a tributary of the Little Missouri Creek, 7.5 miles west and 4 miles south of Mount Sterling. The reservoir area is predominantly pasture with some mixed hardwoods and brush in the upper reaches. The channel is about 5 feet deep in the valley floor that is 400 to 500 feet wide. The alluvium consists of a few feet of silt and sand probably underlain by lenses of gravel at the base. The gentle valley slopes are covered with colluvium apparently derived from glacial drift. The watershed is long and narrow with gently rolling uplands but steep-sided valley walls. This site is probably feasible, subject to verification by an adequate program of test borings. It should make a fair reservoir at a normal project cost.

Site 14. A good potential reservoir exists on Dry Fork, a tributary of McKee Creek, 7 miles south and 2.5 miles west of Mount Sterling. The reservoir area would fill only a portion of the very deep valley. The valley floor is under cultivation nearly the entire length of the reservoir site. The valley walls are covered with mixed hardwoods. No roads nor residences would be in-

involved in the development of this site. The channel is 5 feet deep in a floodplain 500 feet wide. The alluvium consists of silt with gravel and rocks of boulder size, largely dark brown fossiliferous crystalline limestone. About 0.5 mile downstream there is an outcrop of Pennsylvanian bedrock consisting of irregular limestone and dark siltstone and shale. The valley walls are moderately steep. The lower 55 feet consists of Pennsylvanian sandstone, and the upper portion appears to be clayey silt or silty sand with pebbles, mostly of silica. The site is considered feasible and should make a good reservoir at a moderately high project cost.

Site 15. A large reservoir could be created on McKee Creek with a dam 2.75 miles west and 1.25 miles south of Versailles. The floodplain throughout the reservoir area is under intensive cultivation. Timber is limited to the immediate area of the creek and the valley walls. Timber on the valley walls contains considerable mixed hardwoods. There are about 12 farm residences that would have to be acquired. Six gravel roads and a two-lane blacktop road crossing the reservoir area would have to be abandoned or relocated. At least one north-south road would have to cross the reservoir area. The channel is 60 to 75 feet wide and 14 feet deep in an alluvial plain 650 feet wide. The creek appears to cut through rock throughout much of its length, but this is often concealed by a heavy bed load of sand and silt. The west valley wall is steep and consists of massive Pennsylvanian sandstone with wide irregular bedding planes overlain by yellow clay and silt. This site is possibly feasible, subject to verification of leakage possibilities through sandstone formations. This site should develop an extremely large reservoir for this county but because of high land acquisition and relocation cost would result in a moderately high project cost.

Site 17. A potential reservoir site exists on Leineke Branch, a tributary of McKee Creek which empties into the Illinois River. A dam site is located 1.5 miles west and 2 miles north of Chambersburg. The reservoir area is mostly in pasture. No roads nor utilities would be involved in the development of this site, but one farm unit would have to be acquired. The stream has a channel about 30 feet wide and 12 feet deep entrenched in a floodplain about 400 feet wide. Irregularly bedded fossiliferous limestone is exposed in the bottom of the channel and the lower portion of its banks, and is overlain by clay and silt. The south valley wall is steep and consists of limestone to at least 25 feet above the stream bed overlain by clayey silt. The north valley wall has a gentle, much gullied slope with only clayey silt visible. This site is probably feasible and should develop a small reservoir at a normal project cost.

CASS COUNTY

Cass County was completely covered by the Illinoian ice sheet that leveled hills and filled old valleys with glacial drift and glacial till. The Wisconsin ice sheet approached but did not reach any portion of Cass County. However, the melting of the Wisconsin ice sheet took centuries as the climate alternated between cold and warm temperatures, and this caused varying quantities of water to pour down the Illinois and Sangamon Rivers. Wind-blown fine silt sediments from the dried mud flats were deposited on the uplands. The wind sorted the particles, known as loess, depositing the sand close by and the silt farther away. The depth of loess varies from about 15 feet in the southeastern part of the county to 100 feet or more near the bluffs. Erosion of the bluffs have left a "bluff wash" at their base. Since the Illinois and Sangamon Rivers and their tributaries overflow their banks, water-borne sediment is still being deposited.

Cass County has three distinct types of topography, the bottom and terrace lowlands adjacent to the Illinois and Sangamon Rivers, the steep bluffs and head-water erosion areas, and the level to gently rolling uplands. Drainage on the bottomlands varies from too well drained on the rolling sandy areas to swampy on the lowlands. The bluffs and areas of head-water erosion extend from east of Chandlerville to south of Arenzville. Head-water erosion has cut up the land surface in this part of Cass County, producing narrow flat areas between steep-sided V-shaped valleys. On the nearly level to gently rolling areas around Virginia, Philadelphia, and Ashland, tile systems must be used to supplement the poor natural drainage.

Pennsylvanian strata form most of the bedrock surface in Cass County. These rocks are primarily weak shales but may contain limestones, coal seams, and locally developed sandstones. In the eastern third of the county where the bedrock surface drops into the Illinois bedrock valley, the older Mississippian strata form the surface. These rocks usually consist of various types of limestone of great thickness.

Cass County is ideally suited to reservoir development. Many sites are available except in the Illinois River lowlands along the eastern third of the county. The results of 13 feasibility studies follow.

Site 1. A good small reservoir site exists on Opossum Hollow 7 miles east and 1 mile north of Chandlerville. The stream is a direct tributary to the Sangamon River and forms a dendritic pattern in the nearly flat uplands. Cover in the reservoir area consists of pasture with brush and light timber along the creek banks. Depth to bedrock is approximately 150 feet, but strippable coal is available under the lower part of the valley. Surficial soils are developed in deep loess deposits with vertical

exposures of 15 to 20 feet. If the weathered loess of the area does not prove to be a suitable material for use in the earth fill, an adequate supply of material may be difficult to locate. Pending test borings and materials testing the site is considered probably feasible geologically. This reservoir should develop at a moderately low project cost since no roads, residences, nor other man-made obstructions would be involved.

Site 2. A potential reservoir site exists on Middle Creek about 6 miles east of Chandlerville. The stream has a dendritic pattern with moderately steep valley walls. Cover in the lake area consists of pasture or row crops on the floodplain, and brush or light timber on the valley walls. One township road crossing the site would be the only man-made obstruction involved in this development. A surficial geologic investigation and logs of previous borings in the area indicate that the site is probably feasible. Glacial drift, primarily till, 100 to 150 feet thick rests on the bedrock which contains coal deposits. Loess as much as 20 feet deep overlies the area making good borrow material difficult to obtain. The weathered loess would probably be suitable for the flanks of the dam, but till or clay should be used in the core wall. Depth of the core wall, foundation conditions, and location of borrow would have to be determined by a complete program of test borings. In general this appears to be a good site that could be developed at a normal project cost.

Site 3. An attractive two-fingered reservoir could be developed on Miller Creek about 4.5 miles east of Chandlerville. The stream shows a well developed dendritic pattern deeply entrenched in gently rolling uplands. The watershed is covered with deep loess and severe erosion is evident. Cover in the lake area consists of brush and mixed timber. There are a few heavily timbered areas along the shoreline suitable for recreational development. One township road crossing the lake area could easily be abandoned. A surficial geologic investigation and logs of previous borings did not uncover any serious problems. Bedrock which includes coal beds is overlain by 50 to 100 feet of glacial drift covered by up to 25 feet of loess. The loess drapes into the valleys obscuring the underlying material. If the underlying material is available in any nearby locations it would probably provide a more suitable fill material than the weathered loess. This site should develop at a moderately low project cost.

Site 4. A dam on Cox Creek would create a many-fingered lake some 5 miles long, about 3 miles southeast of Chandlerville. The watershed consists of gently rolling Illinoian drift plain with surficial soils developed in

thick loess. The reservoir area lies along the southern side of a major bedrock valley which includes an area of strippable coal reserves. The stream flows in a 10-foot notch composed of silt and loess in a flat floodplain. The abutments are moderately steep and approximately 80 to 100 feet high. Exposures along the right side of the valley indicate that 15 feet of loess is underlain by silty material which may be till. The contact between the loess and silt is a gravelly material. A suitable source of borrow could be found in the weathered loess or underlying material. The site is considered probably feasible geologically, subject to a complete program of testing and boring. Access to the site is good. Several north-south township roads have already been abandoned leaving only one road to be abandoned and one other to be raised. Cover in the lake bed is nearly all clean tilled cultivation. Many of the fingers and coves would be wooded making this a very attractive development. This site should result in a good many-fingered lake at a normal project cost.

Site 5. A small reservoir could be developed on Jobs Creek about 4 miles northeast of Virginia. No roads nor residences would be involved in the development. Access to the site is poor, but roads less than 0.5 mile in length would reach most points on the lake. A small portion of

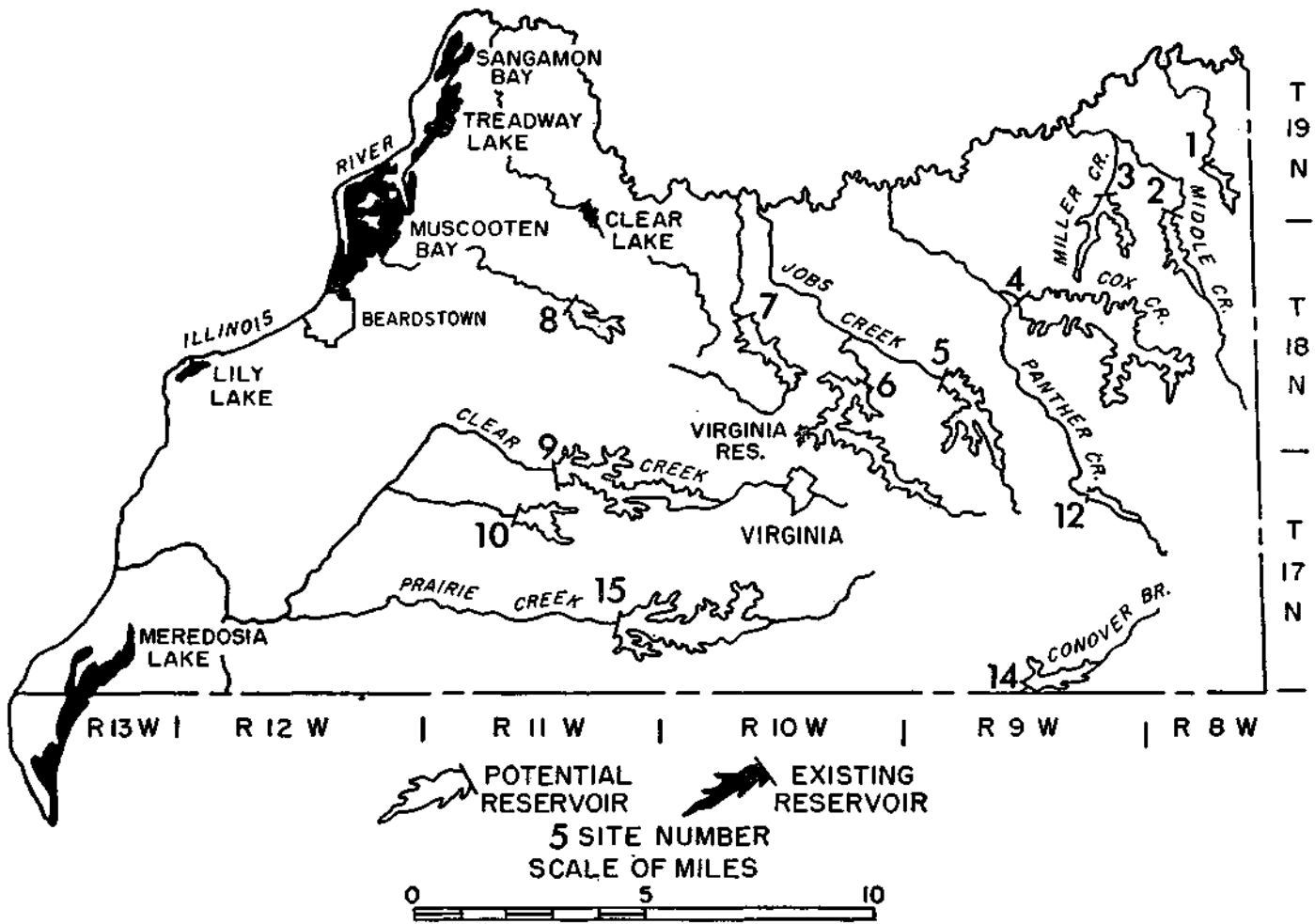
the lake bed near the dam site is under cultivation, but for the most part the area is wooded. A preliminary geologic investigation and logs of previous borings indicate that the site is probably feasible geologically. The abutments and valley walls are steep and are composed of gravelly till overlain by loess. The total thickness of the material over bedrock is about 110 feet. Clayey loess and the more clayey portions of the underlying till should be suitable for fill material. This site should make a good small reservoir at a moderately low project cost.

Site 6. A dam across Jobs Creek about 3 miles northeast of Virginia would create an L-shaped lake reaching within 0.25 mile of the Virginia Reservoir. Illinois Eoute 78 and township roads provide good access to the site. One gravel road would have to be abandoned or raised. Timber covers a large portion of the lake area, but some of the floodplain is in pasture. The watershed consists of very gently rolling loess covered uplands in which the dendritic stream pattern is deeply entrenched. Logs of previous borings indicate that bedrock is covered by 100 to 150 feet of unconsolidated material, primarily till. Strippable deposits of coal underlie some parts of the lake area. Till is known to underlie the loess, although there are a few small gravel pits in the area. The dam probably would be founded on silty, hard, gravelly

Potential Reservoirs in Cass County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Opossum Hollow SE ¼ SE ¼ 29-19N-8W (Chandlerville Quad)	540	83	1,100	400	1.8	0.7	41	400	106	4	0.73	0.6	0.6	0.5	0.4	0.5	0.5	0.3	0.2
2	Middle Creek NW ¼ NW ¼ 32-19N-8W (Chandlerville Quad)	540	186	2,600	800	8.5	1.5	42	500	137	8	3.45	3.3	2.5	1.7	1.5	1.9	1.6	1.0	0.9
3	Miller Creek Ctr. NW ¼ 36-19N-9W (Chandlerville Quad)	540	166	2,700	900	4.5	0.7	48	550	178	8	1.83	1.6	1.6	1.3	1.0	1.6	1.2	0.8	0.7
4	Cox Creek SW ¼ SW ¼ 10-18N-9W (Chandlerville Quad)	560	1,011	17,900	5,800	23.1	0.6	53	950	402	37	9.37	7.9	7.9	7.7	6.1	8.5	7.0	4.7	4.0
5	Jobs Creek NE ¼ NE ¼ 30-18N-9W (Virginia Quad)	570	160	2,200	700	5.5	1.1	42	500	145	7	2.33	2.1	1.9	1.2	1.0	1.6	1.2	0.7	0.7
6	Jobs Creek SW ¼ NW ¼ 25-18N-10W (Virginia Quad)	550	250	3,600	1,200	12.5	1.6	43	700	200	10	5.07	4.8	3.6	2.4	2.2	2.8	2.3	1.5	1.3
7	Indian Run SE ¼ NE ¼ 17-18N-10W (Chandlerville Quad)	540	243	4,500	1,500	7.2	0.7	55	750	319	8	2.92	2.6	2.6	2.1	1.7	2.7	2.0	1.3	1.2
8	Trib. Illinois River NE ¼ NE ¼ 15-18N-11W (Beardstown Quad)	580	102	2,000	700	2.2	0.5	60	800	346	4	0.89	0.7	0.7	0.7	0.6	0.8	0.7	0.5	0.4
9	Clear Creek SE ¼ NW ¼ 3-17N-11W (Arenzville Quad)	560	570	11,200	3,600	15.7	0.8	59	900	415	19	7.80	7.5	7.1	5.0	3.3	6.9	4.1	2.9	1.9
10	Trib. Clear Creek NW ¼ SE ¼ 9-17N-11W (Arenzville Quad)	580	141	2,500	800	2.4	0.5	53	650	256	6	1.19	1.1	1.1	0.9	0.6	1.0	0.7	0.5	0.3
12	Panther Creek SW ¼ SE ¼ 2-17N-9W (Virginia Quad)	600	115	1,200	400	4.1	1.6	30	400	69	5	1.66	1.5	1.1	0.8	0.7	0.8	0.6	0.4	0.3
14	Conover Branch NE ¼ SW ¼ 34-17N-9W (Virginia Quad)	605	211	1,600	500	7.5	2.6	23	500	56	6	3.73	2.2	1.5	0.8	0.7	1.0	0.7	0.3	0.3
15	Prairie Creek NW ¼ NW ¼ 25-17N-11W (Arenzville Quad)	560	570	6,800	2,200	16.6	1.4	36	850	191	19	8.25	7.9	5.0	3.6	2.4	4.6	2.9	1.4	1.3

CASS COUNTY



till. Pill material can be obtained from the underlying till and possibly from the weathered loess. No serious problems should be anticipated in this development, and project costs should be normal.

Site 7. A reservoir could be developed on Indian Run with the dam located about 0.25 mile upstream from the Illinois River bluffs. The lake would be about 2.5 miles long extending to within 2 miles of Virginia. The stream is deeply entrenched in the loess covered Illinoian drift. The site is located on the southern slope of the Havana bedrock lowland and probably overlays strippable coal reserves. The abutments are steep and consist largely of loess over till. The till combined with weathered loess should make suitable material for the earth fill. Cover in the site consists of brush on the floodplain and heavy timber on the valley walls and coves. Steep slopes surrounding the shoreline would limit lakeside developments. The site is considered probably feasible geologically, pending a complete program of testing and boring. This site should develop at a moderately low project cost.

Site 8. A small reservoir could be developed on an unnamed tributary of the Illinois River about 5 miles east of Beardstown. The stream is entrenched in till overlain by 20 to 30 feet of loess. The bedrock surface is uneven in this area and is expected to be near the surface at channel level. Strippable coal reserves are known to underlie the reservoir area. Material suitable for construction of a dam should be available from weathered loess or underlying till. The site is considered probably feasible geologically, pending test borings and material testing. Access to the site is poor, although good township roads lie within 0.25 mile of the lake. No man-made obstructions are involved, and land costs should be relatively low. Most of the lake area appears to be in timber with good recreational possibilities on the wooded slopes surrounding the lake. This site should make a good small reservoir at a moderately low project cost.

Site 9. A dam across Clear Creek 6 miles west of Virginia would create an attractive reservoir about 4 miles long. The stream's dendritic pattern is deeply

entrenched into the gently rolling loess covered uplands. The watershed unfortunately includes the entire city of Virginia and the sewage treatment plant for that city. The bedrock contains strippable coal deposits, at about the same elevation as the stream bed, and is overlain by 60 to 85 feet of porous outwash overlain by 40 feet of yellow clay. The material directly overlying the bedrock could be a possible source of leakage and should be investigated. Weathered loess and till should be available in sufficient quantity for construction of an earth dam. Two township roads crossing portions of the site could be raised slightly. No residences would be inundated by the development, but two or three might have to be acquired for shoreline control. Timber in the lake area is restricted to the creek banks and about half of the valley walls. About a third of the wide floodplain is under cultivation. This site should produce a normal cost project.

Site 10. A small two-fingered reservoir could be developed on the headwaters of a tributary of Clear Creek about 6 miles west of Virginia. No residences would be inundated, but several would be within shoreline control zones. One township road across a finger of the site could be raised slightly. Cover in the lake area consists of pasture and row crops on the floodplain and timber on the valley walls and creek banks. Logs of previous bor-

ings indicate loess changing to clay extends to a depth of about 75 feet and is underlain by 20 feet of gravel over 20 feet of clay over additional gravel. Future borings would be required to determine the possibility of leakage through the upper gravel layer. Loess draping into the valley hides any possible outcrop of gravel in the moderately steep valley walls. The stream flows in a 10-foot notch consisting of alluvial silt and loess. Material suitable for the construction of an earth dam is available in the nearby clayey loess or underlying till. This site should develop at a normal project cost.

Site 12. A very narrow reservoir could be constructed on the upper reaches of Panther Creek about 5 miles northwest of Ashland. No roads nor residences would be involved in this development. Access to the site is provided by good township roads from U. S. Route 67. Cover in the lake area is timber with the exception of some pasture in the fingers. Loess covering the gently rolling uplands may be as much as 20 feet deep. Logs of previous borings indicate that material underlying the loess includes 20 feet of clay over 50 feet of drift over alternating layers of shale and gravel to bedrock. The abutments are steep, but loess and vegetation hide the underlying material, possibly till. Depth of alluvium in the stream bed and location of the best source of borrow would have to be determined by future boring and test-

Existing Reservoirs in Cass County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Meredosia Lake	26-34-35-17N-13W 3-9-10-16-16N-13W (Meredosia Quad)	Public					584				Filled by Ill. River; partially in Morgan Co.
Twin Ponds	33-17N-13W (Meredosia Quad)	Public					24				Filled by Ill. River; Ill. Water Survey Bull. 31
Muscooten Bay	1-2-11-18N-12W (Beardstown Quad)	Public					1,646				Filled by Sangamon River; Ill. Div. of Fisheries
Meyers Pond	11-18N-12W (Beardstown Quad)						28				Filled by Lost Creek; Ill. Div. of Fisheries
Big Lake	31-19N-9W (Chandlerville Quad)						20				Filled by Sangamon River; Ill. Water Survey Bull. 31
Cottonwood Lake	32-19N-10W (Chandlerville Quad)						40				Sangamon River backwater; Ill. Water Survey Bull. 31
Sangamon Bay	7-8-19N-11W (Beardstown Quad)						377				Sangamon River backwater; Ill. Div. of Fisheries
Treadway Lake	19-19N-11W (Beardstown Quad)						615				Sangamon River backwater; Ill. Div. of Fisheries
Clear Lake	35-19N-11W (Beardstown Quad)						50				Sangamon River backwater; Ill. Water Survey Bull. 31
Virginia Lake	34-18N-10W (Virginia Quad)	Virginia	0.828	529			12	140	45.6	3.16	1950 sed. survey
Lily Lake	19-18N-12W (Arenzville Quad)						285				Filled by Ill. River; near Beardstown
Friend Lake	28-19N-9W (Chandlerville Quad)						5				Filled by Sangamon River; Ill. Water Survey Bull. 31
Little Lake	31-19N-9W (Chandlerville Quad)						5				Filled by Sangamon River; Ill. Water Survey Bull. 31
Leeper Lake	31-19N-9W (Chandlerville Quad)						5				Filled by Sangamon River; Ill. Water Survey Bull. 31
Pike Lake	35-19N-10W (Chandlerville Quad)						5				Filled by Sangamon River; Ill. Water Survey Bull. 31
Biernbaum Lake	3-17N-10W (Virginia Quad)	G. Biernbaum	0.06	40	12	8	5				
Longs Lake	4-18N-9W (Chandlerville Quad)	E. Long	0.09	60	30	22	17				Near Chandlerville

ing. This site should develop at a moderately low project cost.

Site 14. A dam across Conover Branch would create an attractive reservoir about 5 miles west of Ashland. About two-thirds of the shoreline would be timbered. Most of the lake bed is in pasture. Access would be provided by township roads close to the site. No roads would be inundated, but one residence might have to be acquired for shoreline control. Soils on the gently rolling uplands are developed on a 15-foot blanket of loess. About 100 feet of drift, primarily till, rests on the bedrock surface beneath the proposed dam site. Loess draping into the valley covers till which probably makes up most of the abutments. The wide V-shape of the valley is an indication that alluvium in the floodplain is not exceptionally deep. Weathered loess and the underlying till should provide adequate sources of borrow for the earth fill. Pending a complete program of testing and boring this site is considered probably feasible geologically. Low land values and minimum construction difficulties should make this a moderately low cost project.

Site 15. A potential dam site exists on Prairie Creek 3 miles south and 4 miles west of Virginia. The watershed consists of gently rolling loess covered Jacksonville drift plain. The valley system shows a dendritic pattern and overlies the Arenzville bedrock drainage system. Parts of the upland areas are underlain by strippable coal reserves. The stream flows in a notch 6 to 8 feet deep in alluvial silt and loess; the depth of the alluvium has not been determined. The abutments are moderately steep and probably composed of till, but the draping effect of the loess obscures the underlying material. Although future borings would be required to locate the best source of borrow, till and weathered loess should be readily available. No residences and only one township road would be inundated by this development. There is considerable timber in the lake area particularly near the dam site. Upstream the floodplain is under cultivation and the valley walls are in pasture. No serious problems are apparent in this development and project costs are expected to be normal.

CHAMPAIGN COUNTY

The bedrock surface of Champaign County is basically of Pennsylvanian age and consists of shale or limestone with the possibility of coal seams and locally developed sandstones. The Mahomet bedrock valley crosses the northwest portion of the county, and the Pesotum bedrock valley lies along the extreme southern edge.

The Kansan, Illinoian, and Wisconsinan glaciers covered the entire county. The Wisconsinan formed the present topography. Total drift thickness in the county varies from 95 to 300 feet with an average of over 200 feet. The Wisconsinan drift is from 60 to 100 feet thick. Soils in the county have been formed from loessial deposits which occur from 0 to 3 feet deep over rolling areas and 6 to 8 feet deep in the lowlands. Glacial surface features are very much in evidence. The Cerro Gordo moraine starts in this county near Mahomet and extends southwest into Piatt County. The Champaign morainic system crosses the county in a northwest-southeast direction from Mahomet to Champaign to Sidney. A ridge from the Bloomington system exists in the northeast corner of the county. Elevations within the county vary from 630 to 860 feet with a point on the Champaign moraine providing the highest location.

Drainage is provided in the northwest by the Sangamon River, in the extreme northeast by the Middle Fork, in the southwest by the Kaskaskia, in the southeast by the Embarras and Little Vermilion Rivers, and in the east-central by the Salt Fork.

Although geologic conditions are favorable for reser-

voir development throughout Champaign County, the topography is such that only a few small reservoir sites are available. The results of five feasibility studies follow.

Site 1. A small reservoir could be developed on an unnamed tributary of the Sangamon River 2.5 miles south and 1 mile west of Fisher. No roads nor residences would be involved in the development. Access to the site would be somewhat difficult since the area lies about 0.5 mile from township roads. Backwater from the Sangamon River would probably reach the fill during flood stage. Geologic conditions appear to be favorable. The reservoir area is underlain by glacial material, primarily till. The till is overlain on the uplands by loess and in the floodplain by clayey dark brown silt containing sand and pebbles. The till contains lenses of sand and gravel but these are not believed to be continuous. Fill material should be readily available from nearby till deposits. This site should develop at a low project cost.

Site 2. A small lake site exists just north of the Mahomet city limits on a tributary of the Sangamon River. Access to the site is provided by Illinois Route 47 lying a few hundred feet to the east. The rolling topography of the watershed is common to the backslope of the Champaign end moraine. Long uniform slopes extend from the stream to the extremities of the floodplain.

Cover in the lake area consists of row crops or pasture with very little timber. No roads, residences, nor other man-made obstructions would be involved in the development. A surficial examination and logs of previous borings show geologic conditions to be favorable, subject to verification by a complete program of testing and borings. The abutments are composed of, and the area underlain by, about 100 feet of silty sandy glacial till. This material should be suitable for construction of an earth fill. Sand lenses are known to exist in the area but are not generally continuous. Any sand or gravel deposits encountered at the ends or below the dam should be removed. This site should make a good small reservoir at a low project cost.

Site 3. A potential reservoir site exists on Buck Creek southeast of Penfield. The watershed is large for the storage capacity of the reservoir and consists of a part of the nearly level till plain between the Cropsey and Bloomington end moraines. The area is composed of 50 to 100 feet of till blanketed by loess. The surface elevation of this reservoir is limited by a cemetery and several residences in Penfield. The suggested 700-foot mean sea level (msl) elevation is probably several feet higher

than a maximum feasible elevation. A two-lane oiled road would have to be abandoned and a two-lane black-top road raised. Geologic conditions appear favorable, subject to verification by an adequate program of boring and testing. The abutments and foundation are probably composed of a gray silty till found in shallow erosional cuts in the area. Depth of the alluvium was not determined but is not expected to be great. Sand lenses may be discovered but probably are not continuous. The silty till should provide a good source of borrow. This site could provide a fair reservoir at a high project cost.

Site 4. A bypass type of reservoir could be constructed some 3 miles northeast of Urbana. The greatest problem involved in this development would be the construction of a 6000-foot diversion channel to carry the flow of the Saline Branch Drainage Ditch. The channel would be as much as 40 feet deep. Local drainage would probably sustain the reservoir without pumped storage, and there is a possibility of diverting drainage from section 26 into the reservoir. Two township roads crossing the site and two residences would be inundated. Two other residences would have to be acquired for shoreline control. The area is constantly developing and shoreline

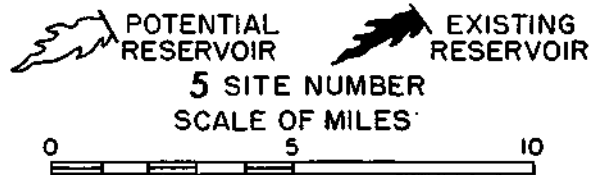
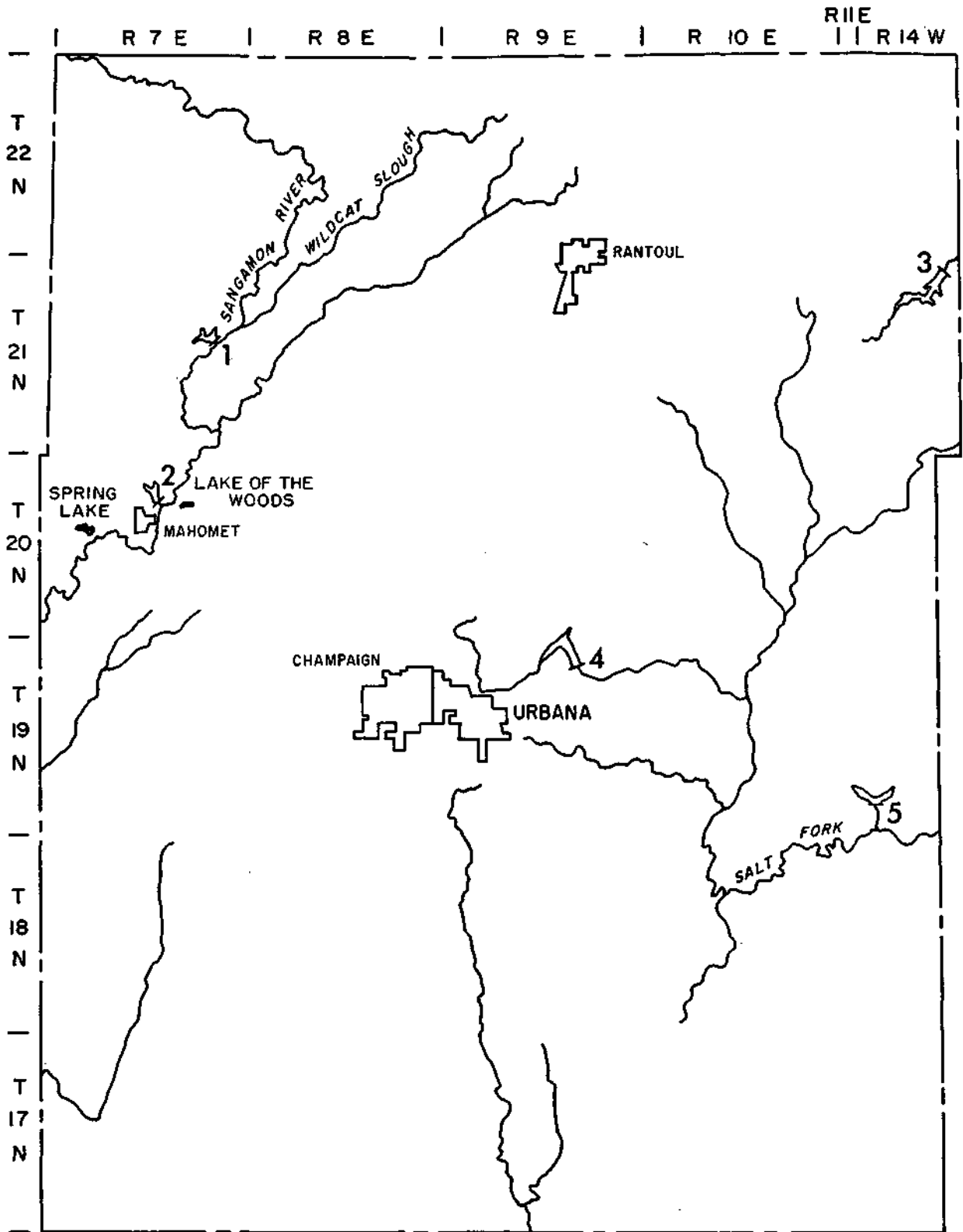
Potential Reservoirs in Champaign County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore line (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Sangamon River NE ¼ SE ¼ 14-21N-7E (Gibson City Quad)	710	26	200	65	1.3	4.1	19	550	54	2	0.61	0.3	0.2	0.2	0.1	0.1	0.1	0.1	
2	Trib. Sangamon River SW ¼ SE ¼ 10-20N-7E (Mahomet Quad)	710	38	350	114	1.3	1.9	28	700	66	2	0.61	0.5	0.4	0.3	0.2	0.3	0.2	0.1	0.1
3	Buck Creek Ctr. 4-21N-14W (Potomac Quad)	700	141	1,000	300	12.1	8.8	22	800	92	6	8.16	1.9	1.5	1.2	1.1	0.8	0.6	0.4	0.4
4	Saline Branch Ctr. 2-19N-9E (Urbana Quad)	690	134	700	200	3.0	2.4	15	650	53	5	1.42	0.9	0.8	0.6	0.5	0.5	0.3	0.2	0.2
5	Trib. Salt Fork NW ¼ SE ¼ 31-19N-14W (Fithian Quad)	650	134	900	300	15.8	9.1	20	650	68	5	7.31	2.1	1.7	1.4	1.3	1.2	1.1	0.9	0.8

Existing Reservoirs in Champaign County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake of the Woods	11-14-20N-7E (Mahomet Quad)	Forest Preserve	0.80	510	38	6-20	22.5	180	58.6	4.22	
Spring Lake	17-20N-7E (Mahomet Quad)	Spring Lake Assn.	3.25	2,080	30	25	31.0	310	100.9	1.79	Carl A. Bays & Assoc., Inc.
Crystal Lake Park	8-19N-9E (Urbana Quad)	Urbana	0.03	20		1-12	7.2	34	11.1	21.24	Urbana Park Dist.
St. Joseph Spts. Club Lake	10-19N-10E (Urbana Quad)	St. Joseph Spts. Cb.	0.11	68		6-20	6.5	52	16.9	8.86	Near St. Joseph; Nassanari Bros.
Greenwood Lake	21-22N-8E (Gibson City Quad)	Greenwood Cb.	0.07	43	20	10-18	13.0	93	30.3	24.90	Near Dewey
Kaufman's Clear Lake	10-19N-8E (Mahomet Quad)	Kaufman	0.06	40		25-30	10.1	121	39.4	37.80	
Park Hills Lake	11-20N-7E (Mahomet Quad)	Park Hills	0.33	210	20	12-15	9.3	55	17.9	3.12	

CHAMPAIGN COUNTY



acquisition might involve several new homes. Clements Cemetery is very close to the proposed shoreline and one section seems quite low. A preliminary examination indicates that geologic conditions are favorable at this location. Unconsolidated materials are known to be at least 100 feet deep and are composed primarily of till containing occasional interbedded layers of sand and gravel. Future borings should be aimed at determining the location and extent of such permeable layers. Sufficient till suitable for borrow should be available in the nearby uplands. This site could develop at a high project cost.

Site 5. A potential reservoir site exists on a tributary of the Salt Fork about 2 miles northwest of Homer. The

watershed is large for the capacity of the lake, but the flat nature of the uplands and extensive tile drainage would limit rapid sedimentation of the lake. Township roads in the upper reaches of the site might have to be raised, but no other roads nor residences would be involved. The lake bed is virtually free from timber. The bottoms are in either row crops or pasture. There is a small area of timber suitable for recreational development along the eastern shoreline. The abutments and the valley walls are steep and composed of clayey gravelly till. Bedrock is known to be about 100 feet deep in this area, and the primary overlying material is till. Suitable till for use as borrow is readily available from the nearby uplands. This is a fairly good site that could develop at a moderate project cost.

CHRISTIAN COUNTY

Pennsylvanian bedrock underlies the glacial drift throughout Christian County. The surfaces of these strata are primarily shale, but coal has been mined in the area and limestone or sandstone could be encountered. The Middletown bedrock valley is the major topographic feature and runs from south to north through the center of the county.

The Illinoian glacier was the principal source of unconsolidated material in Christian County. This massive ice sheet leveled bedrock ridges and filled valleys with the resulting debris. Also, a great volume of drift was deposited as the ice melted and receded. The most common material in the drift is known as till and consists of an unsorted mixture of particles from clay through boulder size. Long after the Illinoian glacier had receded, leaving a gently undulating drift plain, the Wisconsinan glacier approached Christian County. During warm periods huge quantities of meltwater and water-sorted materials, known as outwash, poured over the county eroding the Illinoian deposits and filling the floodplains with permeable outwash. Deposits of wind-blown silt size particles, known as loess, exist throughout the county and are as much as 20 feet deep in the northwest.

The valleys in the northern and northeastern portions of Christian County are not deep enough to provide reservoir sites, but many are available in the remainder of the county. The results of eight feasibility studies follow.

Site 1. A small but fairly deep reservoir could be developed 1 mile north of Mt. Auburn on a tributary of the Sangamon River. No roads nor residences would be involved. The land is either idle or in pasture, and timber is restricted to the dam site area. Access to the site is difficult but existing unimproved roads could be extended to the lake area. Logs of previous borings and

a preliminary field investigation indicate that geologic conditions are favorable. The reservoir area is composed of 5 to 15 feet of loess underlain by about 200 feet of glacial drift, primarily sandy yellowish brown clay till. Depth of alluvium was not determined, but till is expected to occur at shallow depths and provide an excellent foundation. Future test borings would be required to determine the suitability of loess for fill material, but till would be available for the dam core or the entire dam. This site should result in a good small reservoir at a low project cost.

Site 3. A small lake site exists 2 miles northwest of Edinburg on a tributary of the South Fork Sangamon River. Four residences, a school building, and a township road are close to lake level. If a more detailed survey showed that these features would not be disturbed, costs would be normal for this site. One township road crosses over the dam site and would probably be relocated downstream. Cover in the lake area is about half pasture and half timber. The lake would have two main fingers and one smaller finger providing an abundance of shoreline for a lake of this size. A surficial examination and logs of previous borings indicate favorable geologic conditions at this site. The lake area is generally weathered glacial till overlain by a few feet of loess in which the local soils are developed. The valley is V-shaped so that a till foundation should be encountered at shallow depths. This same weathered till should be available in sufficient quantity for construction of an earth dam. This site should result in a small relatively high cost project.

Site 5. A reservoir could be developed 1 mile west of Edinburg on a tributary of the South Fork Sangamon

River. The watershed consists of very gently rolling uplands which slope gradually into the V-shaped valley. Cover in the lake area is about half timber and half pasture. One township road crossing the site could be abandoned. A small subdivision is under construction along the eastern shore of the site. The lake should be a great asset to the subdivision. Oil and coal reserves in this area might be an economic factor worthy of consideration. Geologic conditions appear favorable for construction of a dam in this area since the entire valley consists of glacial till overlain by 5 to 6 feet of weathered loess. An abundance of good quality fill should be available in the vicinity of the dam. This appears to be a good site and should be developed at a moderate project cost.

Site 6. An excellent reservoir site exists about 2 miles northeast of Kincaid on a tributary of the South Fork Sangamon River. It would be necessary to raise or relocate Illinois Route 29 and the Baltimore and Ohio Railroad. In addition, three north-south and two east-west township roads would be inundated. A small church and cemetery would be very close to water level, but further study would be required to determine if any inundation would take place. The fact that the lake would lie within a known area of coal reserves is another economic factor. Cover in the lake area appears to be about one-fourth timber and the remainder under cultivation or in pasture. The watershed exhibits very gently rolling uplands with relief of 10 to 20 feet and a moderately steep-walled valley with a wide flat floodplain. A preliminary geologic investigation indicates that the dam should probably be moved upstream to avoid silt and gravel deposits from the South Fork Sangamon River. The reservoir area consists of about 50 feet of glacial till overlain by 5 to 6 feet of loess. No serious geologic problems are anticipated. A complete program of testing and boring would be required prior to design. An adequate supply of good quality borrow would be available from the nearby till. This site would not be economically justified at the present time.

Site 7. A good topographic site is available 1.5 miles southeast of Kincaid on a southern tributary of the South Fork Sangamon River. Problems which might make this site undesirable are a gasoline pipeline crossing, oil wells near and possibly in the lake area, and abandoned coal mines beneath the dam and reservoir areas. The seriousness of each of these problems could be determined only by a more detailed study. Three township roads would be inundated, and two dwellings would be very close to water level. The watershed has very gently rolling uplands, and the valley contains moderately steep walls with little or no floodplain development. Cover in the lake area consists of pasture with scattered timber. Geologic conditions in the area are favorable. Glacial till as much as 90 feet thick

blankets the region and is overlain by 20 feet of loess on the uplands. The abutments and valley walls are moderately steep and are composed of gravelly silty clay till. An abundance of borrow is available from the nearby till deposits, and some of the weathered loess may prove suitable for the flanks of the dam. This site should make an attractive reservoir at a moderately high project cost.

Site 10. An attractive reservoir site exists on Prairie Fork 2 miles west of Palmer and 3 miles north of Morrisonville. The proposed elevation is an absolute maximum and should be lowered about 5 feet to achieve optimum elevation. The watershed has gently rolling uplands which slope gradually into the V-shaped moderately steep walled valley. Cover in the lake area varies from pasture in the upper reaches to timber near the dam. A township road crossing the site could be abandoned if the northern end were improved for residential access. Three dwellings are close to the lake but should not interfere with the development. Oil production in the uplands bordering the reservoir site and the presence of a mined-out area beneath the dam and reservoir sites should be carefully considered in any plan for development. Logs of previous borings in the area indicate that the unconsolidated material consists of about 90 feet of glacial till overlain by up to 20 feet of loess on the uplands. The abutments and valley walls are a gravelly silty clay till. The depth and nature of the alluvium was not determined, but till should be encountered at shallow depths. The till encountered in the valley walls should be suitable for construction of the earth fill. If no problems are encountered with the abandoned coal mines and active oil wells, project costs should be moderate to low.

Site 11. A long narrow reservoir could be developed on Brush Creek about 1.5 miles southeast of Illinois Route 48 between Palmer and Clarksdale. Two oiled roads cross the site but one could be abandoned and the other raised. Four residences are close to water level, but a detailed survey would be required to determine the degree of interference. Cover in the lake area is generally pasture with a few trees along the creek banks. The watershed exhibits clean tilled, gently rolling uplands which slope gradually into the moderately steep walled valley system. A preliminary geologic investigation and logs of previous borings indicate that conditions are favorable for a water storage structure at this site. Bedrock in the area is overlain by 50 to 100 feet of glacial drift, primarily till, which is overlain by about 6 feet of loess on the higher gentler slopes. The lack of floodplain development suggests the existence of a till foundation at shallow depths. The nearby sandy till and possibly weathered loess deposits would provide an ade-

quate source of borrow. This site should produce a good reservoir at a moderate project cost.

Site 12. An excellent potential reservoir site exists on Bear Creek with the dam site located 1 mile east of Morrisonville. The optimum water elevation is probably several feet lower than the suggested 620 elevation. The topography of the area is typical of the Illinoian glacial plain. The watershed is under cultivation, and the uplands slope gradually into the moderately steep walled

valleys. About 0.5 mile above the dam site the valley forks into two nearly equal portions with the western fork showing a wider floodplain and more gentle side slopes. Cover in the lake area is primarily pasture with a few cultivated patches and very little timber. A more detailed study would be required to determine the full extent of road and residence inundations, but at least three dwellings would be inundated and about six others would be close to water level. Township roads would be

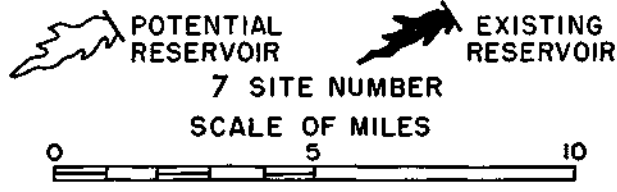
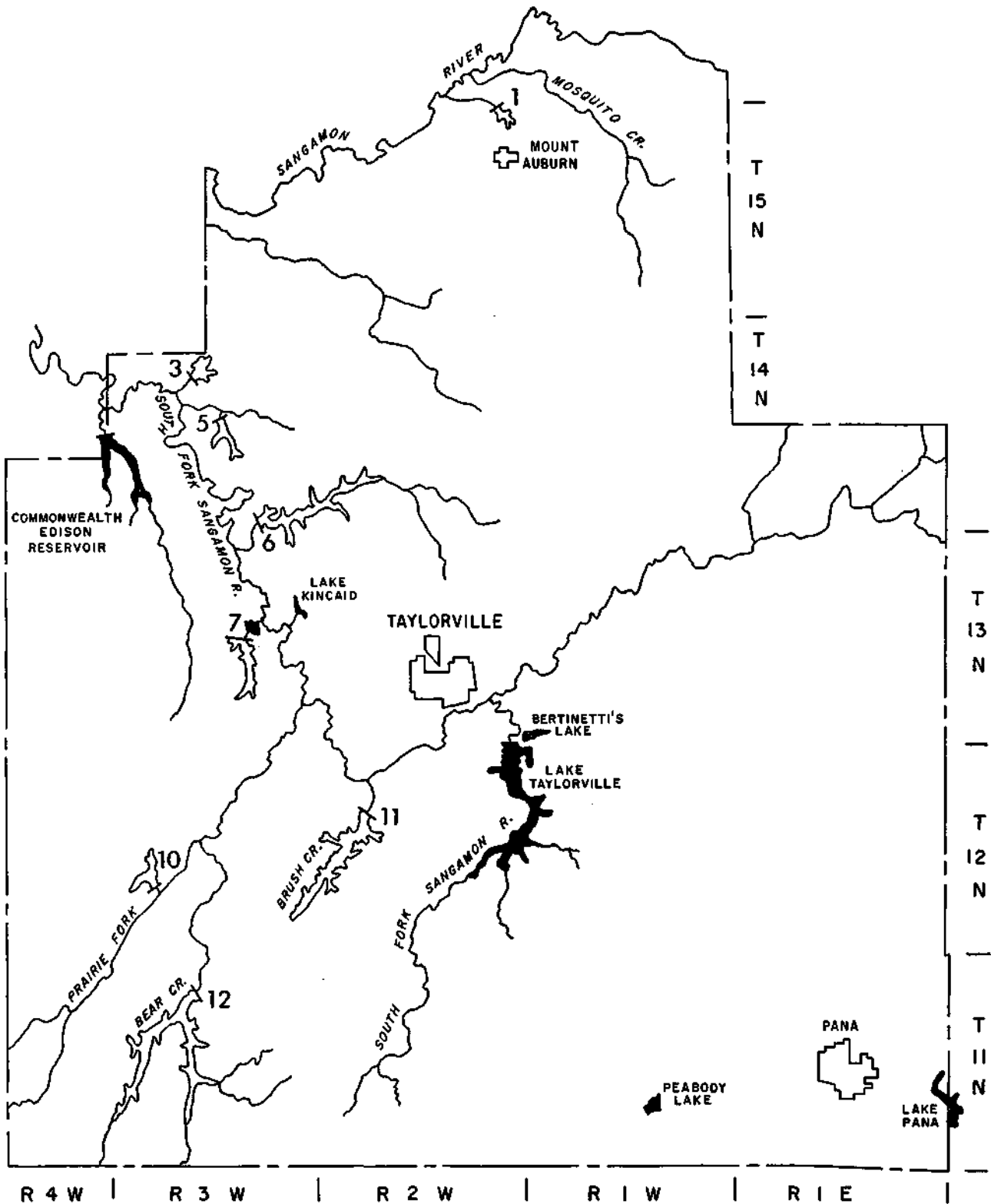
Potential Reservoirs in Christian County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Sangamon River NE 1/4 NW 1/4 1-15N-2W (Mechanicsburg Quad)	600	45	400	100	0.70	0.8	28	400	59	2	0.30	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.1
3	Trib. S. Fk. Sangamon Cr. SE 1/4 9-15N-3W (Taylorville Quad)	580	115	100	33	2.5	1.4	25	700	94	4	1.21	1.1	0.7	0.4	0.4	0.5	0.4	0.2	0.1
5	Trib. S. Fk. Sangamon NE 1/4 SW 1/4 15-14N-3W (Taylorville Quad)	580	102	1,000	300	1.7	1.0	28	550	83	3	0.83	0.7	0.6	0.4	0.3	0.6	0.4	0.1	0.1
6	Trib. S. Fk. Sangamon SE 1/4 SW 1/4 35-14N-3W (Taylorville Quad)	580	525	6,000	2,000	33.8	3.1	34	450	86	12	16.42	8.5	6.7	3.6	3.3	4.3	3.2	1.7	1.4
7	Trib. S. Fk. Sangamon NW 1/4 NW 1/4 23-13N-3W (Taylorville Quad)	600	224	2,700	900	3.8	0.8	36	900	183	8	1.85	1.6	1.6	1.1	0.8	1.5	0.9	0.4	0.4
10	Prairie Fk. NE 1/4 NW 1/4 29-12N-3W (Nokomis Quad)	620	269	2,600	800	3.0	0.6	29	950	144	8	1.46	1.1	1.1	0.9	0.7	1.2	0.8	0.3	0.3
11	Brush Creek SE 1/4 SE 1/4 18-12N-2W (Nokomis Quad)	600	307	2,800	900	10.2	2.0	27	900	130	15	4.95	3.8	2.7	1.4	1.3	1.6	1.3	0.5	0.4
12	Bear Creek NW 1/4 NE 1/4 9-11N-3W (Nokomis Quad)	620	1,165	12,400	4,000	33.1	1.4	32	1,600	231	37	16.08	14.5	10.2	5.9	5.5	7.3	5.5	2.5	2.1

Existing Reservoirs in Christian County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Pana (upper)	18-19-11N-2E 24-11N-1E (Pana Quad)	Pana	6	3,840		25	82	920	300	2.87	
Lake Pana (lower)	19-30-11N-2E 25-11N-1E (Pana Quad)	Pana	8.5	5,440	50	30	142	2,392	780	5.27	1955 survey
Lake Taylorville	36-13N-2W (Taylorville Quad)	Taylorville	125	8,000	39	26	1,286	10,394	3,387	1.56	Completed 1961
Bertinetti's Lake	36-13N-2W 31-13N-1W (Assumption Quad)	Bertinetti	3.1	2,000	33	27	48	1,008	328	6.10	
Bertinetti's Pond	25-13N-2W (Taylorville Quad)	Bertinetti	0.2	140			9				Aerial photos
Peabody Lake	14-13N-3W (Taylorville Quad)	Peabody Coal Co.	4.3	2,800	10	6	35.4				
Meyers Lake	30-13N-1W (Assumption Quad)			3.5	13	10	6.4				
Lake Kincaid	13-13N-3W (Taylorville Quad)	Kincaid	2.0	1,312	36	18	34	272	88	2.55	Data from photo and Water Dept.
Sportsmans Club Lake	25-11N-1E (Pana Quad)	Sps. Cl.	.25	163	23	21	6.6				Average 9' deep
Lusters Lake	17-12N-2W (Nokomis Quad)	Luster-Deal Inc.	.27	175	29	24	10				
Peabody Coal Co. Lake	28-11N-1W (Pana Quad)	John Smith-Thomas	3.0	1,920	18.5	13	60				
Boyd Lake	16-11N-3W (Nokomis Quad)	Truflock & Adcock	.57	368			11.6				Built about 1950

CHRISTIAN COUNTY



inundated to various degrees in nine locations. Logs of previous test borings and a surficial examination indicate that geologic conditions in this area are favorable. The glacial drift, primarily till, ranges in thickness from 50 to 100 feet and is mantled by 5 to 10 feet of loess. The clayey sandy till, known to underlie the lake bed, is

obscured on the abutments by 4 to 6 feet of buff loess and on the floodplain by at least 8 feet of black loess. Material suitable for use as borrow is readily available from the underlying till and possibly weathered loess deposits. The number of relocations and land costs might make this a moderately high cost project.

DEWITT COUNTY

The bedrock surface in DeWitt County consists entirely of Pennsylvanian age strata. The Pennsylvanian rocks are most often shale and sometimes contain limestone up to 25 feet thick, coal seams, and locally developed sandstones. A major feature of this hidden surface is the Mahomet bedrock valley which crosses the county from southeast to northwest.

The bedrock surface and valley are covered by a deep layer of glacial drift, known as till. The most common form of drift consists of an unsorted mixture of particles from clay through boulder size. The entire county was covered by ice during the Kansan and Illinoian glacial periods. The Wisconsinan was the last ice sheet to enter the county and covered all but the southwest corner. The end of the Wisconsinan advance is marked by a striking surface feature known as the Shelbyville moraine. Meltwaters from the Wisconsinan deposited deep stratified layers of silt, sand, and gravel known as outwash, over the lower lying Illinoian till. After the ice sheets had disappeared, the county was covered by 3 to 6 feet of fine wind-blown material known as loess.

The Salt Creek and its tributaries drain about three-fourths of the county from northeast to southwest. The northwestern corner is drained by Kickapoo Creek and the southeastern corner by Friends Creek, a tributary of the Sangamon River.

Many of the streams in DeWitt County are too shallow

for reservoir development; however, good potential sites do exist. The results of six feasibility studies follow.

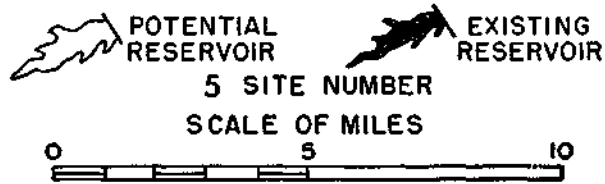
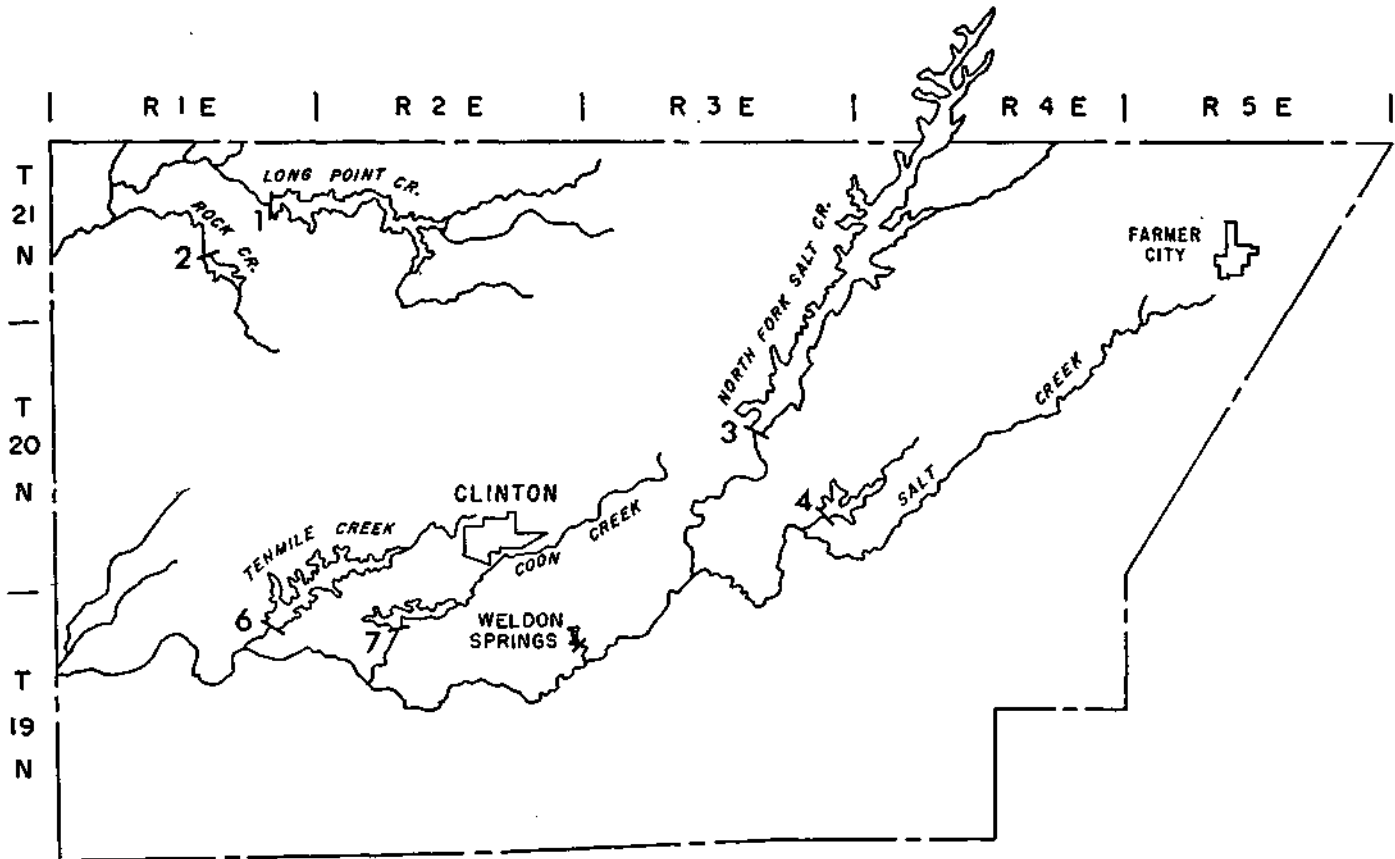
Site 1. A potential dam site exists on Long Point Creek about 4 miles northwest of Wapella. At the proposed elevation the water surface would extend nearly 4 miles east to U. S. Route 51. The watershed reaches northeast into McLean County and contains rolling uplands breaking sharply into steep valley slopes bordering a broad nearly flat floodplain. About one-third of the reservoir area is in timber, and the remainder receives some degree of agricultural use. Of the four north-south roads crossing the site, two could be abandoned, one raised, and one relocated. Existing east-west roads would provide the basis for an excellent around-the-lake road system. No residences would be involved, but local utilities would be inundated by the development. From a surficial examination the geologic conditions appear favorable. The abutments are composed of silty sandy glacial till overlain by loess. The alluvium in the floodplain is of undetermined depth and unsuitable for borrow. Sufficient good quality borrow is available on either upstream abutment. This site could make a good moderate cost project.

Site 2. A small lake could be developed on Rock Creek 2 miles east of Waynesville. The watershed has rolling

Potential Reservoirs in DeWitt County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Long Point Creek SW ¼ NW ¼ 24-21N-1E (LeRoy and McLean Quads)	700	646	9,000	2,900	41.4	1.8	42	1,050	291	18	14.43	17.8	9.2	7.2	6.6	6.9	5.5	4.1	4.0
2	Rock Creek NW ¼ SE ¼ 27-21N-1E (Kenney Quad)	720	96	1,000	300	6.1	2.3	32	750	140	3	2.13	1.4	1.2	0.9	0.8	0.7	0.6	0.5	0.4
3	N. Flk. Salt Creek Ctr. SE ¼ 15-20N-3E (LeRoy and Maroa Quads)	730	2,682	50,000	16,300	118.4	1.2	56	1,000	436	86	53.4	52.0	42.1	29.1	27.7	34.5	27.4	18.0	18.0
4	Trib. Salt Creek Ctr. SW ¼ 25-20N-3E (Maroa Quad)	710	179	2,200	700	4.8	1.1	36	650	137	6	2.17	2.0	1.7	1.2	1.1	1.4	1.1	0.8	0.6
6	Tennile Creek SW ¼ SE ¼ 2-19N-1E (Kenney Quad)	680	742	12,600	4,100	46.4	1.8	51	1,250	459	24	20.94	17.2	13.1	9.4	8.7	10.0	8.0	5.8	5.4
7	Coon Creek SW ¼ SE ¼ 5-19N-2E (Kenney and Maroa Quads)	680	147	1,500	500	16.9	5.6	31	500	93	7	7.63	2.8	2.4	1.9	1.7	1.5	1.3	1.1	0.9

DEWITT COUNTY



Existing Reservoirs in DeWitt County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)	(ft)	(ft)		(ac-ft)	(mg)	(in)	
Weldon Springs Lake	12-19N-2E (Maroa Quad)	State of Ill.	1.16	745		29	28				Ill. Div. of Fisheries
Hallsville Lake	28-26N-1E (Kenney Quad)	Hallsville Nursing Home	1.41	900	20	12	5				Ill. Div. of Fisheries
Clyde Vance Lake	19-21N-4E (LeRoy Quad)	Clyde Vance	3.50	2,240	25	15	8				Soil Cons. Serv.
Perkinson Lake	14-19N-2E (Maroa Quad)	C. D. Perkinson	0.10	65	22	12-15	5				Soil Cons. Serv.

uplands and a moderately well developed drainage system. The valley in the vicinity of the lake has steep walls bordering a narrow flat floodplain. Cover in the lake area is pasture and some row crops. No residences would be involved but a few outbuildings would be lost near the dam. The lake would be very well serviced by county and township roads. One gravel road could be raised or abandoned. Geologic conditions appear favorable although the possibility of a continuous sand layer

in the channel bottom might necessitate blanketing. The abutments consist of clayey silty pebbly glacial till which is excellent borrow material. This site should make a good low cost project.

Site 3. A large potential reservoir exists on the North Fork Salt Creek. The dam would be located 3 miles west of DeWitt, and the water surface would extend 10 miles northeast to a point just south of LeRoy. Several resi-

dences would be close to lake level, but none apparently would be inundated. U. S. Eoute 136 across the upper end of the site would require raising. One other crossing would probably be required near an existing two-lane blacktop road 3 miles above the dam. Several gravel roads would be inundated by the main branch and its many tributaries. These tributaries would be an attractive feature of the lake since they increase the shoreline in wooded areas that would be ideal for recreational development. Roughly three-fourths of the lake area is free from timber and under varying degrees of agricultural use. One active oil well was seen near lake level and more may be present in the general area. Geologic conditions appear favorable although a complete program of test borings would be required to determine geologic feasibility. Several sand and gravel pits exist in the lake area but are believed to be local in nature and may be underlain by till. The abutments are probably compact clayey silty glacial till which is exposed in road cuts near the dam site. An adequate supply of suitable material for an earth fill is available in the nearby glacial till. This site should develop at a moderately high project cost.

Site 4. A good small reservoir site exists on a tributary of Salt Creek 2 miles southwest of DeWitt. The watershed exhibits gently rolling cultivated uplands with moderately steep valley walls bordering a narrow flat floodplain. The village of DeWitt lies within the watershed and could create a pollution problem. No roads nor residences would be involved in the development. Cover in the lake area consists of pasture with scattered timber. A surficial geologic examination indicates that conditions are favorable. The abutments are moderately steep and composed of light yellowish brown silty clayey glacial till. Sandy outwash deposits may overlie the lower portions of the abutments. The depth and nature of alluvium in the floodplain was not determined. Sufficient borrow material should be available from the nearby upland till deposits. This site should develop at a very low project cost.

Site 6. An attractive reservoir site exists on Tenmile Creek with the dam site 5 miles west and 2 miles south of Clinton. The water surface would extend northeast to within 2 miles of Clinton. Illinois Route 10 parallels the northern shore of the lake, and U. S. Route 54 the southern shore providing excellent access to the area. Three gravel roads crossing the site and two residences would be inundated. Cover consists of pasture and row crops on the wide portions of the floodplain and timber on the banks and valley walls. Excellent timbered areas for recreational development surround most of the lake. Geologic conditions at the site appear favorable. Future test borings would be required to investigate the lateral extent of gravel terraces along the floodplain and the depth and nature of the alluvium. Deep sands and gravels are known to underlie this area, but the overlying clay and till would stop any leakage into the deeper system. The abutments are moderately steep and are composed of grayish brown compact glacial till. Material of this same nature is available throughout the uplands and is suitable for construction of an earth dam. Although project costs would be moderately high, the proximity of this site to Clinton and the excellent access to the area tend to make this site desirable.

Site 7. A small reservoir site is available on Coon Creek southwest of Clinton. The Clinton sewage treatment plant is located on this branch and the effluent would create a pollution problem if it could not be controlled or diverted. Assuming that the sewage effluent could be conveyed below the dam, this would make a very desirable lake close to Clinton, at a moderate project cost. No roads nor residences would be involved in the development, and cover in the site is nearly all timber. A surficial geologic investigation proved the site feasible. The abutments are composed of a yellowish brown glacial till which is excellent as a foundation or borrow material. Future borings would be required to locate the best source of borrow, to determine the depth and nature of valley alluvium, and to determine the lateral extent of sand and gravel deposits in this area.

FORD COUNTY

Ford County was completely covered by the Kansan, Illinoian, and Wisconsinan glaciers. Since the Wisconsinan, the county has not eroded to any great extent. Although the maximum difference in elevation is only 135 feet, the Bloomington morainic system across the southern part of the county and the Marseilles system in the extreme north are evident. Glacial drift ranges from 150 to 200 feet in thickness with the Wisconsinan material consisting of the top 50 to 100 feet. The most common form of drift is known as till and consists of an unsorted mixture of particles from clay to boulder size.

Although most of the hidden bedrock surface in Ford County is of Pennsylvanian age, the LaSalle anticline brings Devonian and Silurian age formations to the surface in the vicinity of Gibson City. The Pennsylvanian formations are principally shale containing occasional coal seams and possibly thin limestone or sandstone. The older localized formations would consist of limestone. Topographical features on the bedrock surface include the Kempton and Chatsworth bedrock valleys across the panhandle and the Mahomet bedrock valley across the southeastern corner of the county.

The central portion of the county was originally quite swampy, but has been extensively drained and is now quite productive. Drainage is carried to the Illinois River by the Sangamon and North Fork Vermilion Rivers, and by Mazon and Drummer Creeks. Much of the southern part of the county drains into the Wabash River through the East and West Branches of the Middle Fork of the Vermilion River.

In general the streams in Ford County are too shallow for reservoir development. The results of three feasibility studies follow.

Site 2. A dam site exists on a branch of the North Fork Vermilion River 5 miles west and 1 mile north of Thawville on the backslope of the Chatsworth moraine. The topography is hummocky and gently rolling. The upper reaches of the reservoir area are in pasture, and the main pool area is under cultivation. An east-west gravel road would have to be abandoned and a north-south oiled road could be raised. New access roads would have to be created for two farm residences. The stream is entrenched 6 to 10 feet in a very narrow floodplain and flows on a bed of clay with a few pebbles. The abutments appear to be clay and clayey till. Thickness of till over the sand and gravel deposits should be verified by an adequate program of test boring. This site is considered

feasible geologically. Construction material for an earth dam is available nearby, and from the viewpoint of foundation stability and relative impermeability the dam site is satisfactory. Except for fairly shallow water around the edges there are no particular problems involved in developing this site, and it should result in a normal cost project.

Site 3. A short dendritic tributary drains an end moraine and has a dam site located 2 miles east and 1.5 miles north of Roberts. The topography is gently rolling, and thick glacial deposits mantle the bedrock surface. The upper reaches of the reservoir area are in timber, and the remainder is in pasture and row crops. A one-lane gravel road would provide excellent construction access but would have to be abandoned upon completion of the reservoir. Two farm residence access roads would have to be relocated. The stream is entrenched 6 to 10 feet on a narrow floodplain. The abutments are moderately steep and consist of gray to buff clay till. The top soil is 2 feet deep, but the sequence and character of till beneath the dam site must be determined. An adequate quantity of suitable fill material is available for an earth dam. The soil and geologic materials are generally satisfactory for dam construction in respect to foundation stability and relative impermeability. The site is considered feasible geologically, subject to verification by an adequate program of test borings and materials testing. This site should result in a moderately low cost project.

Site 4. A dam site exists on a tributary of Spring Creek 3 miles west and 2 miles north of Loda. The topography is gently rolling and hummocky with a medium gray pebbly soil. The reservoir area cover consists of pasture with scattered timber. A one-lane gravel road would have to be abandoned, another raised, and access provided for two farm residences. The stream is entrenched 4 to 6 feet in a very narrow floodplain and has a bed consisting of silty sandy medium- to dark-gray clay. The abutments slope very gently to the uplands and consist of clays and clayey till. The clayey tills would provide an adequate quantity of suitable material for the construction of an earth dam. The dam site is considered probably feasible subject to verification by an adequate program of test borings and materials testing. This site would make a poor reservoir at a near normal cost.

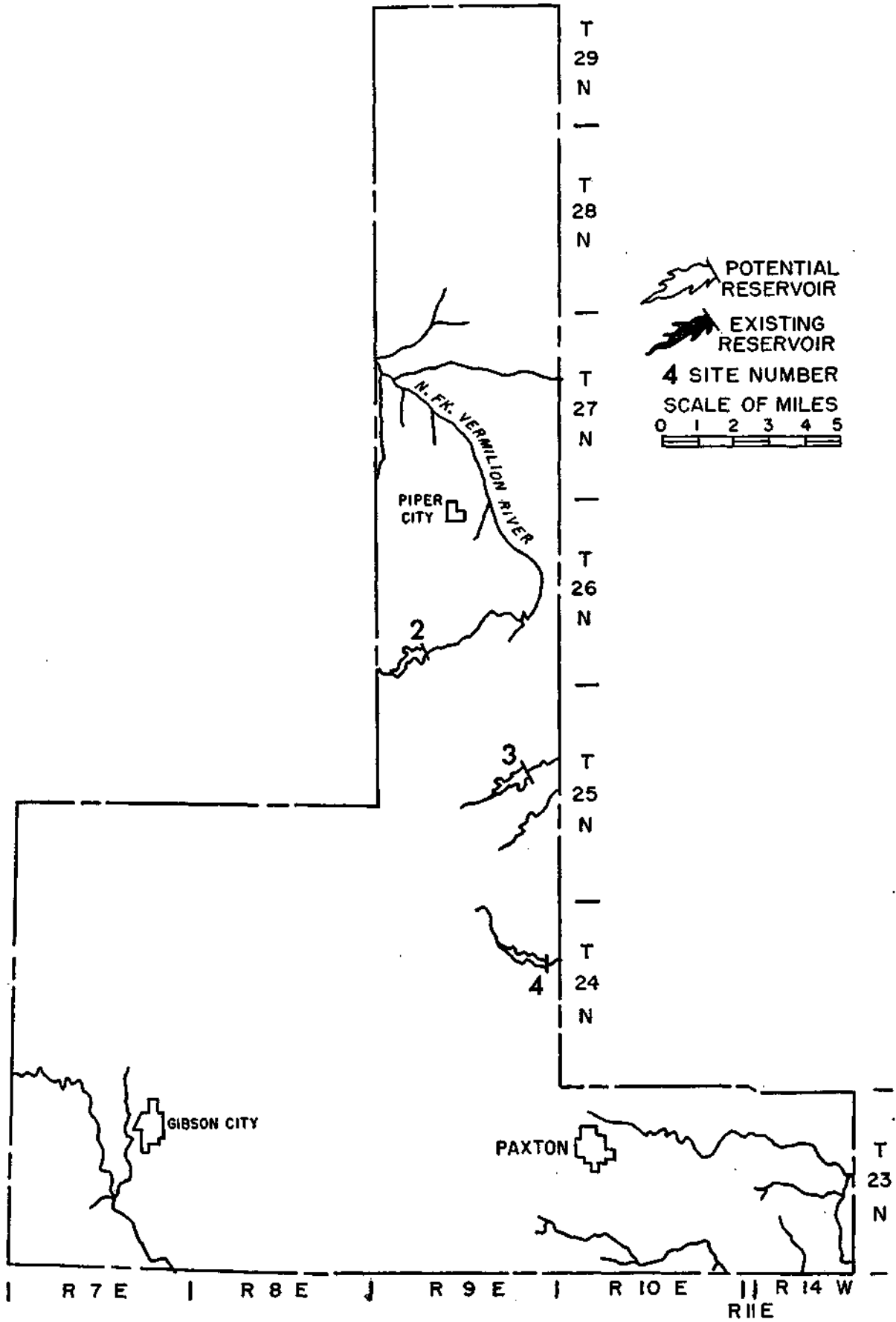
Potential Reservoirs in Ford County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	N. Pk. Vermilion River SW ¼ SE ¼ 29-26N-9E (Buckley Quad)	750	115	800	300	4.4	2.4	22	700	83	4	1.81	1.1	0.9	0.6	0.6	0.4	0.3	0.3	0.2
3	Trib. Spring Creek SW ¼ SE ¼ 11-25N-9E (Buckley Quad)	720	141	1,000	300	4.2	2.3	21	1,050	118	5	2.02	1.5	1.0	0.8	0.7	0.7	0.6	0.5	0.3
4	Trib. Spring Creek NW ¼ NE ¼ 13-24N-9E (Buckley Quad)	750	141	800	300	9.2	5.8	20	850	88	6	4.42	1.5	1.2	1.0	0.9	0.7	0.5	0.3	0.3

Existing Reservoirs in Ford County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
	15-29N-9E (Piper City Quad)	Ida & Leslie Cook	0.16	100		3-5	6.5				
Lake Sibley	26-25N-7E (Sibley Quad)	Sibley Farm Corp.	.08	50	4	4	18.4				Ill. Div. of Fisheries
Williams Gravel Pit	24-23N-7E (Gibson City Quad)	Williams Const. Co.				15	13				
Utterback Gravel Pits	33-23N-8E (Gibson City Quad)	Lela Utterback				12	12				
Thomas Gravel Pit	14-23N-9E (Paxton Quad)	Howard Thomas				15	9				
Thomas Gravel Pit	35-23N-10E (Paxton Quad)	Howard Thomas				30-40	5.5				
M. Smith Gravel Pit	24-23N-7E (Gibson City Quad)	Maurice Smith				15-20	8				
Sibley Gravel Pit	5-24N-7E (Sibley Quad)	Sibley Farm Corp.				12	10				

FORD COUNTY



FULTON COUNTY

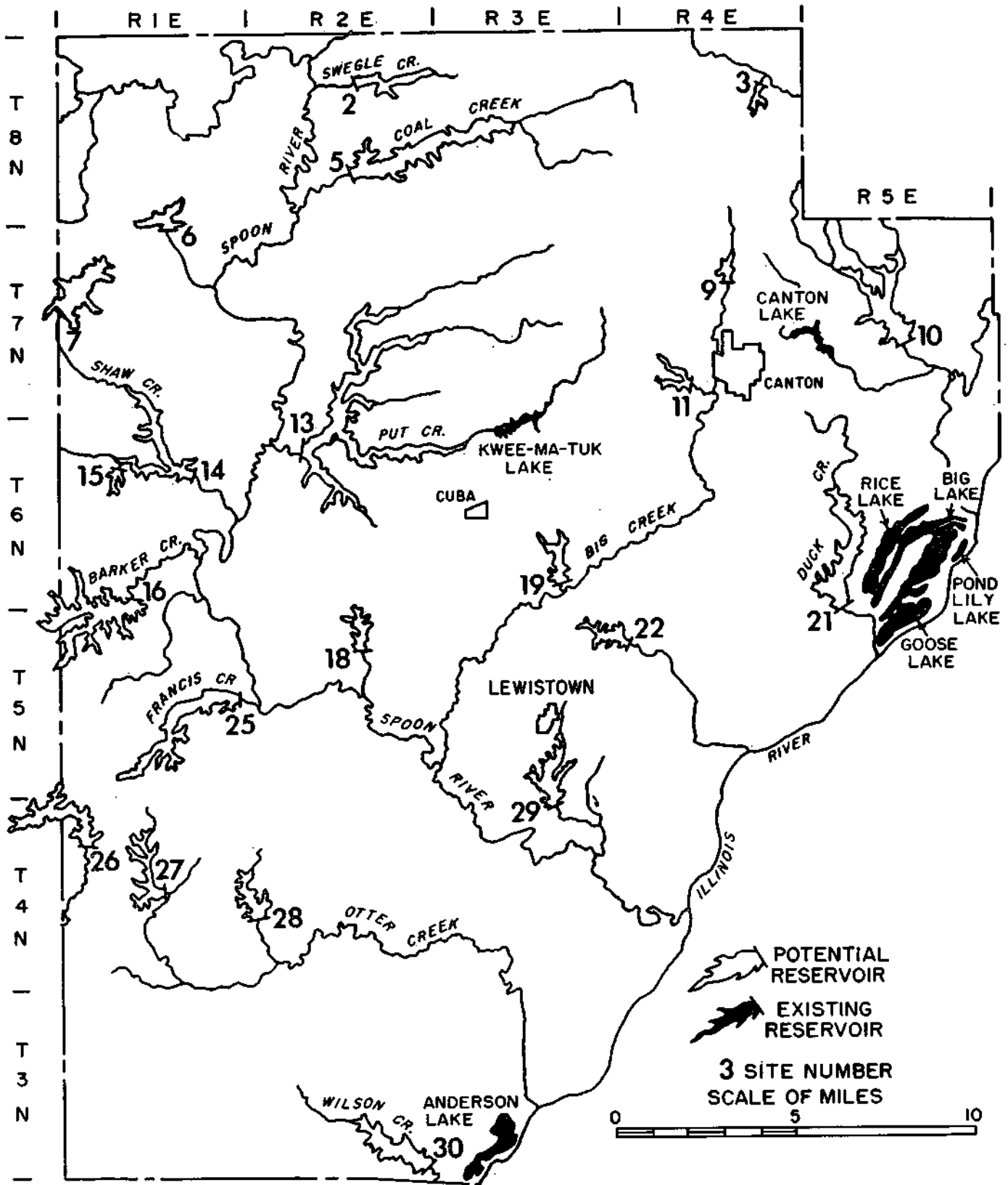
Although earlier glaciers moved across Fulton County, the Illinoian was the most recent and had the greatest effect on the present topography. The glacier rubbed down the bedrock ridges and filled the valleys with glacial debris known as drift. As the ice melted and receded the glacial drift was deposited in a rolling plain over the county. The most common form of drift is known as till and consists of an unsorted mixture of particles from

clay through boulder size. More permeable water-washed material, known as outwash, was often deposited in the floodplains and at the base of ridges in the drift plain. During cold periods when the water flows were reduced, the wind picked up sediments from the barren floodplains and deposited them on the uplands as loess. These deposits range in depth from about 5 feet in the north-west to over 50 feet along the Illinois River Valley.

Potential Reservoirs in Fulton County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	Sweagle Creek SW ¼ NE ¼ 10-8N-2E (Avon Quad)	560	280	2,800	900	15.5	2.4	30	700	124	9	5.93	4.5	3.3	2.5	2.3	2.5	1.9	1.5	1.3
3	Trib. Little's Creek SE ¼ SE ¼ 11-8N-4E (Canton Quad)	720	75	600	200	2.9	2.0	25	650	91	3	1.11	0.9	0.6	0.5	0.4	0.4	0.3	0.3	0.2
5	Coal Creek SE ¼ NW ¼ 27-8N-2E (Avon Quad)	600	1,100	29,300	9,500	32.1	0.5	80	1,100	868	24	12.29	11.1	11.1	11.1	11.1	11.6	10.0	9.1	8.4
6	Aylesworth Branch NE ¼ NW ¼ 3-7N-1E (Avon Quad)	600	130	1,600	500	3.9	1.0	38	700	155	4	1.52	1.5	1.2	1.1	1.0	1.2	0.8	0.6	0.5
7	Trib. Shaw Creek NW ¼ SW ¼ 18-7N-1E (Avon Quad)	610	406	5,400	1,800	7.4	0.6	40	600	152	20	2.88	2.4	2.4	2.4	2.4	2.6	1.9	1.8	1.6
9	Big Creek N ½ 15-7N-4E (Canton Quad)	680	115	1,200	400	3.0	1.0	32	650	116	4	1.15	1.1	0.9	0.8	0.7	0.8	0.5	0.4	0.3
10	Middle Branch SW ¼ SW ¼ 22-7N-5E (Glasford Quad)	560	704	14,080		27.4	6.8	60	900	334	17	10.49	2.8	2.6	1.7	1.7	0.6	0.3	0.2	0.1
11	Trib. Big Creek E ½ NW ¼ 33-7N-4E (Canton Quad)	640	190	1,900	600	4.6	1.0	30	700	122	6	1.76	1.6	1.4	1.2	1.1	1.2	0.9	0.6	0.6
13	Put Creek NW ¼ NE ¼ 8-6N-2E (Avon Quad)	540	2,110	35,200	11,500	91.2	1.1	50	1,850	665	39	35.44	34.6	28.3	25.2	23.8	28.6	19.3	15.2	13.9
14	Shaw Creek SW ¼ SW ¼ 11-6N-1E (Avon Quad)	540	755	9,600	3,100	37.5	1.7	38	800	197	16	14.57	13.5	9.7	8.0	7.5	8.2	6.5	4.7	4.3
15	Trib. S. Fk. Shaw Creek NE ¼ SE ¼ 8-6N-1E (Avon Quad)	580	74	1,000	300	1.5	0.7	40	400	106	3	0.58	0.5	0.5	0.5	0.4	0.5	0.4	0.3	0.2
16	Barker Creek NW ¼ SW ¼ 33-6N-1E (Vermont Quad)	600	415	10,100	3,300	16.0	0.7	73	800	477	26	6.22	6.0	5.9	5.5	5.3	6.0	4.3	3.9	3.4
18	Muddy Creek SE ¼ NW ¼ 10-5N-2E (Vermont Quad)	560	175	4,000	1,300	3.7	0.4	68	800	467	8	1.44	1.3	1.3	1.3	1.3	1.3	1.2	1.1	1.0
19	Slug Run NW ¼ NW ¼ 35-6N-3E (Havana Quad)	560	230	3,500	1,100	7.9	1.0	45	750	239	11	3.07	2.9	2.5	2.2	2.1	2.5	1.7	1.3	1.2
21	Duck Creek SW ¼ NE ¼ 5-5N-5E (Manito Quad)	620	621	14,500	4,700	17.9	0.5	70	1,150	781	16	6.95	6.3	6.3	6.3	6.3	6.5	5.3	4.8	4.5
22	Rattlesnake Branch SW ¼ NW ¼ 7-5N-4E (Havana Quad)	560	144	2,400	800	3.1	0.6	50	450	158	6	1.20	1.1	1.1	1.1	1.1	1.1	0.9	0.8	0.7
25	Francis Creek Ct. S ½ 13-5N-1E (Vermont Quad)	540	395	8,200	2,700	11.0	0.6	62	1,100	565	24	4.27	4.1	4.0	3.9	3.9	4.0	3.1	2.8	2.6
26	Sugar Creek NW ¼ SE ¼ 7-4N-1E (Vermont Quad)	640	465	7,100	2,300	11.4	0.7	46	850	274	14	4.43	4.2	4.1	3.8	3.6	4.1	2.9	2.6	2.1
27	Otter Creek NW ¼ NW ¼ 22-4N-1E (Vermont Quad)	620	422	6,000	2,000	7.2	0.5	43	1,000	284	16	2.8	2.3	2.3	2.3	2.3	2.5	2.0	1.8	1.7
28	Jake Creek SW ¼ SW ¼ 19-4N-2E (Vermont Quad)	580	150	2,400	800	4.3	0.8	48	650	223	8	1.67	1.6	1.5	1.3	1.3	1.5	1.0	0.8	0.7
29	East Creek NW ¼ SE ¼ 3-4N-3E (Havana Quad)	520	285	3,800	1,200	7.3	0.8	40	650	173	11	2.84	2.7	2.5	2.2	2.0	2.5	1.7	1.3	1.2
30	Wilson Creek Ct. 36-3N-2E (Chandlerville Quad)	520	285	5,300	1,700	11.7	0.9	56	800	326	9	4.55	4.4	3.9	3.5	3.3	3.9	2.7	2.2	2.0

FULTON COUNTY



The bedrock surface in Fulton County is of Pennsylvanian age and consists predominantly of shales, although thin limestone, coal seams, and sandstone also are common. Near the Illinois River Valley the Pennsylvanian rocks are eroded and the underlying Mississippian strata are exposed. These older formations are predominantly limestone. The principal topographic feature on the bedrock surface is the Spoon River bedrock valley which coincides very nearly with the present course of the Spoon River. Bedrock exposures are common along the bluffs of the Illinois and Spoon Rivers, and coal has been mined in many areas.

Topographic and geologic conditions in Fulton County are favorable for reservoir development. The results of 22 feasibility studies follow.

Site 2. A potential reservoir site exists on Swegle Creek, a tributary of the Spoon River. The dam site is

located 1.25 miles south and 0.25 mile east of London Mills. The entire reservoir area is in pasture and scattered timber. Two north-south gravel roads cross the reservoir area; one road would have to be raised and the other abandoned. The stream bed consists of sand and some silt. The floodplain, largely of sand, is 300 feet wide. The valley walls have moderate to steep slopes and consist of tan till at least 30 feet thick overlain by tan loess. Widely spread deposits of sand are found in the western part of section 10. Deposits of sand at the dam site could permit excessive leakage from the reservoir. Material suitable for the construction of an earth dam is available. This site is considered questionably feasible, subject to verification by an adequate program of test borings. It should produce a normal cost project.

Site 3. A potential reservoir site exists on a tributary of Littlers Creek. The dam site is located 0.75 mile south

Existing Reservoirs in Fulton County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
North Res.	15-3N-1E (Beardstown Quad)	Astoria	0.46	300	28	12	10.6	55	18	2.23	Badly silted
South Res.	36-3N-1E 1-2N-1E (Beardstown Quad)	Church of Brethren Camp of Emanuel	0.70	450	35	30	46.0	675	220	18.07	
Anderson Lake	28-29-31-32-33-3N-3E (Chandlerville Quad)	State of Ill.			6	2-5	1,396				Ill. Div. of Fisheries; overflow from Ill. River
Avon Country Club Res.	20-8N-1E (Avon Quad)	CB&Q R.R.	2.76	1,764	20	12	21.0	21	6.86	0.14	Silted
Van Winkle Lake	33-34-7N-4E (Canton Quad)	D. C. Pickett	4.97	3,180			14.7	48	15.6	0.18	Watershed being stripped
Canton Lake	19-30-7N-5E 24-7N-4E (Glasford Quad)	Canton	15.2	9,728		30	230	3,541	1,154.0	4.37	
Rice Lake	22-28-32-33-6N-5E (Manito Quad)	State of Ill.					1,206.3				Overflow from Ill. River
Miserable Lake	22-27-28-33-6N-5E (Manito Quad)						145				Overflow from Ill. River
Slim Lake	23-6N-5E (Manito Quad)										Overflow from Ill. River
Pond Lily Lake	26-35-6N-5E (Manito Quad)						65				Overflow from Ill. River
Big Lake	26-34-6N-5E 4-5N-5E (Manito Quad)						1,147.5				Overflow from Ill. River
Goose Lake	3-4-9-5N-5E (Manito Quad)						630				Overflow from Ill. River
Lost Lake	35-6N-5E 2-5N-5E (Manito Quad)						46.8				Overflow from Ill. River
Route 136 Borrow Pit	29-30-4N-4E (Havana Quad)						49.0				Overflow from Ill. River
Keystone Anglers Cb.	(Canton Quad)	Peabody Coal Co.					8.0				Strip mine pit near Fairview; seepage fed
Hiram Walker Rod & Gun Cb.	(Canton Quad)	Peabody Coal Co.					30.0				Near Middlegrove; seepage fed
National Lake	(Canton Quad)	Peabody Coal Co.					30.0				Near Middlegrove; seepage fed
Tipple Lake	(Vermont Quad)	Sentry Royalty Co.	0.44	280	30	20	16.0				Near Summit
Lets Kech U Wan Lake Club	(Havana Quad)	Oscar Linn					22.7				Near Liverpool; seepage fed
Kwee-Ma-Tuk Hills	(Canton Quad)	Kwee-Ma-Tuk C. Cb.				27	587.9				Near Flatt; several strip mine lakes
Tipple Lake	4-3N-1E (Vermont Quad)	Ayshire Colliery	1.25	800	30	25	20				Built in 1962
Sweeney's Pond	26-7N-1E (Avon Quad)	D. K. Sweeney	0.34	216	29	20	7.5				
Boy Scout Lake	6-8N-2E (Avon Quad)	Creve Coeur Council (BSA)	1.14	732	33	24	16				Built in fall 1963

of Farmington. The reservoir area is in pasture and scattered timber. There are no man-made obstructions in the reservoir area. The stream bed consists of sand and silt with some rock fragments up to moderate size. The channel is about 35 feet wide in an alluvial plain consisting largely of silt. The west valley wall has a steep slope and the east wall has a moderate slope, both consisting of glacial till overlain by loess. Material suitable for the construction of an earth dam is available. The site is probably feasible and should make a moderately low cost project.

Site 5. A potential reservoir site exists on Cole Creek a tributary of Spoon River. The dam site is located 2 miles east and 1.75 miles north of Ellisville. The east-west attitude of this site would cause the inundation of three north-south gravel roads and a branch of the Chicago, Burlington, and Quincy Railroad. Access to the site would be available by north-south roads to the east and west of the reservoir area. A new gravel road passes within 0.25 mile of the dam and Illinois Route 97 passes within 0.25 mile of the headwaters. The stream bed and basal portion of the alluvial plain consist of sand, gravel, and minor amounts of stone chips, probably derived from local bedrock. The upper portion of the alluvial plain is largely silt, some of which is dark with wash from carbonaceous beds disturbed by former coal mining operations higher on the slopes. Both valley walls have moderate slopes. The south wall has been extensively prospected and probably mined for coal. Exposures of clay, silty clay, sandstone, and carbonaceous beds of Pennsylvanian age are prevalent. Less than 0.5 mile north of Cole Creek there is an active sand and gravel pit with a 90-foot vertical face. Some overburden in the form of shale has been dumped at the dam site, but it does not appear that any digging was done there. Suitable material is available for the construction of an earth dam. The old mines may serve as avenues for excessive leakage from the reservoir, and the site may have some of the nearby sand and gravel deposit which would also be a source of leakage. This site is considered questionably feasible, subject to a thorough investigation by an adequate program of test borings. This site would make a fair large reservoir at a high project cost.

Site 6. A potential reservoir site exists on Aylesworth Branch, a tributary of Spoon River. The dam site is located 3 miles east and 2.5 miles south of Avon. The reservoir area has scattered to heavy timber and is generally used for pasture. One gravel road crossing the site could be raised. The stream bed consists of sand, silt, and some clay. The alluvial plain is about 250 feet wide and consists of silt containing scattered pebbles and a few larger rock fragments. The valley walls have moderately steep slopes and consist of glacial till overlain by loess. No bedrock is exposed at the dam site. Mate-

rial suitable for the construction of an earth dam is available. The dam site is probably feasible and should result in a fair reservoir at a normal project cost.

Site 7. A potential reservoir site exists on a tributary of Shaw Creek. The dam site is located 1 mile east and 2 miles south of Prairie City. The reservoir area is primarily under clean tilled cultivation. There are no residences nor other obstructions in the reservoir area. One gravel road crossing the reservoir area could be raised or relocated. The channel is 4 feet wide in a floodplain of silt. The valley walls have very gentle slopes and are composed of tan till overlain by loess. This site is considered feasible and should result in a normal cost project.

Site 9. A potential reservoir exists on Big Creek, a tributary of Spoon River. The dam site is located 2.5 miles north of Canton and 2 miles south of Norris. The reservoir area is half pasture and half timber. A housing development near the right abutment should not interfere with this project. The stream bed is sand and silt. The channel is about 8 feet deep in a narrow alluvial plain composed of silt. The valley walls have moderate slopes and consist of a few feet of bedrock of Pennsylvanian age at the base overlain by till containing scattered gravels overlain by loess which appears to be about 20 feet thick. Material suitable for the construction of an earth dam is available. This site is considered feasible and should result in a good small reservoir at a normal project cost.

Site 10. A potential reservoir site exists on Middle Branch, a tributary of Copperas Creek. The reservoir area is in fairly high agricultural development. One farm home with outbuildings and one house trailer with farm outbuildings would be inundated. A one-lane gravel township highway crossing the upper third of the reservoir area could be abandoned. A two-lane gravel county highway crossing the lower third of the reservoir area could be relocated over the top of the structure. No other known obstructions exist. The channel is about 60 feet wide and 10 feet deep in an alluvial plain composed primarily of silt containing lenses of gravel and a few glacial boulders near its base. The valley walls consist mainly of tan glacial till containing scattered gravel, although rock formations of Pennsylvanian age outcrop low along the east wall and may make up part of the wall elsewhere. The west valley slope is irregular because of local landslides. Material suitable for the construction of an earth dam is available. The site is considered feasible, and should develop at a moderately high project cost.

Site 11. A potential reservoir site exists on a tributary of Big Creek, which is a tributary of Spoon River, located

1.5 miles west of Canton. Most of the reservoir area is in brush and timber. No roads nor residences would be inundated, but Illinois Route 9 and one residence would be close to water level. The stream bed is very silty and contains a considerable amount of sand and clay. The valley walls are relatively steep up to about 25 feet above the stream bed. A change to a more gentle slope marks the contact between the Francis Creek sandstone and Pennsylvanian bedrock. Glacial till material is available for dam construction. An unusual factor is that the proposed dam site is shallowly flooded by an existing lake. The site is considered probably feasible, and should make a normal cost project.

Site 13. A potential reservoir site exists on Put Creek, a tributary of the Spoon River, 3.5 miles north of Smithfield, and 5 miles east and 1.5 miles north of Marietta. The reservoir area is highly developed for agricultural purposes. There are several gravel roads crossing the site, and one new two-lane gravel highway across the main body of the reservoir would have to be relocated. Backwater onto Illinois Route 9 could be a problem. About seven residences would have to be acquired. The stream bed is very sandy. The channel is about 70 feet wide and 10 feet deep in an alluvial plain consisting entirely of sand. The valley walls have gentle to moderate slopes and consist of tan and reddish till overlain by loess. Material suitable for the construction of an earth dam is available. Because of the sand in the valley floor and stream bed, which is known to be part of a widespread sand deposit through which excessive leakage would probably occur, the site is considered not feasible unless an impervious core wall can cut off leakage underneath the structure. This site should result in a high project cost.

Site 14. A potential reservoir site exists on Shaw Creek, a tributary of Spoon River, 1.5 miles east and 0.75 mile north of Marietta. Most of the floodplain in the reservoir area is under cultivation with the dendritic drainage area in pasture. About half of the valley walls are in mixed timber. Two two-lane gravel roads crossing the reservoir area would probably be abandoned, and another road raised. Two farm residences would have to be acquired. The channel is about 50 feet wide and 11 feet deep. The stream bed contains fragments of Pennsylvanian sandstone, siltstone, and shale. The floodplain consists primarily of alluvial silt with some large boulders of Septarian limestone derived from strata some 38 feet above the stream bed. The bedrock formations that make up the lower parts of the valley walls include one or more coal beds that in past years have been exploited by many local drift mines. The bedrock is overlain by glacial till mantled with loessial silt. Material suitable for the construction of an earth dam is available. This site is considered questionable because

the old mines along the valley walls may provide avenues of excessive leakage from the reservoir. Shallow waters in the upper reaches of two of the tributaries would pose a problem. This site would make a fair reservoir at a moderately high project cost.

Site 15. A potential reservoir site exists on a tributary of the South Fork Shaw Creek, 1 mile north and 1 mile west of Marietta. The floodplain area is in brush, and the valley walls are timbered. There are no roads nor residences involved in this site. The stream bed contains much sand, some silt, and slabs of limestone and other rocks. The channel is 40 feet wide and 7 feet deep in an alluvial plain consisting largely of silt with rock fragments up to boulder size. Although no bedrock is exposed, the lower part of the valley walls are known to consist of sandstone, siltstone, shale, limestone, coal, and underclay formations of Pennsylvanian age which are overlain by tan till grading up to red till covered by tan loessial silt. There have been a considerable number of drift mines into the coal beds. Suitable material for the construction of an earth dam is available. This site is considered questionable because the old mines along the valley walls may provide avenues of excessive leakage. If the leakage problem can be solved, this site would make a good small reservoir at a normal project cost.

Site 16. A potential reservoir site exists on Barker Creek, a tributary of Spoon River, 6 miles north and 1 mile east of Table Grove and 5 miles northeast of Adair. The fan-shaped watershed drainage area has rolling uplands, steeply incised dendritic drainage, and coves covered with light timber and brush. The reservoir area covers a wide alluvial floodplain under intense cultivation. There are no residences, buildings, nor utilities known to exist in the reservoir area. No highways cross the area, but access to it is good. The channel is 5 feet wide and 7 feet deep. The stream bed and floodplain consist of sand and silt with some rock fragments. Both valley walls have moderate slopes consisting of sandstone of Pennsylvanian age overlain by glacial till mantled with tan loessial silt containing fragments of sandstone. Material suitable for the construction of an earth dam is available. This site is probably feasible, subject to verification by an adequate program of test borings. This site should make a good reservoir at a moderately low project cost.

Site 18. A potential reservoir site exists on Muddy Creek, a tributary of Spoon River, 3 miles south and 1.5 miles east of Smithfield. The watershed is 3 miles long and 3 miles wide. The uplands are nearly level with deeply incised valleys into narrow bottoms. Coves, valley walls, and most of the reservoir area are covered with light timber and brush, and some of the area is used for pasture. A county highway passes along the east side

of the reservoir. There are no known obstructions in the area. Mixed gravel and boulders make up the stream bed. The same material occurs in the silt of the floodplain. Both valley walls have moderately steep to steep slopes and consist of glacial till. No bedrock is exposed at the dam site. The uplands are underlain by tan loess. Material suitable for the construction of an earth dam is available. The dam site is probably feasible and should result in a very good reservoir at a low project cost.

Site 19. A potential reservoir site exists on Slug Run, a tributary of Big Creek, 2.25 miles south and 2.75 miles east of Cuba. There are two residences in the reservoir area, and some clean tilled cultivation. The entire watershed is undergoing alterations because of strip mining. The coves and valley walls are covered with brush and timber. Gas lines are in the vicinity but whether any are in the reservoir area is not known. There are no other known obstructions. The channel is about 30 feet wide and 3 feet deep in a somewhat irregular alluvial plain consisting principally of sand and silt with some gravel. The valley walls have moderate to steep slopes and are developed on sandstone of Pennsylvanian age overlain by glacial till with lenses of gravel. Material suitable for a dam is available. The dam site is probably feasible, and should result in a low cost project.

Site 21. A potential reservoir site exists on Duck Creek, 3.5 miles east and 3 miles south of Dunfermline. The narrow floodplain is under limited cultivation. The west abutment has been strip mined and there is a coal seam in the east abutment. There are two east-west gravel roads crossing the reservoir area, but both bridges are nonserviceable. A temporary 8-foot corrugated metal pipe is being placed in the northernmost crossing. The stream bed contains sand, silt, some clay, and some scattered pebbles. The channel is about 20 feet wide and 6 feet deep in a floodplain composed of silt with some scattered pebbles. The valley walls are moderately steep and consist of tan till, and minor amounts of small gravel. It is not known whether the east abutment would leak water through to the Illinois River. There is suitable material available for the construction of an earth dam. This site is probably feasible and should make a moderately low cost project.

Site 22. A potential reservoir site exists on Rattlesnake Branch, a tributary of Little Sister Creek, 2.5 miles east and 2.5 miles north of Lewistown. The floodplain is narrow with only a small amount in pasture. The valley walls are covered with timber. One gravel road on the upper end of the site might have to be raised. The stream bed consists of sand, gravel, shale, and sandstone. The channel is about 20 feet wide and 5 feet deep in an alluvial plain approximately 200 feet wide consisting of sand and gravel. The valley walls have moder-

ately steep slopes, and consist of 50 feet or more of sandstone of Pennsylvanian age overlain by glacial till mantled with a few feet of loess. Material suitable for the construction of an earth dam is available. The site is probably feasible and should result in a small reservoir at a normal project cost.

Site 25. A potential reservoir site exists on Francis Creek, a tributary of Spoon River, 5 miles north and 1 mile west of Ipava. The watershed is about 5 miles long and 2 miles wide and has almost level uplands and very deeply incised valleys. The coves and valley walls are covered with light timber and brush. The bottomland is not developed agriculturally except in the lowermost reaches. The area surrounding the reservoir is very rough, wooded, and scenic. Old Camp Ellis, immediately to the south, has a very good access road which parallels the southeast border of the reservoir area. There are no residences, utilities, buildings, nor roads involved in this development. The channel is about 25 feet wide and 7 feet deep in an alluvial plain about 700 feet wide. The stream bed and alluvium consists of assorted gravel which appears to have been derived from local bedrock. The valley walls have moderate slopes and consist of Francis Creek sandstone of Pennsylvanian age overlain by a till mantled at 20 to 30 feet of loess. An old coal prospect pit downstream from the dam site is at a high level on the northern slope. The site is probably feasible, subject to verification by an adequate program of test borings. This should make a good deep but narrow reservoir at a near normal project cost.

Site 26. A reservoir could be developed on Sugar Creek with the dam located 1.5 miles south of Table Grove and 3 miles north of Vermont. The watershed is gently rolling and under cultivation. The lake area is in pasture, and the valley walls are in light brush and timber. Two township roads cross the site and one of these, with a concrete deck bridge, would probably have to be raised. There are no other man-made obstructions in the area. Access to the site is excellent by way of township roads from U. S. Route 136 which passes within 0.5 mile of the site. The site is classed as probably feasible geologically. The valley walls and abutments have moderate slopes and consist of sandstone overlain by till and mantled by 20 to 30 feet of loess. The stream bed and alluvium consist of assorted gravel, much of which appears to have been derived from local bedrock. An old coal pit occurs high on the northern abutment downstream. This site should make a good reservoir at a low project cost.

Site 27. A reservoir could be developed on Otter Creek with the dam located about 2 miles northeast of Vermont. The reservoir would extend to within 1.5 miles of Table Grove and would be only 3 miles from Ipava.

Three township roads cross the site; one has been abandoned, one is an unimproved dirt road, and the third is a two-lane gravel road that would have to be raised or relocated. There are no residences nor other obstructions within the lake area. The reservoir would have an abundant shoreline due to the many fingers and coves. Existing township roads form an excellent access system. The lake would be within 1 mile of U. S. Route 136. The bottomland is in pasture. The stream banks and valley walls are covered with brush and light timber. A surficial geologic investigation indicates that the site is probably feasible geologically. The depth of the alluvium, which consists of silt with some gravel, was not determined but is not expected to be excessive. The valley walls and abutments consist of soft shaly limestone up to 20 feet above the stream bed, overlain by reddish till. The till seems to occur in sufficient quantities to be used for borrow. This site appears to be feasible and should develop at a low project cost.

Site 28. A small reservoir could be developed on Jake Creek by construction of a dam 3 miles south of Ipava. The lake would be somewhat narrow, but would have many fingers and an abundant shoreline. The uplands are rolling and under cultivation and drop somewhat abruptly into moderately steep walled, V-shaped valleys. No residences nor utilities would be involved in the development, and one township road crossing the upper reaches could be raised slightly. Ipava lies within the upper boundary of the watershed and could create a pollution problem. The site is considered probably feasible from a geologic viewpoint. The alluvium is composed largely of silt, and although the depth of this material was not determined, it is not expected to be excessive. The abutments and valley walls have moderate slopes and consist of 30 feet of loess over 15 feet of till over at least 50 feet of deeply weathered shaly sandstone. Material suitable for construction of a dam is available

in the till or weathered loess.

Site 29. A narrow three-fingered reservoir could be developed on East Creek with the dam located 2.5 miles south of Lewistown. The watershed consists of gently rolling, cultivated uplands that drop rather sharply into V-shaped valleys. Two township roads cross the upper reaches of the site and might have to be raised. No residences would be involved in the development. The lake bed is primarily in timber but has some patches of pasture. Geologic conditions appear to be feasible. The alluvial plain is narrow and consists of sand, silt, and some gravel. The valley walls and uplands are immediately underlain by tan silt with a scattering of gravel and chert chips. Material suitable for an earth dam is available. Pending subsurface examination this site is considered probably feasible and should develop at a moderately low project cost.

Site 30. A long narrow reservoir could be developed on Wilson Creek 1 mile upstream from the Illinois River bluff line and Bluff City. Most of the watershed area consists of steep-walled valleys, a result of the advanced dendritic drainage pattern. The narrow floodplain is in pasture with some row crop development, and the valley walls are wooded. A gravel road across the site could be abandoned if one residence were acquired. The location of Bluff City downstream from the dam would make this a high hazard structure. A surficial geologic examination indicates that conditions are favorable for a development at this site, but the water level might be limited by old coal mines on the valley walls. The stream bed is sandy with some silt and rocks up to cobble size. Deeply weathered sandstone of Pennsylvanian age is exposed in the east channel bank and forms the lower portion of the valley walls. The sandstone is overlain by reddish till and loess. This reservoir should develop at a moderate project cost.

HANCOCK COUNTY

Hancock County was covered in part by the Kansan glacier which left extensive deposits of glacial drift that were buried later by wind-blown deposits of silt. The Illinoian drift completely covered the county and buried the Kansan drift to a depth of 20 to 200 feet, obliterating all surface indications of bedrock valleys. The most common drift formation is known as till, and consists of an unsorted mixture of particles from clay through boulder size.

Hancock County is divided by two distinct drainage basins. The Mississippi drainage flows west through short deep valleys in the northern half, and through a

badly eroded area via Bear Creek in the southern half. The eastern part of the county drains through the Illinois Basin by Crooked Creek and its tributaries into the Illinois River.

The bedrock surface in Hancock County is of two distinct systems. The Pennsylvanian strata which occur in the western fourth of the county are the more youthful and could consist of weak shales, limestone layers up to 25 feet thick, coal seams, or locally developed sandstones. Mississippian rocks form the bedrock surface throughout the remainder of the county. The most common Mississippian rock in this area is Burlington

limestone which may be 70 to 100 feet thick. The Carthage bedrock valley lies roughly along the present Bear Creek Valley and is a major bedrock feature.

Topographic and geologic conditions in Hancock County are favorable for reservoir development. The results of 23 feasibility studies follow.

Site 2. North Branch Crooked Creek, a tributary of the La Moine River, has a potential reservoir site 2 miles north and 0.5 mile east of La Harpe. About three-fourths of the reservoir area is in scattered to heavy mixed hardwoods. Two north-south gravel roads cross the reservoir area. One road would have to be abandoned and the other raised. An active high pressure gas pipeline crosses the reservoir area. The valley walls and abutments are in heavy timber. The stream bed is about 70 feet wide and 7 feet deep in a wide alluvial plain composed mostly of sand and silt with minor amounts of large rock fragments. The valley walls have gentle slopes and like the uplands consist of pinkish orange till. Material for construction of an earth dam is readily available. The site is probably feasible, subject to verification by an adequate program of test borings. This site should make a many-fingered reservoir at a moderately high project cost.

Site 3. A potential reservoir site exists on South Branch Crooked Creek, a tributary of the La Moine River. The dam site is 0.5 mile east and 0.5 mile north of the center of La Harpe and 0.25 mile east of the La Harpe city reservoir. The entire reservoir area is in timber. One north-south gravel road crossing the upper reaches of the reservoir area could be raised. There are no exposures of rock material in the stream bed or banks. The valley walls have moderate slopes and consist of till with some loess on the uplands. Material suitable for a dam is present but may not be readily available because of the proximity of large cemeteries. The site is considered probably feasible geologically, subject to verification by an adequate program of test borings. This site would develop at a moderately high project cost.

Site 4. A potential reservoir site exists on Spring Creek, a tributary of the East Fork La Moine River, 5.75 miles east and 2.75 miles south of Dallas City. Nearly the entire reservoir area is idle with scattered trees along the creek bank. No residences would be inundated by the development of this site, but access roads would be removed from as many as 10 residences. This would result from the inundation of three north-south roads and one east-west road. Relocation of needed access roads would create a problem. The stream bed is of sand and silt. The stream channel is only 15 to 20 feet wide but is 10 feet deep in the floodplain. Bedrock is not exposed at the dam site. The valley walls have gentle slopes and consist of till. Material suitable for construc-

tion of an earth dam is available. The site is probably feasible, subject to verification by an adequate program of test borings. This should make a good many-fingered reservoir with an extremely long shoreline at a moderately high project cost.

Site 5. Camp Creek, a tributary of the Mississippi River, has a potential reservoir site located 2.25 miles east and 1.5 miles south of Dallas City. The reservoir area is about two-thirds row crop and one-third pasture with light timber on the stream banks. The valley walls are covered with light timber. Relocation of Illinois Routes 9 and 94 would be costly. An east-west gravel highway 0.5 mile above the reservoir site could be relocated over the structure, and several gravel roads in the upper reaches would have to be raised. There are no known residences nor utilities in the reservoir area. The stream bed is very silty. The channel is about 25 feet wide and 10 feet deep in an alluvial floodplain approximately 150 feet wide. The valley walls have gentle slopes and consist of brownish till. No bedrock is exposed at the dam site. Material suitable for an earth dam is available. The site is considered probably feasible, subject to verification by an adequate program of test borings. This site would make a many-fingered reservoir at a moderately high project cost.

Site 6. Robinson Creek, a tributary of the Mississippi River, has a potential reservoir site 2.5 miles north and 2 miles east of Nauvoo. The reservoir area is timbered with only one field near the dam site under cultivation. No residences would be involved in the development of this site. One gravel road crosses the reservoir area but could be abandoned in favor of an around-the-lake road system. The stream bed is about 60 feet wide, cut on graded till with about 3 feet exposed. Considerable sand obscures the clay underbed of the stream. The valley wall slopes vary irregularly from gentle to steep and consist of about 35 feet of orange till. The upland also consists of till with some tan loessial silt above the till. Material suitable for the construction of an earth dam is available. This site is probably feasible, subject to verification by an adequate program of test borings. This site should make a good small reservoir at a normal project cost.

Site 7. A potential dam site exists on Cedar Creek, a tributary of the La Moine River, 6.5 miles west and 1.5 miles north of Colchester. The reservoir area is primarily in pasture and woods. There are two two-lane gravel east-west township highways which could be abandoned. One two-lane blacktop road crossing the top of the structure could be raised. There are no known residences nor obstructions. The stream flows against the north valley wall exposing rocky ledges of Keokuk-Warsaw limestone up to 25 feet above the stream bed.

The limestone at creek level is very irregularly bedded and shows evidence of some variability and solubility. The stream bed contains much sand, loose limestone rubble, gravel, and some glacial material. Slopes above the limestone consist of glacial till, or possibly some bedrock of Pennsylvanian age overlain by tan till and loess. Material suitable for the construction of an earth dam is available. The site is considered possibly feasible and,

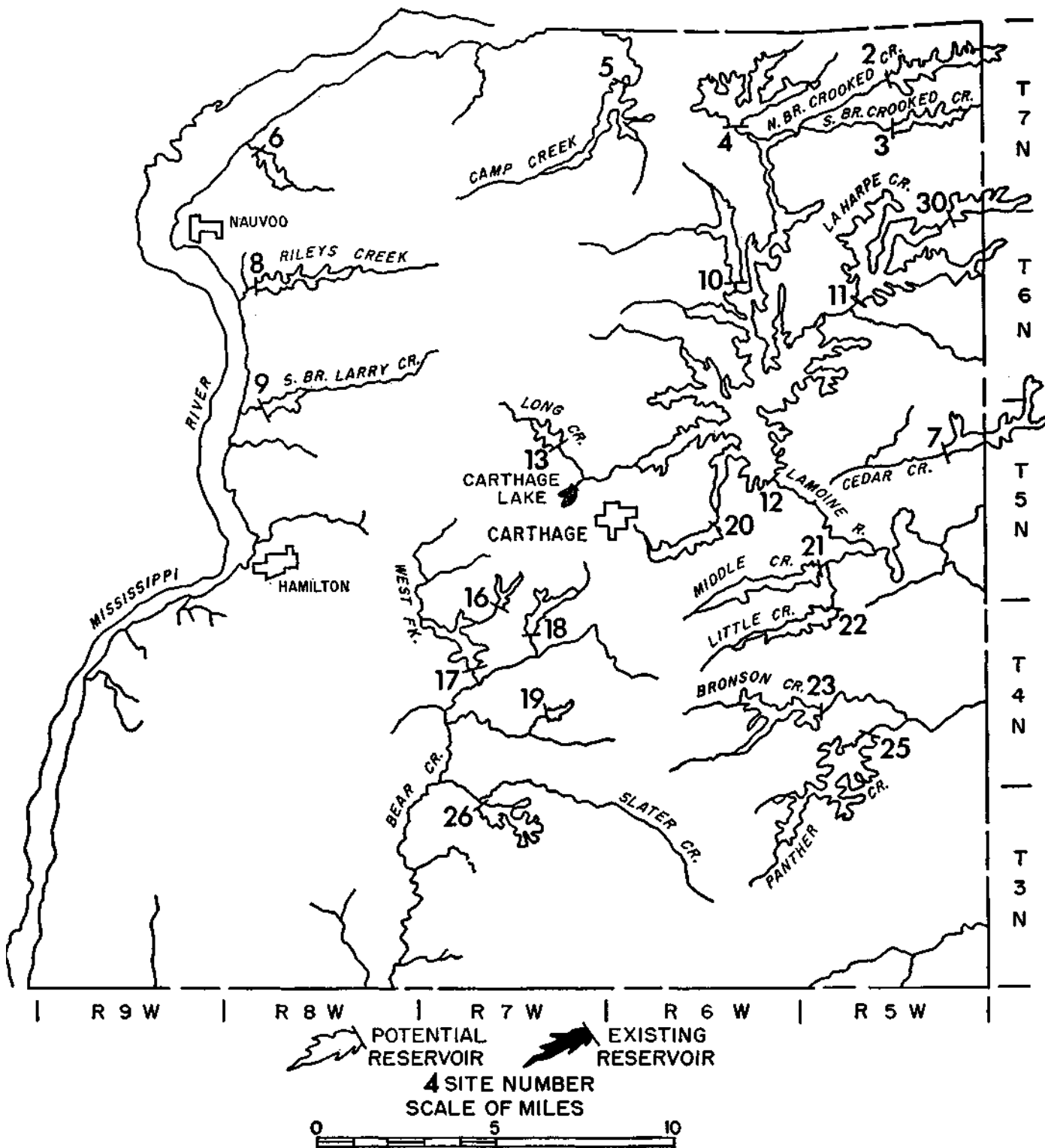
with relatively low land acquisition cost, should make a low cost project.

Site 8. Rileys Creek, a direct tributary of the Mississippi River, has a potential reservoir site 2 miles east and 1.5 miles south of Nauvoo. The entire reservoir area is in pasture with scattered to heavy timber. One road crosses the reservoir area near a rock outcropping and

Potential Reservoirs in Hancock County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	N. Br. Crooked Creek SW ¼ SW ¼ 10-7N-5W (La Harpe Quad)	680	600	11,400	3,700	19.3	0.7	57	1,100	444	18.0	6.84	6.2	6.2	5.5	5.1	6.1	4.5	3.2	3.2
3	S. Branch Crooked Creek NW ¼ NW ¼ 22-7N-5W (La Harpe Quad)	680	416	6,700	2,200	14.0	0.8	48	800	249	15.0	4.96	4.7	4.4	3.6	3.4	3.9	2.8	2.0	2.0
4	Spring Creek SW ¼ SW ¼ 14-7N-6W (Lomax Quad)	640	750	11,200	3,700	15.9	0.5	45	1,200	331	27.0	5.63	4.8	4.8	4.8	4.5	5.1	4.0	3.3	2.7
5	Camp Creek NE ¼ SE ¼ 7-7N-6W (Lomax Quad)	610	864	13,000	4,200	34.0	1.0	45	750	230	25.0	12.04	11.7	9.8	8.2	7.6	8.8	6.0	4.2	4.2
6	Robinson Creek SE ¼ SE ¼ 19-7N-8W (Fort Madison Quad)	600	135	2,600	800	4.5	0.6	57	600	257	5.0	1.39	1.3	1.3	1.1	1.0	1.3	0.9	0.7	0.6
7	Cedar Creek NE ¼ NW ¼ 12-5N-5W (Colchester Quad)	660	477	7,632	2,500	15.4	0.8	48	650	212	18.0	5.46	5.2	4.9	4.2	3.8	4.4	3.1	2.2	2.2
8	Rileys Creek SE ¼ SE ¼ 7-6N-8W (Fort Madison Quad)	640	290	8,000	2,600	10.3	0.4	80	650	449	9.0	3.18	3.0	3.0	2.9	2.7	2.9	2.5	1.9	1.8
9	Larry Creek SE ¼ SE ¼ 31-6N-8W (Keokuk Quad)	620	320	9,800	3,200	24.0	0.8	92	850	813	13.0	7.41	7.3	6.3	5.3	4.9	6.1	4.2	3.1	3.0
10	Grove Creek SW ¼ SW ¼ 11-6N-6W (Lomax Quad)	610	538	8,600	2,800	18.9	0.8	48	950	308	16.0	6.70	6.4	5.8	4.8	4.6	5.3	3.7	2.6	2.6
11	La Harpe Creek SW ¼ NW ¼ 16-6N-5W (La Harpe Quad)	620	1,920	30,100	9,800	61.2	0.8	47	800	268	44.0	21.68	20.8	19.5	16.2	15.2	17.4	12.3	8.7	8.7
12	La Moine River SE ¼ SW ¼ 12-5N-6W (Carthage Quad)	590	7,040	129,000	42,000	285.0	0.8	55	1,000	372	94.0	100.96	98.1	88.4	73.7	68.3	80.7	57.7	41.0	41.0
13	Long Creek SW ¼ SE ¼ 2-5N-7W (Carthage Quad)	660	198	2,200	700	9.4	1.7	33	700	128	8.0	3.33	2.7	1.9	1.5	1.4	1.8	1.1	0.8	0.7
16	Trib. W. Fk. Bear Creek SW Cor. SE ¼ 33-5N-7W (Carthage Quad)	650	102	1,100	400	2.4	0.7	32	650	111	3.0	0.74	0.7	0.6	0.5	0.4	0.6	0.4	0.2	0.2
17	W. Fk. Bear Creek SE ¼ SE ¼ 8-4N-7W (Carthage Quad)	610	512	5,800	1,900	21.5	1.3	34	1,100	214	12.0	6.63	6.2	4.5	3.3	3.1	4.0	2.5	1.5	1.5
18	Bear Creek SW ¼ SE ¼ 3-4N-7W (Carthage Quad)	630	233	2,600	900	6.5	0.8	34	1,200	229	6.0	2.01	1.8	1.6	1.2	1.2	1.5	0.9	0.6	0.6
19	Trib. Bear Creek SW ¼ NW ¼ 23-4N-7W (Carthage Quad)	650	51	400	100	1.3	1.0	25	600	80	3.0	0.40	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1
20	Prairie Creek SW ¼ NE ¼ 22-5N-6W (Carthage Quad)	630	333	3,400	1,100	7.2	0.8	31	800	136	8.0	2.55	2.4	2.2	1.8	1.7	1.9	1.3	0.8	0.8
21	Middle Creek SW ¼ SE ¼ 30-5N-5W (Carthage Quad)	580	513	6,000	2,000	13.2	0.8	36	700	141	12.0	4.68	4.4	4.1	3.3	3.1	3.6	2.4	1.6	1.6
22	Little Creek NW ¼ NW ¼ 5-4N-5W (Carthage Quad)	590	237	2,400	800	7.6	1.2	31	800	140	9.0	2.69	2.6	2.0	1.5	1.4	1.8	1.2	0.8	0.7
23	Bronson Creek SW ¼ NE ¼ 19-4N-5W (Carthage Quad)	590	422	5,600	1,800	17.7	1.2	40	900	234	12.0	6.27	6.0	4.5	3.5	3.3	4.3	2.8	2.0	1.8
25	Panther Creek NE ¼ NW ¼ 28-4N-5W (Colchester Quad)	600	1,160	13,900	4,500	20.5	0.6	36	600	119	36.0	7.26	6.0	6.0	5.9	5.5	6.5	5.0	3.0	3.0
26	Trib. Slater Creek NW ¼ NW ¼ 4-3N-7W (Carthage Quad)	620	352	5,600	1,800	5.3	0.3	48	900	305	10.0	1.64	1.2	1.2	1.2	1.2	1.1	1.1	1.1	0.9
30	Little Creek NE ¼ NE ¼ 2-6N-5W (La Harpe Quad)	680	384	6,400	2,100	7.0	0.4	50	600	196	10.0	2.48	1.9	1.9	1.9	1.9	2.2	2.1	1.6	1.5

HANCOCK COUNTY



could be raised or abandoned. The stream beds contain sand, silt, gravel, and larger rock fragments. The south bank of the stream is silty shale overlying brecciated Warsaw limestone of Mississippian age. The valley walls appear to consist of at least 4 feet of tan loessial silt overlying 22 feet of yellowish orange till containing

some pebbles, overlying clay or till containing some limestone fragments, and some boulders of buried rock material. Portions of the slopes contain much boulder size material. Material suitable for construction of an earth dam is available. This site is considered possibly feasible, subject to verification by an adequate program

Existing Reservoirs in Hancock County

Reservoir name	Legal description	Owner	Watershed area		Height of dam {ft}	Depth of water at dam {ft}	Pool area {acres}	Storage capacity			Remarks and data source
			{sq mi}	{acres}				{ac-ft}	{mg}	{in}	
LaHarpe Res.	21-7N-5W {LaHarpe Quad}	LaHarpe	0.1	65	28	18	9.2	101	33	18.9	Ill. Div. of Fisheries
Carthage Lake	13-5N-7W {Carthage Quad}	Carthage	2.9	1,932	29	18	35.6	325	106	2.1	Ill. Water Survey Report of Inves. 18
Augusta Res.	12-3N-5W {Colchester Quad}	Augusta	3.4	2,180	25	15	18.0	178	58	1.0	Ill. Div. of Fisheries
Thoreson Lake	23-3N-5W {Augusta Quad}	Thoreson, Carl	0.4	272	25	16	5.1	52	17	2.4	
Hackmack Lake	1-3N-9W {Keokuk Quad}	Hackmack, Wilbur	0.1	67	28	20	5.0	80	26	15.0	

of test borings. The abutments at this dam site are very steep and close together. This should make a good small reservoir at a near normal project cost.

Site 9. Larry Creek, a direct tributary of Keokuk Lake on the Mississippi River, has a potential reservoir site located 5 miles north and 0.5 mile west of Hamilton. Most of the reservoir area is in timber but there are some cleared fields at the upper end of the lake area. Two residences and one gravel road would be inundated. The beds and banks of the channel and the valley walls expose a sequence of sandstone of Pennsylvanian age overlying irregularly bedded Warsaw limestone of Mississippian age. The south bank of the channel and the south valley wall are one continuous cliff. The north valley wall has a gentle slope, but bedrock is probably near the surface. Because the bedrock appears to be close to the surface all the way up to the upland on both sides of the valley, it may be difficult to obtain enough material to construct an earth dam. The site is considered questionably feasible because of the location of bedrock and a possible lack of material suitable for the earth embankment. These factors and others must be investigated by an adequate program of test borings before a final decision as to the feasibility of the dam site can be made. This should make a good small reservoir at a moderately high project cost.

Site 10. Grove Creek, a tributary of the La Moine River, has a potential reservoir site 7 miles north and 4 miles east of Carthage. The lower half of the reservoir area is in pasture; the upper half is brushy with scattered timber. Of three east-west roads crossing the reservoir area, two could be abandoned and the other raised. The stream bed consists principally of sand. The valley walls and uplands consist of till overlain by loess. No bedrock is exposed at the dam site. Material suitable for the construction of an earth dam is available. The site is probably feasible, subject to verification by an adequate program of test borings. Leakage through the valley wall into the La Moine River may present a problem. This site should develop a long narrow reservoir at a normal project cost.

Site 11. La Harpe Creek, a tributary of the La Moine River, has a potential reservoir site 0.5 mile below the confluence with Baptist Creek. This dam site is 5 miles south and 0.5 mile west of La Harpe. About 50 percent of the reservoir area appears to be idle with scattered timber. Two residences would be inundated. Relocation of six north-south gravel road crossings and four east-west crossings would be required. The stream bed is very sandy and silty and tends to become mucky when saturated with water. The bed is about 30 feet wide and 7 feet deep in an alluvial plain several hundred feet wide. No bedrock is exposed at the dam site. The valley walls have gentle slopes consisting of pinkish orange till overlain by a few feet of loess. Material suitable for the construction of an earth dam is available. The dam site is considered probably feasible, subject to verification by an adequate program of test borings. This dam site would make a many-fingered reservoir, but the number of road relocations and high cost of land acquisitions, easements, and rights of way would result in a high project cost.

Site 12. A potential reservoir site exists on the La Moine River 5 miles east and 1 mile north of Carthage. The reservoir area is under cultivation but has heavy timber along the creek and the valley walls. Three farm residences would be inundated. Three gravel roads cross the main body of the reservoir, and there are 10 smaller crossings to be considered. Although there would be numerous road relocations, they do not appear to be excessive for a site this large. There is some glacial gravel in the stream bed. The valley walls have moderate slopes, and there is probably some till present but none is exposed. The upland appears to consist of tan clayey silt. No bedrock is exposed at the dam site, but irregular ledges of limestone are exposed in the south bank 400 feet downstream. A quarry 0.5 mile downstream indicates that limestone will be encountered. Material suitable for construction of an earth dam is present. The site is probably feasible, subject to verification by an adequate program of test borings. This will make a large many-fingered reservoir with a shoreline of almost 100 miles. Land acquisition, relocations, easements, and

rights of way should not be excessive for a project of this size. This site should make a normal cost project.

Site 13. A good small reservoir site exists on Long Creek about 1 mile south of Ferris. The watershed has gently rolling uplands sloping uniformly into a moderately steep walled V-shaped valley. The lake area is in brush with scattered timber. No residences would be involved in the development. One township road crossing the area could be abandoned. Geologic conditions appear favorable from a surficial examination. The abutments are steep and appear to be glacial till with small rock fragments. Alluvium in the creek bed does not seem to be deep and is underlain by till. Good quality till should be available in either upstream abutment for construction of an earth fill. This site should make a moderately low cost project.

Site 16. A small reservoir could be developed 2 miles southeast of Elvaston on a tributary of West Fork Bear Creek. The watershed consists of gently rolling uplands sloping uniformly into a moderately steep walled valley with a narrow floodplain. No roads nor residences would be involved in the development. Timber is restricted to the creek banks and valley walls with moderate agricultural development on the bottoms. A surficial examination indicates that geologic conditions are favorable. The abutments are composed of glacial till overlain by loess. The alluvium consists of sands, silts, and clays of an undetermined depth. Good quality borrow should be available from the nearby glacial till. This site should develop at a low project cost.

Site 17. A potential reservoir site exists on the West Fork just 0.5 mile above its confluence with Bear Creek, 1.5 miles northwest of Basco. The watershed exhibits gently rolling uplands breaking sharply into a system of steep walled valleys with a broad flat floodplain in the vicinity of the lake. Most of the floodplain is under cultivation with timber along the creek banks and valley walls. One township road could be abandoned or relocated over the structure, and one residence would be inundated. A surficial examination indicates that geologic conditions are favorable. The valley walls are probably till although the right abutment is quite steep, possibly indicating the presence of bedrock. The depth and nature of the alluvium was not determined. Good quality borrow should be available from the nearby glacial till although there seems to be a concentration of gravel on the upper portions that would have to be wasted or mixed with the higher clay content material. This site should develop at a moderate to low project cost.

Site 18. A potential reservoir site exists on the upper reaches of Bear Creek with the dam located 4 miles south and 3 miles west of Carthage. The watershed exhibits

rolling clean tilled uplands which slope uniformly into a moderately steep walled valley with almost no floodplain. Cover in the lake area consists of about half row crops and half pasture with a few trees around the creek. One township road across the upper reaches of the site might have to be raised, but no residences would be involved. Geologic conditions look favorable with no serious problems anticipated. The abutments and valley walls consist of till overlain by silty clay on the uplands. The best material for the fill and the depth and nature of the alluvium would have to be determined by a program of boring and testing. This site should develop at a moderate to low project cost.

Site 19. A small reservoir could be developed on an unnamed tributary of Bear Creek about 1 mile southeast of Basco. The watershed slopes uniformly from gently rolling uplands into a V-shaped valley with moderately steep walls. The lake would be bordered by township and county roads. No residences nor roads would be inundated. The entire lake area appears to be in brush and timber. The abutments are composed of an orange till overlain by a high clay content gray till overlain by loess on the uplands. The alluvium is expected to be quite shallow so that the earth fill would be built from and founded on the surrounding till. With such good geologic and economic conditions this should be a low cost project.

Site 20. A potential reservoir site exists on Prairie Creek with the dam located 2.5 miles east of Carthage and 0.5 mile south of U. S. Route 136. The watershed includes most of the city of Carthage and has rolling uplands sloping gradually into a moderately steep walled valley with a very narrow floodplain. Two township roads crossing the site could be abandoned if a new road crossed the structure. Three residences are quite close to lake level and might have to be acquired. The upper two-thirds of the site is in clean tilled cultivation, and the remainder is in brush and light timber. No obvious problems were encountered by a surficial geologic examination; however, the possibility of pollution from Carthage does exist. In general this area consists of sandstones and shales of Pennsylvanian age overlain by a varying thickness of till, in turn overlain by loess. A complete program of testing and boring would have to precede any decision on geologic feasibility. This site should develop at a moderately high project cost.

Site 21. A reservoir could be developed on Middle Creek with the dam located 6 miles east and 1 mile south of Carthage. Only a small portion of the watershed consists of uplands, and most of the area is gently sloping valley walls and an unusual broad, flat lowland area at the head waters. The floodplain is irregular and undulating, and nearly all under cultivation. Of the three

gravel roads crossing the site, one would probably be placed across the structure, one raised, and the other abandoned. No residences would be inundated but several are very close and might have to be acquired. No obvious geologic problems were encountered by a surficial examination. The abutments are fairly steep and appear to be till with some concentrations of gravel. Sufficient good quality till for an earth fill should be available from the valley walls. Depth and nature of the alluvium, foundation conditions, and best source of borrow would have to be determined by future test borings. This site should develop at a moderately high project cost.

Site 22. A reservoir could be developed on Little Creek about half way between Carthage and Plymouth. The watershed is long and narrow, sloping gradually into a moderately steep walled valley with a narrow floodplain. Cover in the lake area consists of scattered timber in pasture or brush. One gravel road crossing the site could easily be abandoned. No residences nor other man-made obstructions would be involved in the development. A surficial examination indicates that geologic conditions are good. The abutments appear to be till which would probably form the foundation and supply the borrow material. The depth and nature of the alluvium was not determined. This site should develop at a low project cost.

Site 23. A potential reservoir site exists on Bronson Creek with the dam located about 5 miles west and 2 miles north of Plymouth. The watershed consists of rolling uplands sloping into a well developed dendritic drainage system of moderately steep walled valleys with a rather narrow floodplain. A new road across the structure and one relocation would probably allow all township roads crossing the site to be abandoned. One small residence and local utilities would also be inundated. Cover in the site consists of scattered timber and brush with a few pastured areas. The channel is about 13 feet deep in the vicinity of the dam and exposes siltstone and shale covered by sand and alluvial silt. The abutments appear to be till indicating that the dam would be founded on shale and constructed of till. A complete program of boring and testing would be required to substantiate these findings. This site should develop at a normal project cost.

Site 25. A dam across Panther Creek about 3 miles west and 1 mile north of Plymouth would create a large reservoir with a long shoreline. One heavily traveled township road would have to be raised or relocated and one residence would have to be acquired. The watershed has a small portion of its area in rolling clean tilled uplands, but consists mostly of a system of deeply in-

cised moderately steep walled valleys. The floodplain, which is wide and flat in some areas and nonexistent in others, has cover consisting of half row crop and half brush and timber. A preliminary geologic investigation did not uncover any obvious geologic problems although good quality borrow might have to be selectively excavated depending on the depth to bedrock. The abutments are apparently a sandstone core overlain by glacial till which is mantled by loess. The depth of alluvium, which seems to consist of sand and gravel, was not determined. This site should develop at a moderate project cost.

Site 26. A narrow, fairly deep reservoir could be developed on a tributary of Slater Creek with the dam just above the confluence and about 2.5 miles northwest of West Point. The watershed has gently rolling clean tilled uplands sloping uniformly into a deeply incised steep walled valley with a narrow but fairly flat floodplain. The proposed elevation is an absolute maximum for this watershed and a 10 foot lower elevation may be more feasible. No roads nor residences would be involved. Except for some pasture in the upper reaches, cover generally consists of brush and timber. Bedrock exposures were not encountered in the lake area. The abutments appear to be till overlain by some concentrations of gravel. An adequate supply of borrow material should be available in the till deposits. The stream bed shows sand and silt with some glacial boulders and smaller rock fragments. Depth of the alluvium was not determined. This site should develop at a low project cost.

Site 30. A dam across Little Creek about 2.5 miles southeast of La Harpe would create a reservoir reaching the outskirts of Blandinsville. The watershed is long and narrow and has nearly flat uplands which slope uniformly into a moderately steep walled valley. The floodplain is not well defined since it slopes gradually into the valley walls. A small percentage of the lake area is under cultivation, but most is idle with scattered timber and pasture. One gravel road across the site could be abandoned since the lake area is surrounded by township roads and Illinois Eoute 9. Two residences are fairly close to the proposed shoreline but would not be inundated. No obvious geologic problems were encountered by a preliminary examination. No bedrock was observed at the dam site. The abutments are composed of glacial till overlain by loess from which the upland soils are developed. The till appears to occur in sufficient quantity to be used for an earth dam. The alluvium consists mostly of sand and silt to an unknown depth. The lack of man-made obstructions and the low level of agricultural development should make this a moderately low cost project.

HENDERSON COUNTY

Henderson County was completely covered by several glaciers during the glacial period. The Illinoian in its movement leveled hills and filled valleys with masses of rock, gravel, sand, silt, and clay until these changes brought about the present basic relief and main drainage systems of Henderson County. The Wisconsin glacier did not reach Henderson County, but meltwaters carried tremendous quantities of sediment into the Mississippi and Illinois River Valleys. The silty portions of the sediment were picked up by the wind and deposited as loess on the adjacent uplands. The loess is about 25 feet deep at the Mississippi bluffs and thins to about 10 feet in the southeastern part of the county. The coarser material was deposited in the bluff region and the finer material was blown farther eastward.

The bedrock surface in Henderson County is irregular, caused by preglacial erosion, and consists of shale, coal, limestone, dolomite, and sandstone arranged in layers. These rocks were originally deposited as sediment, later consolidated into solid rock, warped, and tilted so they now dip southeastward at a slope of 10 to 15 feet per mile.

The drainage of Henderson County is primarily westward to the Mississippi River via Dugout, Honey, Ellison, and Henderson Creeks and their tributaries.

Topographic and geologic conditions are generally well suited to reservoir development in Henderson County. The results of nine feasibility studies follow.

Site 1. A potential reservoir site is available on Fall Creek east of Illinois Route 94 and about 1.5 miles south of Baldbluff. The watershed is 5 miles long by 3 miles wide and consists of clean tilled rolling uplands and lightly timbered steep walled valleys. Cover in the lake bed consists primarily of brush, light scrub timber, and idle pasture. There are no residences in the lake bed area. One township road and a stone quarry receiving occasional use would have to be abandoned. The site is designated as possibly feasible, geologically. The stream channel exposes alluvial silt over clayey silt or clay. The valley walls are Mississippian age limestone overlain by glacial till or loess. Suitable material for construction of an earth dam is available. An adequate program of test borings would be required to determine the possible presence of solution channels in the limestone. Minimum land acquisition and right of way problems would make this a low cost development.

Site 3. A reservoir could be developed on Jinks Hollow about 3 miles east of Oquawka and 1 mile south of Illinois Route 164. About a third of the 6 by 3 mile watershed is in rolling clean tilled uplands, and the remainder consists of lightly timbered steep walled valleys. The lake area consists mainly of pasture, brush, and scat-

tered timber. There are no houses nor utilities in the lake area. Illinois Route 94 across the center of the site would have to be raised or relocated, and two township roads crossing fingers of the site could be raised. An alluvial plain of unknown depth and about 600 feet wide consisting of sands, silts, and clays would have to be explored by further test borings. The valley walls appear to be till and colluvium near their base with till and loess in the upper portions. Suitable material for an earth dam is available. This site is classified as probably feasible and would be a moderately high cost project.

Site 5. A reservoir could be developed on Old Tom Creek by construction of a dam about 2 miles west of Kirkwood. The reservoir area is in pasture with timber confined to the stream banks. There is scattered timber on the valley walls. No buildings nor utilities would be involved in the development. A two-lane gravel road would have to be raised in two locations. Burlington limestone of Mississippian age may underlie the floodplain and probably makes up the lower part of the valley walls. The floodplain consists of stratified alluvial silt of unknown depth, and the valley walls are composed of a tan loessial silt. Suitable material for an earth dam is available. The dam site is classified as probably feasible; however, further test borings would be required to determine the possible presence of solution channels in the limestone and the depth to limestone.

Site 6. A low cost reservoir could be developed on a tributary of the Mississippi River about 2.5 miles south of Gladstone. The lake bed is predominantly pasture with light timber and brush along the creek banks and valley walls. No roads, residences, nor utilities would be inundated. Excellent access is provided by a gravel road paralleling the site about 0.5 mile to the south. The floodplain consists of silt with lenses of white chert and limestone fragments to an unknown depth, probably underlain by limestone of Mississippian age. The lower part of the valley walls probably consists of the limestone also. The upper portion of the valley walls is composed of till containing chert overlain by loess. Material suitable for a dam is available. Although this site is classified as probably feasible, an adequate program of test boring would be required to determine the depth to limestone and the possibility of solution channels.

Site 7. A reservoir could be developed on Ellison Creek about 1 mile east of Media. The main feature of this lake would be a 0.75 by 0.75 mile square pool just upstream from the dam. The lake area is under cultivation except for mixed timber along the stream banks and on fingers of the site. Several north-south township

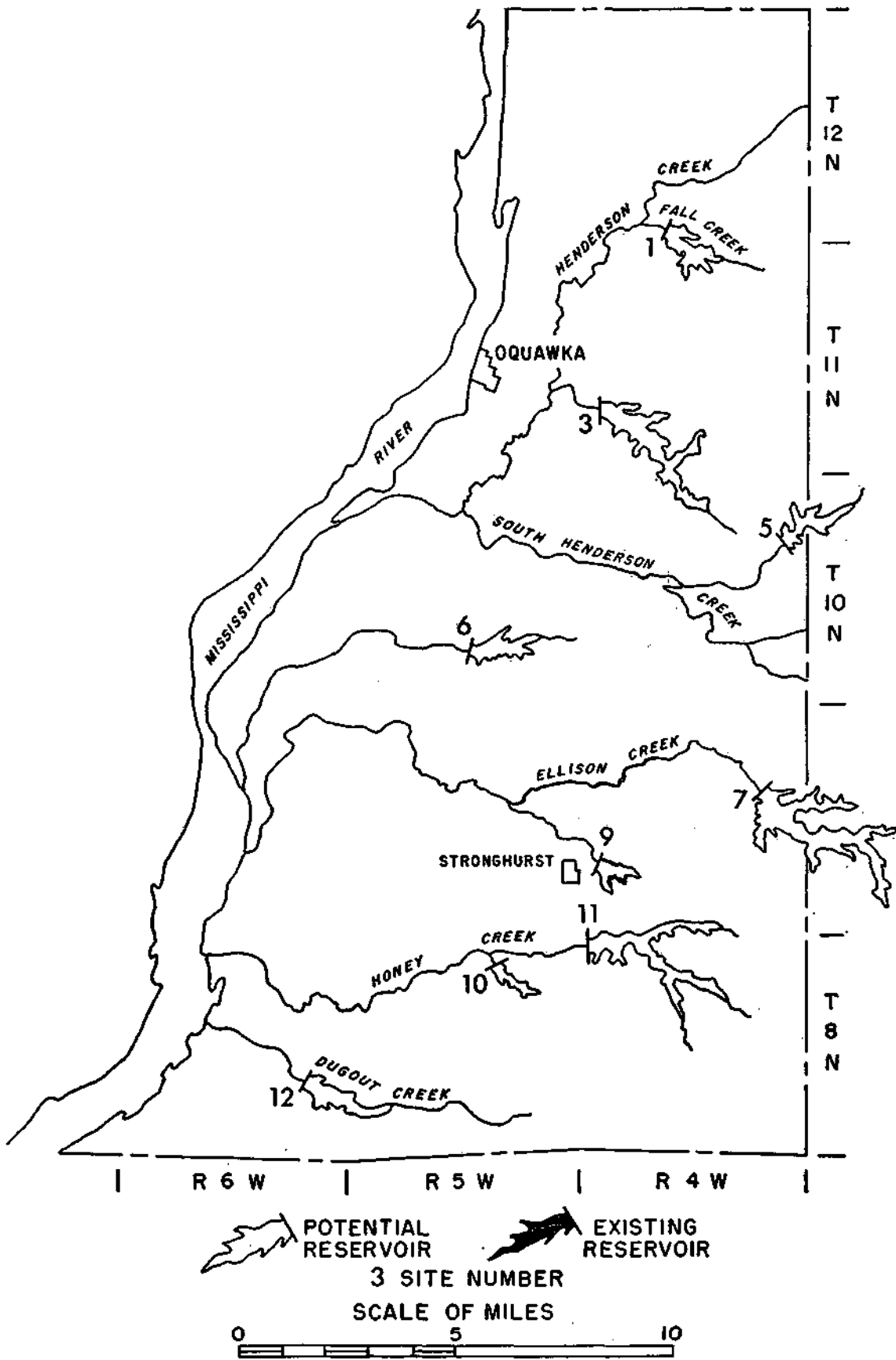
Potential Reservoirs in Henderson County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Fall Creek NW ¼ SW ¼ 33-12N-4W (Oquawka Quad)	640	282	7,700	2,500	11.8	0.7	82	900	688	9	4.79	4.6	4.6	4.6	4.6	4.6	3.5	3.1	2.8
3	Jinks Hollow W ½ NE ¼ 30-11N-4W (Oquawka Quad)	640	640	13,000	4,200	14.8	0.5	61	450	134	18	6.00	5.7	5.5	5.2	5.0	5.6	4.6	4.2	3.9
5	Old Tom Creek SE ¼ SW ¼ 12-10N-4W (Oquawka Quad)	700	211	2,100	700	10.9	2.2	30	600	103	10	4.11	3.1	2.1	1.8	1.7	1.6	1.2	1.1	0.9
6	Trib. Mississippi River NW ¼ SW ¼ 27-10N-5W (Oquawka Quad)	630	190	3,600	1,200	4.1	0.5	57	700	291	10	1.55	1.3	1.3	1.3	1.3	1.4	1.1	0.9	0.8
7	Ellison Creek Cor. NE ¼ 14-9N-4W (Oquawka Quad)	700	1,478	24,600	8,000	29.4	0.5	50	1,200	448	33	11.09	9.5	9.5	9.5	9.5	9.8	7.6	6.5	5.7
9	Dixson Creek NW ¼ NE ¼ 30-9N-4W (La Harpe Quad)	660	134	1,700	500	3.0	0.8	37	650	137	9	1.13	1.0	0.9	0.8	0.7	0.9	0.6	0.5	0.4
10	Trib. Honey Creek NE ¼ NE ¼ 10-8N-5W (La Harpe Quad)	700	109	1,600	500	2.3	0.6	45	550	159	6	0.87	0.8	0.8	0.7	0.6	0.8	0.6	0.5	0.4
11	Honey Creek Cor. W ½ 6-8N-4W (La Harpe Quad)	720	1,018	17,700	5,800	32.3	0.7	52	1,300	457	24	12.18	11.6	10.6	8.9	8.4	10.3	7.1	6.5	5.4
12	Dugout Creek NE ¼ NE ¼ 26-8N-6W (Lomax Quad)	650	371	9,300	3,000	13.4	0.6	75	1,100	646	24	5.05	4.9	4.8	4.2	4.0	4.8	3.5	3.0	2.6

Existing Reservoirs in Henderson County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Carthage Lake	3-10-9N-6W (Burlington Quad)	Club Water					132.9				
Bass Lake	27-34-9N-6W (Burlington Quad)	New Crystal Lake Cb.					160.4				
Stony Point Lake	22-23-10N-6W (Burlington Quad)	New Crystal Lake Cb.									
Orchard City Lake	23-10N-6W 4-9N-6W (Burlington Quad)	New Crystal Lake Cb.									
Silver Lake	22-9N-6W (Burlington Quad)	New Crystal Lake Cb.									
North Gladstone Lake	16-17-10N-5W (Oquawka Quad)	Terry & Lewis Sand & Gravel Co.					16.4				
South Gladstone Lake	16-17-10N-5W (Oquawka Quad)	CB&Q R.R.					27.0				
Poque Lake	5-10N-5W (Oquawka Quad)	Ditto & Stevenson									
Whitehorse Lake	33-11N-5W (Oquawka Quad)	Ditto & Stevenson									
Izaak Walton League Lake	6-10N-3W (Oquawka Quad)	Clyde Young					10.0				
Tom Creek No. 29	1-10N-4W (Oquawka Quad)	Clyde Young					7.7				
Tom Creek No. 28	12-10N-4W (Oquawka Quad)	G. Fisher					8.2				
Tom Creek No. 24	12-10N-4W (Oquawka Quad)	G. Fisher					5.1				
Dowell Lake	1-9N-5W (Oquawka Quad)	Milford Dowell	0.39	252	25	18	7.2	72	23.5	3.45	
Norris Lake	22-10N-4W (Oquawka Quad)	Halsey Norris	0.35	222	22	15	6.5				
Kissinger Lake	11-12N-4W (Keithsburg Quad)	Cris & Henry Peacock	0.55	354	24	18	7.7	77	25.1	2.62	
Tom Creek No. 22	13-10N-4W (Oquawka Quad)	Kendall Gibson					14.0				
Gipe Lake	25-8N-4W (LaHarpe Quad)	Gerald Gipe	0.30	195	16	13	6.1	25	8.1	1.56	

HENDERSON COUNTY



roads crossing the site could probably be abandoned in favor of well developed east-west township roads. Illinois Route 116 through Media would provide excellent access to the site. Although there are no known residences or other buildings in the lake small stone quarry would have to be abandoned. Both valley walls are developed on silty till overlying Burlington limestone of Mississippian age. The alluvial plain is composed of stratified silt and sand with minor amounts of gravel. Suitable material for an earth dam is available. This site is classified as probably feasible, subject to verification by future test borings to determine the depth to limestone and the possible presence of solution channels through which leakage from the reservoir could occur. This site should develop at a moderately high project cost.

Site 9. A reservoir could be developed on Dixon Creek about 0.5 mile east of Stronghurst. The lake area is in pasture and scattered timber. One north-south township road crossing the site could be abandoned. The proximity of this site to Stronghurst and the excellent accessibility should make this a desirable location. Future test borings would be required to determine the depth and extent of sand and silt in the floodplain. The valley walls and uplands are developed on silt. Material suitable for a dam is available. This site is classified as probably feasible, and should develop at a moderately low project cost.

Site 10. A small reservoir site is available on a tributary of Honey Creek about 3 miles southwest of Stronghurst. The entire lake area appears to be in timber, and access to the site is somewhat difficult. Cost of clearing in this site would be more than offset by the lack of road or residence relocation. Burlington limestone of Mississippian age underlies the stream bed and floodplain and probably makes up the lower part of the valley walls. The floodplain consists of silt with gravel lenses to an unknown depth. The valley walls contain till, sand, chert, and limestone fragments. Material suitable for an earth dam is available. This site is classified as possibly feasible, but an adequate program of test borings would

be required to determine the depth of rock and the possible presence of solution channels. This site should produce a moderately low cost project.

Site 11. The upper reaches of Honey Creek could be developed into a reservoir by construction of a dam about 2 miles south of Stronghurst just east of Illinois Route 94. The watershed is 8 miles long by 6 miles wide and consists of gently rolling clean tilled uplands with moderately steep slopes and lightly timbered valley walls. The lake area is under cultivation; light timber is restricted to the stream banks and some areas of the valley walls. At the proposed spillway elevation, the main branch would extend to within 1 mile of Raritan. One frame residence and county roads in five locations would be inundated. The floodplain consists of silt and gravel of unknown depth underlain by Burlington limestone of the Mississippian age which also makes up the lower part of the valley walls. The upper portion of the valley walls is till and loess, material suitable for a dam. Future test borings would be required to determine the depth of limestone and the possibility of solution channels through it. This site should develop at a near normal project cost.

Site 12. A potential reservoir site exists on Dugout Creek about 2 miles southeast of Lomax. The upper portion of the 8 by 2 mile watershed consists of gently rolling uplands and moderately sloping valley walls, but the lower portion consists mainly of steep well developed valleys. The reservoir area is in timber but has some pasture in the upper reaches. One north-south township road across the site could be raised. Improvement of existing east-west roads paralleling the site would give fairly good access. Bedrock makes up the lower portion of the valley walls and is overlain in the floodplain by an unknown depth of sand and silt with some gravel. The upland material is mostly silt with some sand and clay. Material suitable for an earth dam is available. The site is probably feasible, but future test borings would be required to determine the nature of bedrock and the possible presence of solution channels.

IROQUOIS COUNTY

The northern third of Iroquois County is underlain by Silurian and Devonian Dolomite and the remainder by Pennsylvanian strata. The Pennsylvanian rocks are predominantly weak shales but may contain limestone, coal seams, or locally developed sandstones. Two prominent features in the bedrock topography are the Onarga bedrock valley which runs from northeast to southwest through the county, and the Mahomet bedrock valley through the extreme southern edge.

The entire county has been covered by drift from the Kansan, Illinoian, and Wisconsinan glaciers. As the Wisconsinan glacial ice melted, a shallow lake was formed over much of the county. The fine-textured sediments deposited in this lake and a blanket of up to 2 feet of wind-deposited silt contributed materially to the quality of soils in the area.

Drainage through the county is from south to north by Spring, Pigeon, and Sugar Creeks into the Iroquois River. Most of the relief in the county is provided by moraines in the northeast and southeast corners.

For the most part the streams of Iroquois County are shallow, and only relatively small reservoir sites are available. The results of eight feasibility studies follow.

Site 2. A narrow reservoir could be developed on a southern tributary of the Iroquois River 3 miles north and 1.5 miles east of Sheldon. The watershed consists of very gently rolling uplands of the Iroquois moraine and a narrow valley with moderately steep sides. Cover in the lake area is timber or pasture in which there is scattered timber. The only man-made obstruction involved is a one-lane gravel road that could be raised. Access to the general area is good since it lies just 1.5 miles east of U. S. Route 52 and 2 miles north of U. S. Route 24. Pollution may be a problem with this site since Sheldon lies within the watershed. Logs of previous borings in this area indicate that deep permeable sand and gravel deposits are overlain and effectively sealed by about 85 feet of silty clayey glacial till. It may be desirable to move the structure 300 to 400 feet upstream to avoid permeable alluvium from the Iroquois River. The reservoir area is underlain by yellowish brown silty clayey till. Similar material forms the foundation and abutments and would be available for the earth fill. This site should result in a good narrow reservoir at a moderate project cost.

Site 3. A small reservoir site is available 1 mile south of Iroquois on a tributary of the Iroquois River. Although good township roads circle the area, only one would have to be raised. In addition to the excellent local access roads, T.J. S. Route 52 passes within 0.5 mile of the site. No residences nor other man-made obstructions would be involved in the development. Cover in the

lake area consists of scattered hardwoods, and excellent recreational potential exists in hardwood areas surrounding the lake. The watershed exhibits very gently rolling cultivated uplands. A preliminary investigation and logs of previous borings indicate that geologic conditions are favorable at this location. The loessial soils in the area are underlain by 15 to 140 feet of clayey till containing sand and gravel lenses. A brown silty clayey till is apparent on the left abutment, but the right is heavily overlain by sand from old Iroquois River alluvium. Future borings would be required and should be directed toward the depth and nature of the alluvium and the extent of permeable lenses in the till. Till suitable for the construction of an earth dam can be obtained in the vicinity of the dam site. This should result in an excellent small reservoir at a moderate project cost.

Site 4. A narrow lake could be developed on a southern tributary of the Iroquois River about 4 miles west of Sheldon and 5 miles east of Watseka. At the present time this site does not appear economically feasible since T.J. S. Route 24 and the Toledo, Peoria, and Western Railroad would have to be raised. The general lack of water storage potential in this area might at some time make this site more desirable. The large watershed consists of very gently rolling uplands and a narrow moderately steep walled valley. Cover in the lake area varies from pasture with scattered timber to heavy timber. A preliminary examination indicates that leakage might occur through an underlying permeable horizon. Logs of previous borings indicate that gravel or permeable sand lenses are interdeposited with clayey till at depths ranging from 15 to 140 feet. A yellowish brown silty gravelly till is exposed in shallow cuts and probably forms the core of the abutments and underlies the floodplain. Material for the construction of an earth dam is probably available in the nearby till and more clayey alluvium. This site should develop a fair reservoir at a high project cost.

Site 5. A small shallow reservoir could be developed on an eastern tributary of Sugar Creek about 2 miles northeast of Woodland. The site would be surrounded by township roads and one of these could be abandoned. Cover in the site consists of scattered timber. The watershed lies within the nearly flat plain of glacial Lake Watseka. Geologic conditions at this site are questionable. The glacial lake deposits are generally clay and sand deposits. In the reservoir, the abutments are gray clay overlain by 5 to 10 feet of sand. The extent of this sand overlay would have to be carefully explored by future borings since any reduction in spillway elevation would make this site too shallow for consideration. Clays suitable for the construction of an earth dam are prob-

ably available in the nearby uplands. This site should develop a fair small reservoir at a moderate project cost.

Site 6. A long narrow and rather shallow reservoir could be developed on Jefferson Creek with the dam located less than 1 mile southwest of Woodland. A three-way gravel intersection would have to be relocated, and two residences which are close to lake level would need new access roads if they were not acquired. As with other sites in the area, the watershed is too large for the reservoir and lies within the nearly flat plain of glacial Lake Watseka. The valley is narrow with very gently sloping valley walls. Cover in the lake area consists of pasture upstream and scattered timber downstream. Shallow water in the upper half of this site may be a serious problem. A program of testing and boring would be required to determine feasibility. Logs of previous borings indicate that the bedrock is mantled with thick

clay deposits containing occasional sand lenses. The abutments are composed of and the floodplain is underlain by a brownish buff clay. The depth and nature of the alluvium has not been determined. Clayey material suitable for construction of an earth dam is available in the nearby uplands. This site should develop a fair reservoir at a moderate project cost.

Site 7. A very small but attractive site is available on a tributary of Sugar Creek 2.5 miles north of Milford. The watershed exhibits very gently rolling uplands and a moderately steep walled V-shaped valley. The entire lake area is in timber. No roads nor residences would be involved in the development. Access is fairly good with Illinois Route 1 only 0.5 mile east of the site. Logs of previous borings in this area indicate that bedrock is overlain by 40 to 50 feet of clay and clay till containing sand lenses. The abutments are composed of mottled

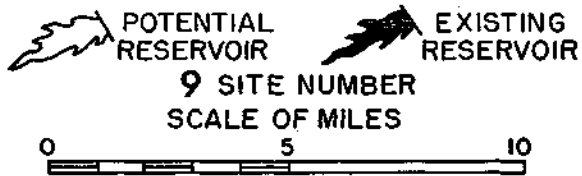
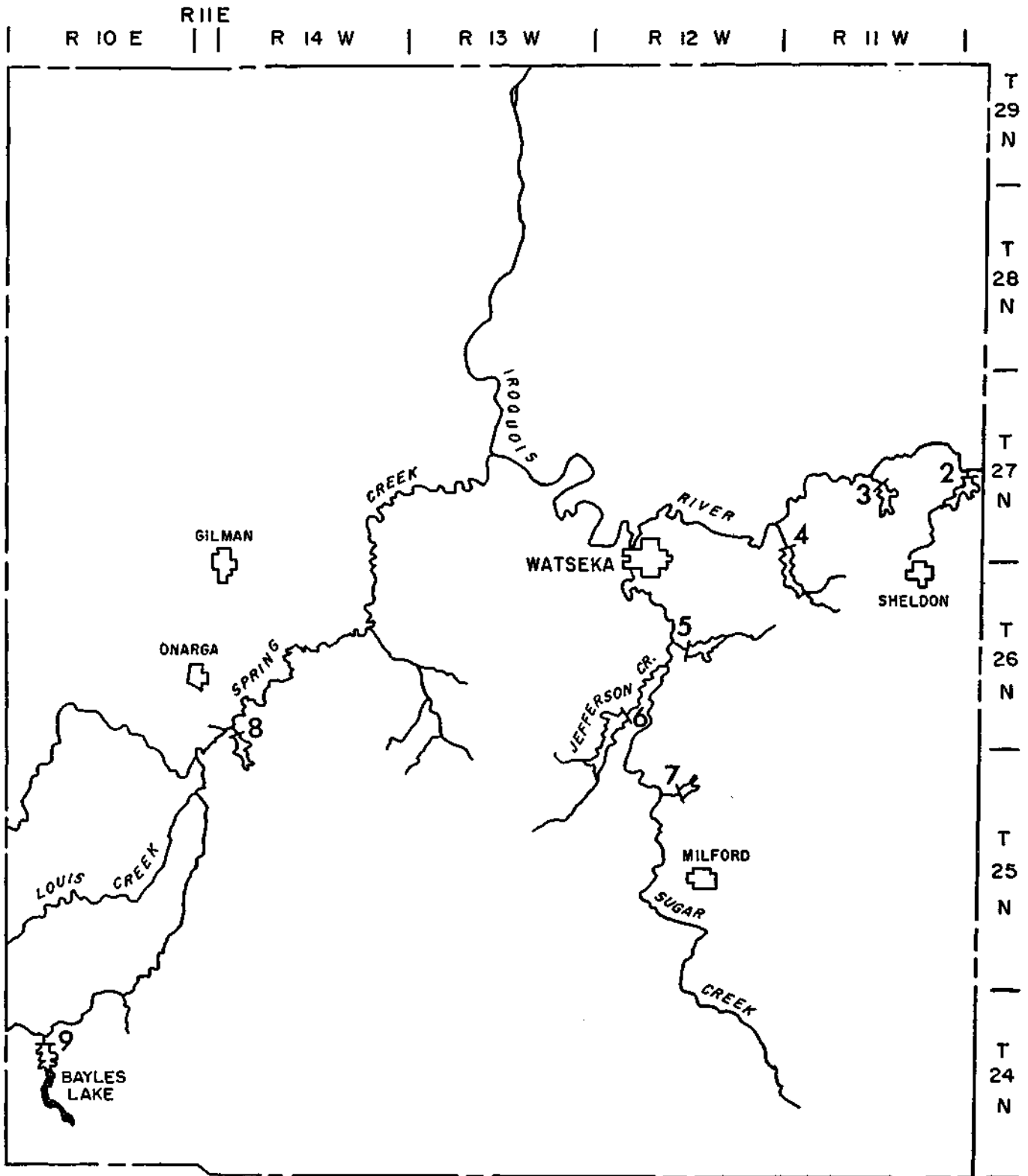
Potential Reservoirs in Iroquois County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	Trib. Iroquois River Ctr. NW ¼ 19-27N-10W (Watscka Quad)	650	102	1,000	300	9.8	5.4	29	800	115	5	4.76	1.9	1.6	1.4	1.2	1.0	0.8	0.7	0.7
3	Trib. Iroquois River NE ¼ SW ¼ 22-27N-11W (Watscka Quad)	655	76	700	200	3.0	2.5	26	1,000	143	3	1.46	1.0	0.8	0.6	0.6	0.5	0.4	0.3	0.3
4	Trib. Iroquois River NE ¼ SW ¼ 31-27N-11W (Watscka Quad)	660	122	1,100	400	10.4	5.1	27	700	97	6	5.05	2.1	1.7	1.5	1.3	1.1	0.9	0.7	0.7
5	Trib. Sugar Creek NW ¼ SW ¼ 15-26N-12W (Milford Quad)	640	102	700	200	4.8	3.5	22	700	80	5	2.30	1.1	0.9	0.8	0.7	0.6	0.5	0.3	0.3
6	Jefferson Creek SW ¼ SW ¼ 29-26N-12W (Milford and Cissna Park Quads)	640	192	1,300	400	20.8	8.6	20	700	72	11	9.98	2.6	2.1	1.6	1.6	1.2	1.0	0.6	0.6
7	Trib. Sugar Creek NE ¼ NW ¼ 3-25N-12W (Milford Quad)	660	26	200	50	0.9	2.2	25	550	74	2	0.43	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1
8	Trib. Spring Creek NW ¼ NE ¼ 31-26N-14W (Cissna Park Quad)	660	70	500	150	1.8	2.1	20	400	42	4	0.86	0.6	0.4	0.3	0.3	0.3	0.2	0.2	0.1
9	Spring Creek NW ¼ NW ¼ 17-24N-10E (Buckley Quad)	740	339	2,400	800	11.5	2.6	21	900	101	17	5.52	3.4	2.5	2.1	2.0	1.7	1.3	0.9	0.8

Existing Reservoirs in Iroquois County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Fish Lake	19-27N-13W (Gilman Quad)	R. J. Hofmeister			8	5	9	45	14.7		Constructed by state
Bayles Lake	20-29-24N-10E (Buckley Quad)	Bayles Lake Assn.			36	30	130	2,860	931.8		State Dept. of Cons.
	21-27N-11W (Watscka Quad)	Wilfred Perry	0.8	535	9	7	8.2	25	8.1	0.58	
	4-25N-12W (Milford Quad)	Milford Boy Scouts	0.3	210	7	6	4.8	20	6.5	1.25	
Spring Lake	31-26N-14W (Cissna Park Quad)	J. A. Kanosky & Edgar Swearingen	0.4	258			12.4	74	24.1	3.47	
	7-25N-10W (Milford Quad)	Philip Stewart	0.07	44	5	3	5.2	47	15.3	12.58	Sugar Creek overflow
	26-25N-10E (Buckley Quad)	Buckley Inactive Firemen	0.07	48			4	16	5.2	4.27	
	29-25N-13W (Cissna Park Quad)	Albert Kaufman Farm					4	30	9.8		

IROQUOIS COUNTY



medium gray and yellowish brown silty clay which is locally covered by 1 to 2 feet of fine silty sand. Clay and clay till are visible in several places along the valley walls and probably underlie the silty alluvium in the stream. Sufficient clay or clay till should be available in the vicinity of the dam site for construction of an earth embankment. Although future borings would be required to search for continuous sand lenses, no serious geologic problems are anticipated. This site should result in a very low project cost.

Site 8. A small potential reservoir site exists on a southern tributary of Spring Creek about 2 miles south-east of Onarga. This would make a very narrow shallow lake. The watershed exhibits almost flat uplands and the valley is narrow, moderately steep walled, and V-shaped. Cover in the lake area consists of pasture in the upstream half and timber in the remainder. Three residences are very close to water level and two of these would require new access roads if they were not acquired. A one-lane oiled road crossing the site could be abandoned, but a one-lane concrete road crossing the upper reaches is out of danger. Logs of previous borings in this area indicate that the bedrock surface is overlain by porous sands and gravels overlain by 75 to 100 feet of lake clays and sands. The abutments are probably composed of clayey sand or clay, but this is obscured by vegetation just as the foun-

ation is obscured by a silty clayey alluvium. Although future borings would be required to determine feasibility, no serious geologic problems are anticipated. Clay or clay till should be readily available in nearby deposits for construction of an earth embankment. This site should result in a fair small reservoir at a moderately high project cost.

Site 9. This proposal would actually extend Bayles Lake by maintaining the same spillway elevation and moving the dam 1 mile downstream. In this way the residences around Bayles Lake would not be affected, but the capacity and area of the lake would be greatly increased. Cover in the new portion of the lake consists of scattered timber. No roads nor residences would be involved. Geologic conditions would dictate the feasibility of this new dam site. Logs of previous borings indicate that there is a considerable depth of drift and lake deposits in this area and that the percentage of sandy lake deposits might be higher at the new dam site than at the existing dam site. These interdeposited lake and glacial deposits might provide avenues of leakage or zones of weakness which would detract from the value of this site. A complete program of boring and materials testing would be required to examine the alluvium and foundation materials. The extension of Bayles Lake should result in a low project cost.

KANKAKEE COUNTY

The Kansan, Illinoian, and Wisconsinan glaciers covered Kankakee County. The retreating Wisconsinan left such features as the Marseilles moraine in the southwestern and southern parts of the county and the Valparaiso morainic system in the extreme northeastern part of the county. The glacial drift averages about 100 feet in depth with shallower deposits in the central portion of the county. The drift material is known as till and consists of an unsorted mixture of particles from clay through boulder size. Outwash, a water-sorted deposit more permeable than till, is common along floodplains and the front slopes of moraines. Glacial flood waters were also responsible for the Kankakee swamp

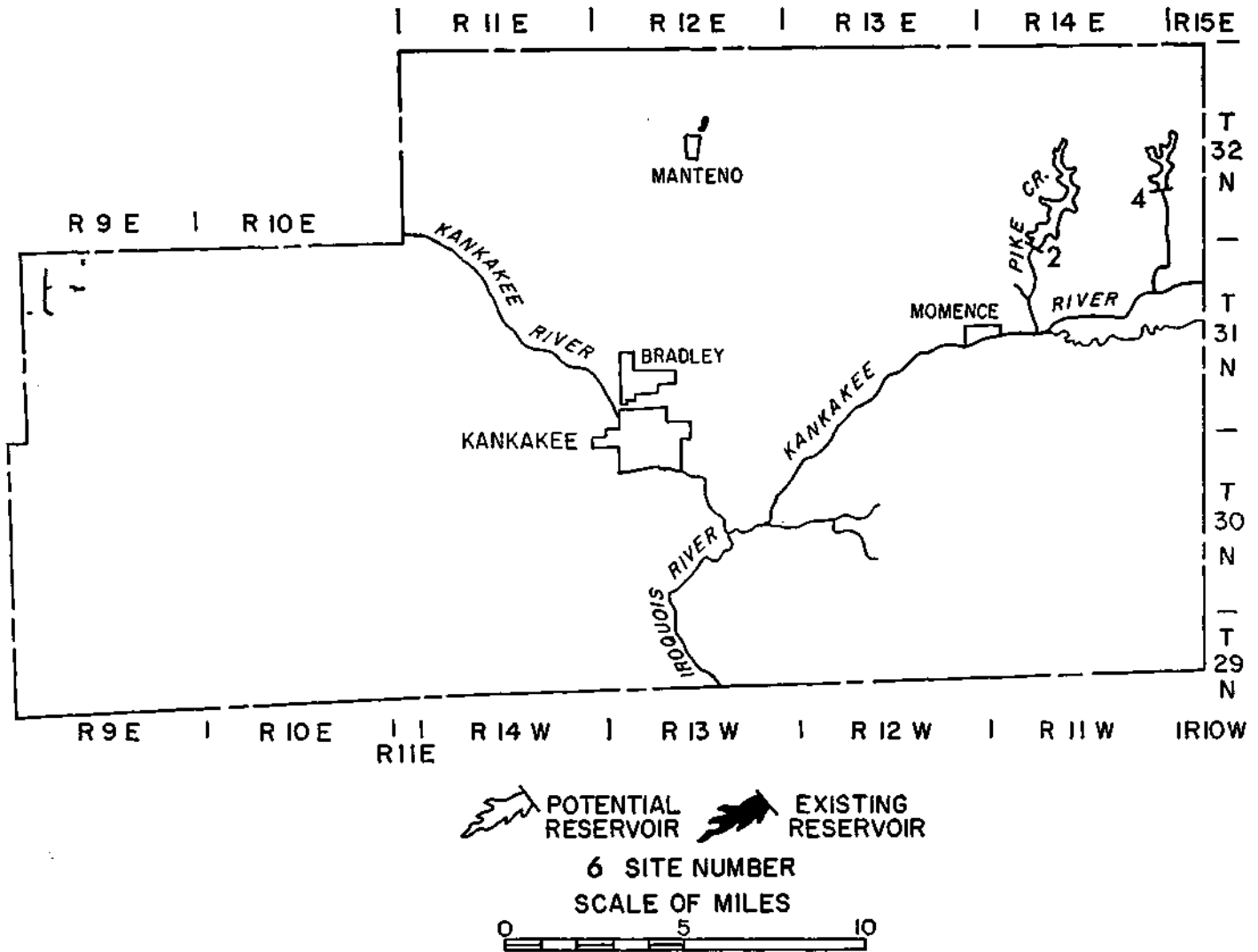
area. The swamp area was extensive prior to 1900, but artificial drainage has made much of this land productive. Deposits of loess, a wind-blown silt, vary from 0 to 3 feet around the county with the deeper deposits resulting in a finer soil than that derived directly from glacial material.

The Kankakee and Iroquois Rivers provide the principal drainage, but they are not deeply entrenched and have poorly developed drainage systems. In most of the county the shallow streams and generally level topography do not offer potential reservoir sites. The results of two feasibility studies in northeastern Kankakee County follow.

Potential Reservoirs in Kankakee County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	Pike Creek Ctr. NE ¼ 5-31N-14E (Mormon and Crete Quads)	670	947	9,800	3,200	22.6	1.2	31	1,500	274	20	10.20	9.6	9.3	7.9	7.4	7.5	6.3	4.9	4.7
4	Trib. Kankakee River NE ¼ SE ¼ 25-32N-14E (Mormon and Crete Quads)	670	339	2,500	800	10.6	2.2	22	1,300	152	8	4.78	3.8	3.2	2.7	2.6	2.4	1.9	1.8	1.7

KANKAKEE COUNTY



Existing Reservoirs in Kankakee County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area			Storage capacity			Remarks and data source
			(sq mi)	(acres)	(ft)	(ft)	(ac-ft)	(mg)	(in)				
Lake Manteno	15-32N-12W (Peotone Quad)	Manteno					45						Old quarry
W. W. Bird Lake	31-31N-12E (Kankakee Quad)	Kankakee					7						Old quarry
Kankakee Quarry	5-30N-13W (Kankakee Quad)	Kankakee Water Co.					14						Old quarry
Lake Metonga	20-29-32N-14E (Momence Quad)	Lake Metonga Spts. Cb.					25						Old quarry
	4-29N-12W (Momence Quad)	St. Ann's Brick & Tile Co.					15						Old clay pit

Site 2. A potential reservoir site exists on Pike Creek with the dam located 2.5 miles north and 1.5 miles east of Momence. The watershed is 12 miles long and only 2 miles wide and has rolling uplands changing gradually into gently sloping valley walls bordering an irregular rolling floodplain. At the proposed elevation there would be considerable shallow water upstream. Three gravel

roads would be inundated, two farm units and one new stone residence would have to be acquired, and a 1-mile section of the Chicago, Milwaukee, St. Paul, and Pacific Railroad would have to be raised. A slight reduction in the water surface elevation would eliminate or reduce the seriousness of all of these problems and greatly increase the economic feasibility of this site. The entire lake area

is under cultivation although timber along the proposed southeastern shore would provide a good recreational area. A preliminary geologic investigation indicates that conditions are favorable for construction of a reservoir in this area. Logs of previous borings indicate that bedrock lies about 50 feet below channel depth at the dam site, and that the overlying glacial material is primarily sandy gravelly till. The abutments and valley walls are covered with a loessial soil development, but a few eroded areas show a clayey sandy glacial till. This material would make an excellent foundation and is readily available for borrow for an earth dam. Future borings would be required to determine the depth and nature of alluvium in the floodplain.

Site 4. A rather shallow lake could be developed on a tributary of the Kankakee River with the dam located just northwest of Sherburnville. The watershed exhibits

gently rolling uplands sloping gently to the banks of the creek with very little floodplain development. The lake area is free from timber and under cultivation, except for a wooded area high on the eastern valley wall. A one-lane gravel road and a frame residence would be inundated on the western side of the reservoir. A superficial examination indicates that geologic conditions are favorable. Bedrock lies about 50 feet below the lake area. Glacial till is known to overlie the bedrock and is probably sandy and gravelly in nature. Eroded areas on the valley walls expose yellowish brown silty till which would provide a source of borrow for the earth dam. Well-sorted sand overlies the lower portions of the abutments and is probably a local valley fill deposit. The depth and areal extent of these deposits were not determined, but are not expected to be great. This site should result in a moderate project cost.

KNOX COUNTY

Knox County was completely covered by several glaciers during the glacial period. The Illinoian is responsible for present topography. The glacial drift deposits average nearly 30 feet deep and contain no continuous morainal ridges. There are two morainal areas in the county, one northwest of Oneida and the other southwest of Yates City. The latter was probably a continuous ridge, but has been cut in two by Spoon and Willow Creeks. The old Sangamon soil was formed on the Illinoian drift and was buried by wind-blown deposits known as loess. The loess was originally fine sediments which were once water borne and deposited on the floodplains of major streams. The depths of the deposits vary from 5 to 50 feet.

The Spoon River drains almost all of the county into the Illinois River. The northwest corner of the county drains into the Mississippi River via Henderson and Pope Creeks. The Spoon River has a valley from 50 to 200 feet or more below the general level of the uplands. The smaller tributary streams have caused considerable erosion resulting in hills and valleys unsuited for clean tilled agriculture. These valleys are usually covered with timber of varying value.

The bedrock surface is of Pennsylvanian age and consists primarily of shale with thin underlying beds of limestone, coal, and locally deposited sandstones.

Potential reservoir sites are well distributed over Knox County. The results of 13 feasibility studies follow.

Site 1. A small lake could be developed on a northern tributary of Henderson Creek about 4 miles northwest of the town of Henderson. Cover in the site consists of

pasture and scattered timber. No roads nor residences would be involved. This site is questionable geologically because of the unknown nature of glacial drift which makes up the valley walls in this area. Future test borings would be required to investigate the nature of this drift and to determine the depth of Pennsylvanian age strata which are known to underlie this area. This site should develop at a low project cost.

Site 2. A potential reservoir site exists on a northern tributary of Walnut Creek with the dam site just east of U. S. Route 34, near the city limits of Altona. At the proposed elevation U. S. Route 34 would have to be raised or relocated, access to one residence would have to be provided, and an east-west road abandoned. Water level would be very close to two other residences. Land use consists of pasture and row crop development. The valley walls consist of till overlain by loess that would provide a suitable material for construction of an earth dam. The floodplain is composed of sand and silt of unknown depth. The dam site is considered probably feasible geologically. Land acquisition and relocations would make this site a moderately high cost project.

Site 3. A reservoir 2 miles long could be developed on a southerly tributary of Walnut Creek just south of U. S. Route 34 between Oneida and Altona. Access to this site is excellent, and only one gravel road would have to be abandoned. With the exception of one wooded area near the southern abutment, this site appears to be about half pasture and half row crop development. The valley walls are composed of till overlain by loess, and

the floodplain consists of yellow clay silt with minor amounts of gravel. The site is considered geologically feasible, and material suitable for an earth dam is available.

Site 4. The broad floodplain of Foreman Creek some 3 miles southeast of Altona could be developed into a reservoir with some possible shallow water problems in the upper reaches. There are only traces of timber in the lake area, but high productivity farmland could make land acquisition costs high. A two-lane gravel road crossing the site could be relocated across the structure, and another two-lane gravel road could be raised in two locations. One farm residence would have to be acquired. This site is probably feasible geologically. The valley walls consist of till overlain by a few feet of clayey silt with a minor amount of pebbles. The floodplain consists of well stratified silt of unknown depth. Material suitable for an earth dam is available.

Site 5. A two-branch reservoir could be developed on a northern tributary of Walnut Creek 6 miles south and 2 miles west of Galva. Nearly the entire lake area is free from timber and under cultivation or in pasture. An east-west gravel road could be relocated across the structure, a north-south road could be abandoned, and an access road would have to be provided for one residence. Four residences are close to water level, but none would be inundated. Shallow water in the upper reaches of the main branch might make a slightly lower spillway elevation necessary. The watershed varies from a system of well developed drainage to a small amount of rolling upland. This site is probably feasible geologically. The valley walls consist of till overlain by loess, and the floodplain of gray alluvial silt. Material suitable for an earth dam is available.

Site 7. A small reservoir could be developed on Snake-don Hollow, a northern tributary of the Spoon River, about 4 miles northwest of Williamsfield. The floodplain is under cultivation, but the valley walls and uplands are wooded and would provide an excellent recreational area. One residence would have to be acquired, and a north-south gravel road could be relocated over the structure. This site is classified as probably feasible geologically. The alluvial plain appears to be silt over sand and gravel. The valley walls consist largely of sandstone, shale, and siltstone formations of Pennsylvanian age overlain by glacial till mantled by loess. The glacial till would provide an excellent source of material for an earth dam. This site should result in a moderately low cost project.

Site 9. A small potential reservoir exists on the upper reaches of Middle Creek about 3 miles northeast of Galesburg. No roads nor residences would be involved. Cover

in the lake area consists of pasture with scattered timber. Good township roads surround this site, and its proximity to Galesburg suggests the possibility of a real estate development. The dam site is classified as probably feasible geologically. The floodplain is gray alluvial silt of unknown depth. The valley walls consist of sandstone overlain with glacial till and several feet of loess. The glacial till would provide a suitable material for an earth dam. This site should develop a small reservoir at a low project cost.

Site 10. A potential reservoir site exists on a southwest tributary of Court Creek 1 mile north of Knoxville. The lake area is in pasture with scattered timber. One gravel road would be the only obstruction. Interstate Route 74 is under construction on the south edge of the lake area. The excellent access to this site along with its proximity to Knoxville and Galesburg makes this a very desirable location. The three branches of this site provide a relatively long shoreline for possible real estate development. The V-shaped valley is considered a probably feasible location for an earth dam. The valley walls are till overlain by loess with bedrock at an unknown but not great depth. Suitable material for an earth dam is readily available.

Site 11. A reservoir could be developed on Haw Creek with the dam site about 2.5 miles south of Knoxville. The reservoir would have two main branches that would extend almost to the city limits of Knoxville. Three north-south roads including a two-lane blacktop could be merged into one crossing. Cover in the lake area consists primarily of pasture with scattered timber. Since the watershed includes portions of Galesburg and Knoxville, pollution might present a problem. Bedrock of Pennsylvanian age forms the lower portions of the valley walls and underlies the floodplain at an unknown depth. The upper portions of the valley walls are till overlain with loess. The dam site is classified as probably feasible geologically.

Site 13. A small potential reservoir site is available on the upper reaches of French Creek about 4 miles south of Williamsfield. Cover in the site consists of about half pasture and half timber. No residences would be involved in this development. Relocation of one gravel road would be required. Existing township roads would provide good access for construction as well as future use. The valley walls consist of till overlain by loess. The till would provide an excellent source of material for an earth dam. The floodplain consists of alluvial silt, sand, and sandstone fragments. This site is classified as possibly feasible geologically.

Site 16. A potential reservoir site exists on a western tributary of Brush Creek about 3 miles northeast of

Abingdon. Cover in the site consists of pasture with scattered timber. One north-south township road would probably be relocated. Bedrock underlies the floodplain area and valley walls at an unknown depth. The walls are composed of till containing a minor amount of scattered gravel overlain by loess. An adequate source of

suitable material for an earth dam is available. This site is classified as probably feasible geologically.

Site 17. A potential reservoir site exists on Indian Creek about 3 miles south and 2 miles west of Abingdon. This would be a long narrow lake with shallow water in

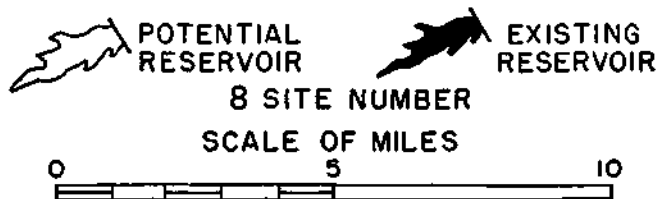
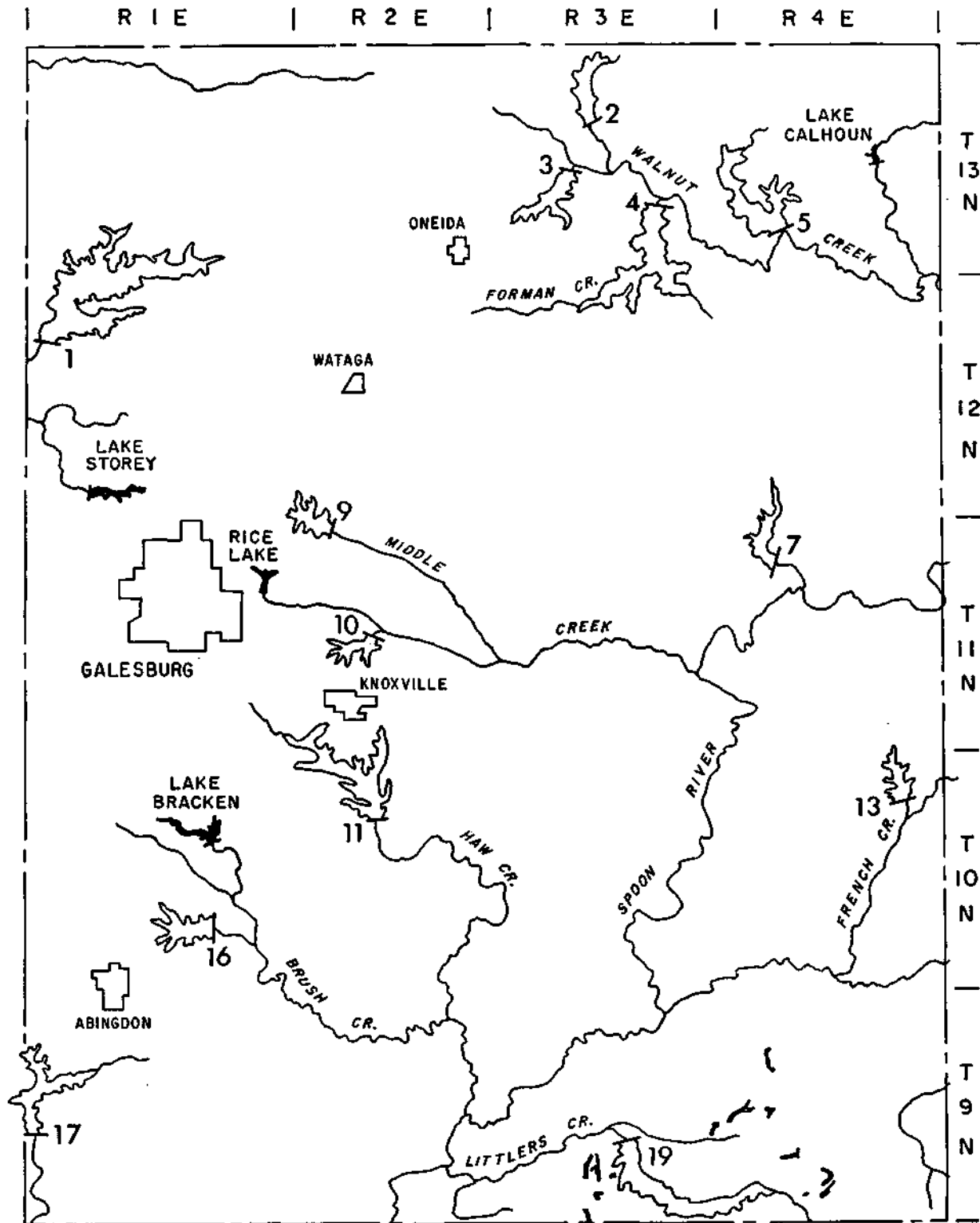
Potential Reservoirs in Knox County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Henderson Creek SE ¼ SE ¼ 32-13N-1E (Woodhull Quad)	740	154	2,104	700	3.4	.7	41	600	116	6	1.26	1.2	1.1	1.0	0.9	1.2	0.8	0.7	0.6
2	Trib. Walnut Creek NW ¼ NE ¼ 16-13N-3E (Galva Quad)	750	192	1,664	500	6.1	1.6	26	850	119	7	2.34	2.2	1.5	1.3	1.1	1.2	1.0	0.6	0.5
3	Trib. Walnut Creek SW ¼ NW ¼ 21-13N-3E (Galva Quad)	750	294	3,330	1,100	5.7	0.7	34	900	172	10	2.18	2.0	1.9	1.8	1.6	2.0	1.3	0.9	0.8
4	Foreman Creek SE ¼ NW ¼ 26-13N-3E (Galva Quad)	730	742	7,420	2,400	26.5	1.5	30	850	140	16	10.14	9.8	6.9	5.6	5.2	5.6	4.5	2.9	2.6
5	Trib. Walnut Creek NW ¼ SE ¼ 29-13N-4E (Galva Quad)	720	583	7,760	2,500	10.9	0.6	40	800	187	14	4.17	3.8	3.7	3.6	3.5	3.8	2.8	2.6	2.3
7	Snakeden Hollow NW ¼ NE ¼ 8-11N-4E (Maquon Quad)	660	326	6,510	2,100	10.4	0.7	60	900	446	7	3.98	3.8	3.7	3.6	3.3	3.8	2.8	2.5	2.1
9	Middle Creek NE ¼ NE ¼ 5-11N-2E (Galesburg Quad)	780	102	1,360	400	3.7	1.2	40	550	138	5	1.42	1.4	1.1	1.0	0.9	1.0	0.7	0.5	0.4
10	Trib. Court Creek NE Corn. 21-11N-2E (Galesburg Quad)	700	166	2,320	800	3.8	0.7	42	700	194	7	1.45	1.4	1.3	1.2	1.1	1.4	0.9	0.8	0.7
11	Haw Creek NW ¼ SW ¼ 10-10N-2E (Galesburg Quad)	690	627	10,030	300	18.5	0.8	48	500	96	13	7.08	6.8	6.4	5.8	5.6	6.6	4.5	3.5	3.2
13	French Creek E line N ½ 11-10N-4E (Maquon Quad)	680	154	2,412	800	3.8	0.7	47	800	253	6	1.45	1.4	1.3	1.2	1.1	1.4	1.0	0.9	0.7
16	Trib. Brush Creek SE ¼ NE ¼ 26-10N-1E (Galesburg Quad)	680	205	2,595	800	4.5	0.7	38	650	141	9	1.72	1.6	1.5	1.4	1.3	1.6	1.0	0.8	0.7
17	Indian Creek Ctr. W ½ 19-9N-1E (Galesburg Quad)	640	435	6,380	2,100	14.0	0.9	44	500	138	14	5.36	5.2	4.5	4.1	3.8	4.6	3.0	2.3	2.1
19	Litlers Creek Ctr. S ½ 22-9N-3E (Canton Quad)	620	768	13,563	4,400	22.4	0.7	53	1,400	528	18	8.58	8.2	8.0	7.4	6.9	8.1	5.7	5.3	4.3

Existing Reservoirs in Knox County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
CB&Q Res.	20-13N-1E (Woodhull Quad)	CB&Q R.R.	0.15	95			7.7		15		III. Water Survey Bull. 31; at Rio
Lake Storey	32-33-34-12N-1E (Galesburg Quad)	Santa Fe R.R.	7.9	5,056			162.5		690		III. Water Survey Bull. 31; near Galesburg
Rice Lake	7-11N-2E 12-11N-1E (Galesburg Quad)	CB&Q R.R.	3	1,900			70.3		275		III. Water Survey Bull. 31
Highland Lake	18-11N-2E (Galesburg Quad)	CB&Q R.R.	0.2	150			25		32		III. Water Survey Bull. 31
Lake Bracken	10-11-12-14-10N-1E (Galesburg Quad)	CB&Q R.R.	8.9	5,700	49	32	181	2,452	799	5.17	1949 Sed. Survey
Calhoun Lake	14-23-13N-4E (Galva Quad)	Galva C. Cb.	13.1	838	28		50.2	112	36	0.16	1947 Sed. Survey; quite shallow at dam
Purinton Lake No. 1	17-11N-2E (Galesburg Quad)	East Galesburg	0.7	420			5.8		35		III. Water Survey Bull. 31; quite shallow at dam
Purinton Lake No. 2	17-11N-2E (Galesburg Quad)	East Galesburg	1	650			12.5		65		III. Water Survey Bull. 31; quite shallow at dam
Horseshoe Lake	26-35-10N-2E (Maquon Quad)										Natural swamp
Knox Co. Cons. Cb.	36-9N-1E (Avon Quad)	Knox Co. Cons. Cb.	0.4	266	32	23.2	6.3	55	18	2.58	Soil Cons. Serv.

KNOX COUNTY



the upper reaches. The watershed includes most of the town of Abingdon and this could create a pollution problem. The lower portion of the lake area is under cultivation, and the upper fingers are in pasture with scattered timber. Township roads would be inundated in three locations. No residences would be involved. A rock quarry downstream from the dam site exposes a ledge of irregularly bedded, considerably fractured limestone of Pennsylvanian age, which is overlain by till mantled by loess as much as 20 feet thick. Material suitable for an earth dam is available. The dam site is classified as probably feasible geologically.

Site 19. A large potential reservoir site is available on Littlers Creek about 4 miles southeast of Maquon. The

watershed contains the city of Farmington and an active coal strip mining area, creating a potential pollution problem. The lake area is primarily under cultivation, and timber is restricted to portions of the valley walls and stream banks. Development would inundate two north-south gravel roads, an east-west gravel road, and three frame residences. No bedrock is exposed in the dam area, but Pennsylvanian age formations are known to underlie this area. The valley walls appear to be till overlain by loess. The stream bed shows silt, sand, and sandstone fragments up to cobble size. Suitable material for an earth dam is available. Although the site is classified as probably feasible geologically, future borings would be required to determine the nature and depth of bedrock.

LIVINGSTON COUNTY

Livingston County is underlain by bedrock of Pennsylvanian age. Pennsylvanian rocks are predominantly shale, but may contain thin layers of limestone, coal seams, and sandstone. Surface features in the bedrock include the Chatsworth and Kempton bedrock valleys in the northeast, and the Danvers valley along the western edge.

The Kansan and Illinoian glaciers filled these valleys with drift. The present topography was later formed by the Wisconsinian glacier. An unsorted mixture of clay through boulder size particles, known as till, makes up most of the glacial drift. There are large areas of outwash in the water sorted and deposited material along the Vermilion Eiver. Soils in most of the county were developed from loess, a wind-deposited silt varying in thickness from 2 feet in the south to 6 feet in the north.

There is very little relief in the county, and drainage is from southeast to northwest by the Vermilion Eiver. Drainage from the northeastern portion of the county reaches the Illinois River by small tributaries of the Mazon Creek.

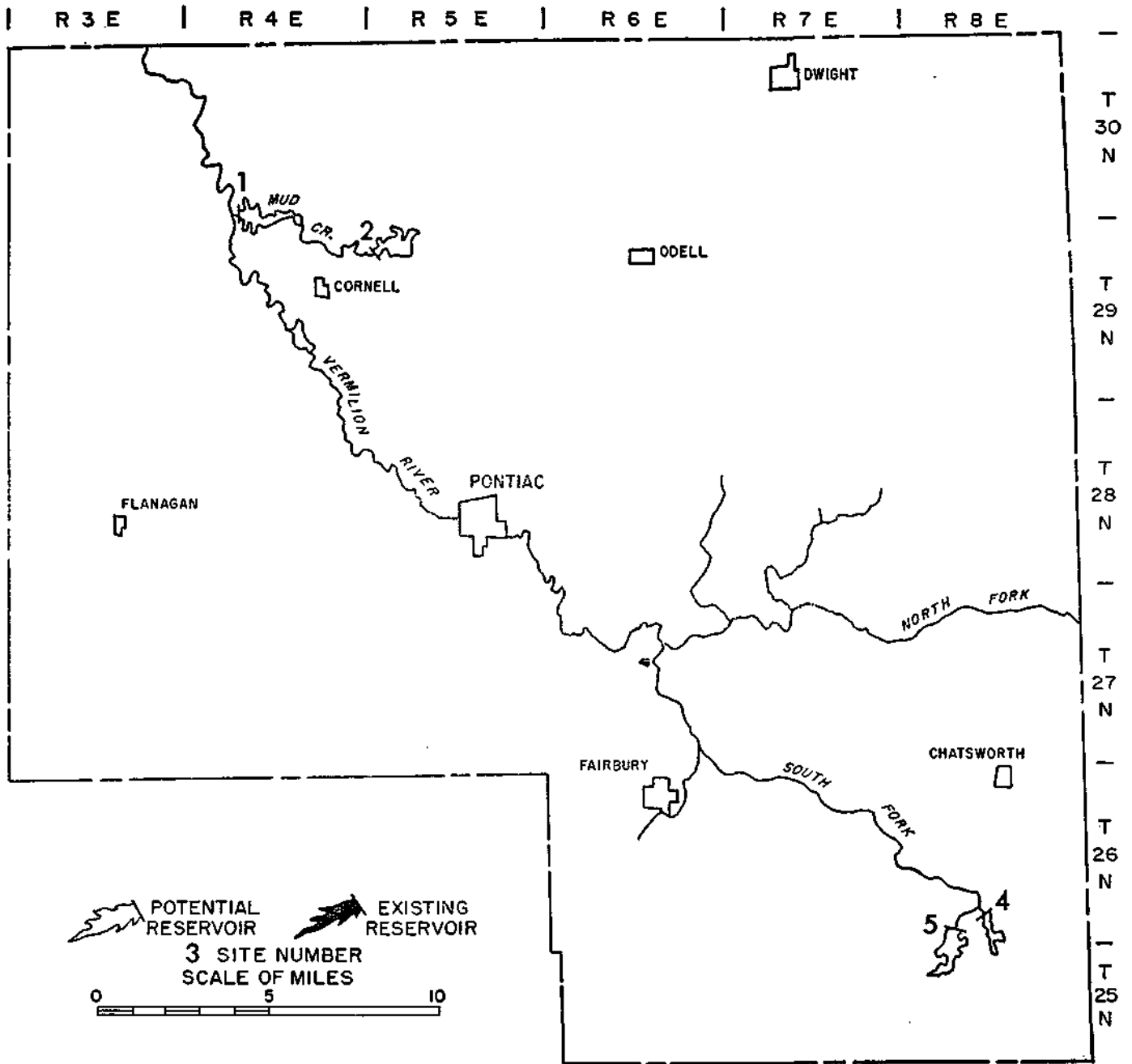
Because of the shallow streams in Livingston County, only relatively small reservoir sites are available. The results of four feasibility studies follow.

Site 1. A reservoir could be developed on Mud Creek by construction of a dam about 1500 feet upstream from its confluence with the Vermilion Eiver. The watershed exhibits very gently rolling uplands in the vicinity of the lake and rolling uplands with an irregular drainage pattern upstream on the front slope of the Chatsworth moraine. Cover in the site is brushy pasture and a few clean tilled fields. Most of the buildings that make up the Holiness Tabernacle would have to be acquired or moved, and a two-lane gravel road raised. These relocations, the low storage capacity, and shallow water in the upper reaches make this a poor site physically and economically. A preliminary geologic examination shows the site to be probably feasible with no serious problems anticipated. The lower 5 to 6 feet of the abutments and valley floor are composed of gray siltstone which is overlain by dark brown clayey till. Local outwash deposits

Potential Reservoirs in Livingston County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times per filled year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Mud Creek SW ¼ NE ¼ 32-30N-4E (Odell Quad)	610	397	4,100	1,300	32.5	4.0	31	1,000	171	15	4.42	4.2	3.0	2.5	2.3	2.9	1.8	1.3	1.3
2	Mud Creek Ctr. SW ¼ 6-29N-5E (Odell Quad)	650	339	2,500	800	21.5	3.7	23	350	41	15	8.48	4.0	3.2	2.6	2.5	1.7	1.4	0.9	0.9
4	S. Ek. Vermilion River NW ¼ NE ¼ 33-26N-8E (Sibley Quad)	745	224	1,900	600	12.2	2.9	26	1,000	135	7	5.02	2.8	2.1	1.7	1.7	1.2	1.0	0.8	0.7
5	Trib. Vermilion River Ctr. 32-26N-8E (Sibley Quad)	745	205	1,800	600	3.2	0.8	26	1,900	279	5	1.32	1.2	1.1	0.8	0.7	1.0	0.6	0.5	0.4

LIVINGSTON COUNTY



Existing Reservoirs in Livingston County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
	8-30N-7E (Dwight Quad)	Dwight					10				State borrow pit
	15-27N-6E (Pontiac Quad)	Mrs. Ada Cheeseboro					13				Old gravel pit
	10-26N-6E (Colfax Quad)	Conrad Munz					4				Old gravel pit
Turtle Pond	33-34-26N-8E (Sibley Quad)	Mrs. O. O. Oliver	7.5	4,800			42				
Ziller Pit	16-27N-6E (Pontiac Quad)	Wayne Ziller					22				Old gravel pit

should be removed where they occur beneath the dam. Sufficient good quality borrow should be available from nearby till deposits. Back water from the Vermilion River should be a consideration in the design of the embankment.

Site 2. A reservoir could be developed 2 miles northeast of Cornell on the head waters of Mud Creek, but shallow water would be objectionable. Most of the watershed lies on the front slope of the Chatsworth moraine which would contribute heavily to an early sedimentation problem at this site. A large portion of the lake area is in timber, indicating that low land costs may be offset by high clearing costs. One two-lane gravel road could be abandoned and another raised in two or three places. No particular problems were revealed during a preliminary geologic examination, but a complete program of borings would be required to search for outwash and glacial lake silts which should be expected in this area. The abutments have moderately steep slopes and are composed of brown clay till. The stream bed shows only silt to a depth of about 6 feet. Neither the extent of the alluvium nor the nature of the bedrock surface was determined. Borrow should be readily available from the nearby till deposits.

Site 4. A small reservoir could be developed on the head waters of the South Fork Vermilion River by taking advantage of Turtle Pond to limit shallow water. At the time the site was inspected this pond was dry. Optimum water level can be determined only after a more detailed survey, but it is probably within 2 or 3 feet of the suggested spillway elevation. The selection of a water surface elevation would have an effect on the

dam location since the left abutment is very gently sloping. A one-lane gravel road would probably be raised, but no other man-made obstructions would be involved. A preliminary examination indicates that geologic conditions are favorable. A bedrock valley is known to underlie this area and the depth of glacial material, primarily till, may exceed 300 feet. The abutments are assumed to be clayey till, but the depth to this material at the stream line was not determined. The creek banks show 5 to 6 feet of silty sandy alluvium. Good quality till should be readily available in the nearby deposits. This site should develop at a moderately low to low project cost.

Site 5. A good potential reservoir exists on a tributary of the Vermilion River 4 miles west and 2 miles north of Strawn. The watershed consists of rolling uplands and a broad valley surrounded by fairly steep valley walls. The lake area is unusually compact since three short valleys would open into a wide pool just above the dam. A one-lane gravel road and one residence would be inundated, but cost of land acquisition should be low. Agricultural development in the valley is minor since large areas of the bottomland are swampy. This area is known to be underlain by a bedrock valley that is filled with glacial material, primarily till, which may exceed 300 feet in thickness. The abutments and valley floor are probably composed of clayey till, but this material is obscured by loess on the slopes and silty alluvium on the valley floor. A complete program of testing and boring would be required to locate possible outwash deposits and explore foundation conditions. An adequate source of borrow should be available from the nearby till deposits. This site should result in a low project cost.

LOGAN COUNTY

The bedrock surface in Logan County is composed of strata of Pennsylvanian age. Pennsylvanian bedrock consists of shale underlain by thin layers of limestone, coal seams, and sandstone. Two major features of this hidden surface are the Middleton bedrock valley through the southwestern part of the county and the Mahomet bedrock valley across the extreme northern edge.

Drift was deposited over the entire county by the Illinoian glacier, and in the northeastern corner by the Wisconsinan glacier. Drift is primarily till, an unsorted mixture of particles from clay through boulder size. Flood waters from the Wisconsinan were instrumental in depositing deep alluvial plains along Kickapoo and Salt Creeks. The farthest advance of the Wisconsinan may still be seen by the existence of the Shelbyville moraine. Sand and gravel deposits, known as outwash, are common just south and west of this formation. Late in the final glacial stages a fine grained material, known as loess, was deposited by wind over the county to an average depth of 5 feet.

All runoff from the county is through Kickapoo and Salt Creeks to the Sangamon River.

In general the streams are too shallow for good reservoir development, but a few sites are available. The results of five feasibility studies follow.

Site 1. A good small site is available on a tributary of West Fork Sugar Creek with the dam located about 2 miles southwest of Armington. One township road crossing the site could be raised. U. S. Route 136 passes very near the southern shoreline and dam site providing excellent access. Cover in the lake area is generally pasture with scattered timber. The watershed consists of gently rolling uplands on the backslope of the LeRoy moraine entrenched with a well developed dendritic valley system. Bedrock is covered by about 175 feet of drift capped by loess. The abutments and valley walls are probably composed of till but this is obscured by loess and vegetation. Nearby deposits of clayey till should be available for borrow. A surficial examination and logs of previous borings indicate that no geologic problems would be encountered. The site is probably feasible, subject to verification by an adequate program of test borings. This site should make a good small reservoir at a low project cost.

Site 2. A long, very narrow reservoir could be developed on a tributary of Kickapoo Creek about 3 miles east of Atlanta. Three township roads cross the site. One of the roads could be raised, one abandoned, and the other relocated over the structure. About three-fourths of the lake area is under cultivation and the remainder in pasture. Most of the uplands are a portion of the loess-covered Shelbyville moraine and slope di-

rectly into the valley system. Logs of previous borings show that bedrock in this area is covered with about 130 feet of glacial drift, primarily till. A surficial examination indicates that the abutments are composed of till, although this material is obscured by loess and vegetation. It is further believed that till underlies the alluvium at relatively shallow depths and should be within reach of an impermeable core wall. Sufficient till should be available from the valley walls for borrow. These findings are subject to verification by test borings, but no serious geologic problems are anticipated. This site should result in a moderately high project cost.

Site 3. A very small reservoir could be developed 2.5 miles southwest of Waynesville on an intermittent tributary of Kickapoo Creek. No roads nor residences would be involved. Cover in the site area consists primarily of pasture. Access would be the most difficult problem at this location since the dam site is at least 0.5 mile from the nearest township road. The watershed lies on two plateaus of the loess-covered Shelbyville moraine. Logs of previous borings indicate that bedrock is covered by 200 feet of glacial drift and that at least the top 60 feet is an impermeable clayey material. The abutments and valley walls slope gradually from the creek banks to the uplands and are basically till overlain by loess. Till is expected to underlie the alluvium at very shallow depths and to be readily available for construction of an earth dam. These geologic findings are subject to verification by test borings, but no serious problems are anticipated. This site should develop at a low project cost.

Site 5. A good potential reservoir site exists on a tributary of Salt Creek 4 miles north and 2 miles west of Elkhart. The watershed is divided into two nearly equal branches lying on the gently undulating Buffalo Hart drift plain. Two two-lane gravel roads and a residential access road would be inundated. One farm unit probably would have to be acquired. Existing township roads would provide good access to several points on the lake and could easily be tied into an around-the-lake road system. Logs of previous borings indicate that 12 feet of loess or sand overlies till which extends to a depth of 70 feet. A bedrock valley is known to underlie this area so that the bedrock surface may be 250 feet deep. Permeable deposits in the buried valley are blanketed with till. Till also forms the core of the abutments and should be available in sufficient quantity to form the earth fill. Although these findings are based on a surficial examination and are subject to verification by borings, no serious problems are anticipated.

Potential Reservoirs in Logan County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. W. Fk. Sugar Creek Ctr. SW ¼ 33-22N-2W (Minier Quad)	620	173	1,200	400	9.0	3.2	21	800	89	6	3.50	1.9	1.6	1.0	0.8	1.2	0.8	0.5	0.4
2	Trib. Kickapoo Creek NW ¼ NW ¼ 25-21N-1W (McLean Quad)	660	147	1,100	300	6.0	2.2	22	800	95	5	2.09	1.4	1.2	0.8	0.7	0.7	0.6	0.4	0.3
3	Trib. Kickapoo Creek SW ¼ NW ¼ 1-20N-1W (Kenney Quad)	670	58	600	200	2.2	1.5	29	800	129	2	0.77	0.7	0.5	0.4	0.3	0.4	0.3	0.2	0.1
5	Trib. Salt Creek SW ¼ NW ¼ 26-19N-4W (Mason City Quad)	570	390	3,800	1,200	7.4	0.9	29	800	129	10	3.13	2.9	2.6	1.9	1.7	2.6	1.6	1.2	1.1
6	Trib. Salt Creek Ctr. SW ¼ 18-19N-3W (Lincola Quad)	560	58	500	200	2.8	2.4	28	800	121	2	1.18	0.9	0.6	0.5	0.4	0.5	0.4	0.3	0.2

Existing Reservoirs in Logan County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity		Remarks and data source	
			(sq mi)	(acres)				(ac-ft)	(mg)		(in)
Lincola Lake	1-19N-3W (Lincoln Quad)	Lincoln Sand & Gravel Co.	0	75	7-10	10-30	176			1957 lake data	
	26-19N-4W (Mason City Quad)	John White	0.12	75	15	12	8	48	15.6	7.50	Topographic map
	14-19N-1W (Kenney Quad)	John Gardner	0.19	125	5	6	3	18	5.9	1.78	Topographic map
Applegate Pond	29-21N-1W (Kenney Quad)	Allen Applegate	0.27	175	21	14	5	24	7.8	1.66	

Site 6. A very small reservoir could be developed on a tributary of Salt Creek 3.5 miles south and 6 miles west of Lincoln. The uplands lie on the nearly flat Illinoian drift plain. A previous boring northeast of the dam site indicates 48 feet of glacial material resting on the bedrock surface. The stream is flowing in a 2- to 6-foot notch composed of shale and weathered rock fragments. The abutments appear to be a yellowish brown silty clayey till, mantled with 4 to 6 feet of loess. Good

quality till for borrow should be readily available from nearby deposits. A complete program of test borings would be required to verify the above geologic findings; however, no serious problems are anticipated. No roads nor residences would be involved in this development. The lake area is undeveloped, and at least three-fourths of the cover is timber. This site is classified as feasible and should be developed at a low project cost.

MACON COUNTY

The bedrock surface in Macon County is composed entirely of Pennsylvanian age strata consisting of shale underlain by layers of limestone, coal seams, and locally developed sandstones. Topographical features include the Middletown bedrock valley across the southwestern portion of the county and the Mahomet bedrock valley near the northeastern corner.

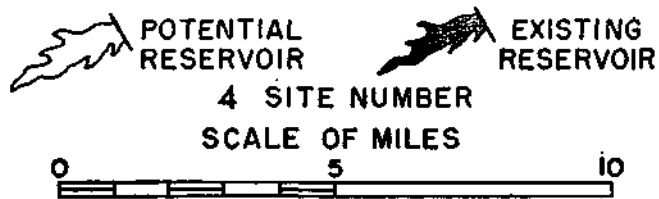
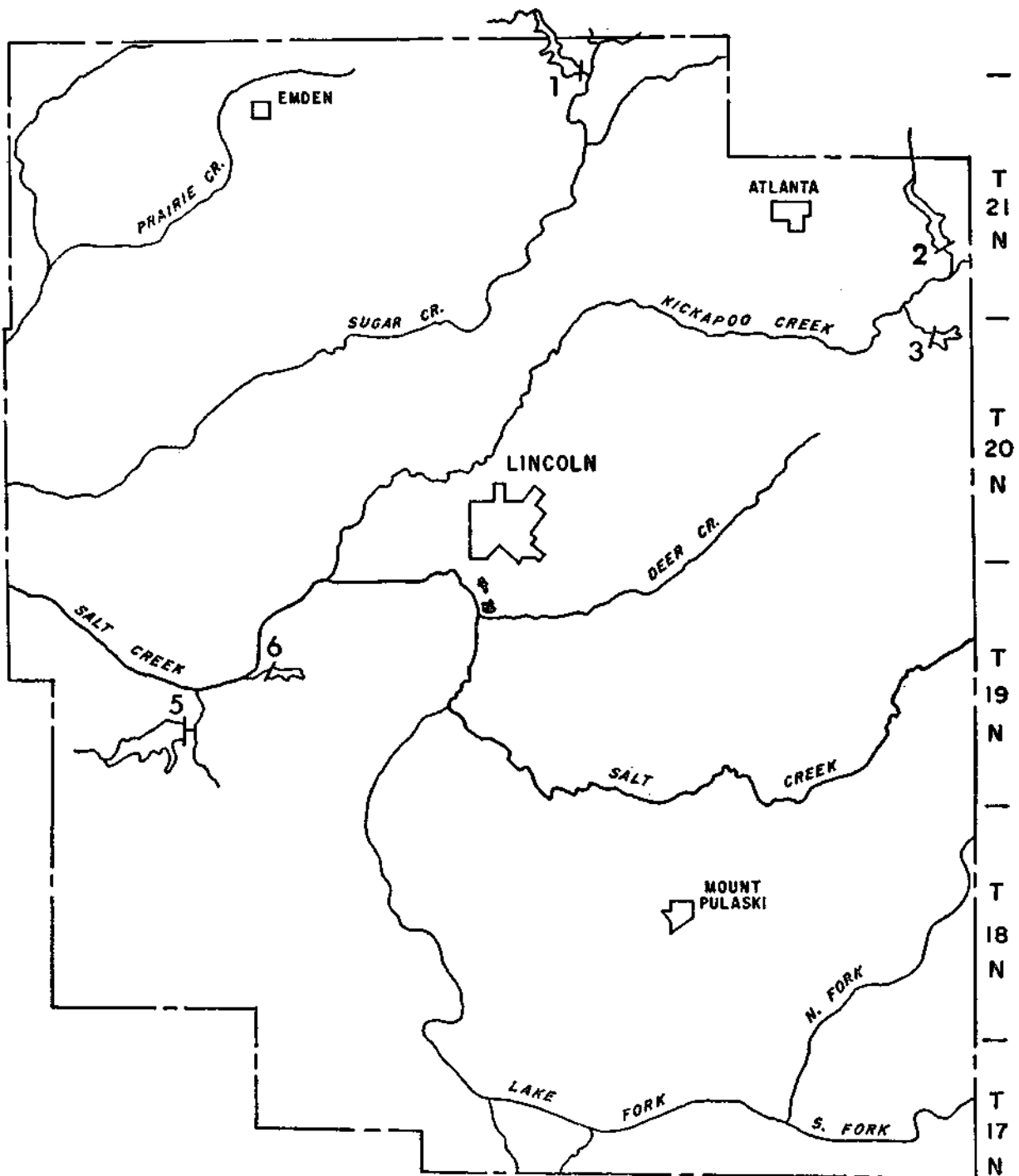
The bedrock valleys have been filled with unconsolidated drift from the Kansan and Illinoian glaciers. The Wisconsin was the last glacier to enter Illinois and covered the eastern two-thirds of Macon County. The Shelbyville moraine extending in a north-south direction across the state marks the farthest advance of the Wis-

consinan. A Wisconsinan moraine, the Cerro Gordo, is visible along the eastern edge of the county. Shallow sands and gravels, known as outwash, are common along the front slopes of the moraine. Loess, a wind-blown silt deposit, was a big factor in soil development. The western portion of the county was covered with loess varying from 4 to 7 feet thick, but the eastern portion received less than 3 feet.

Macon County is drained by the Sangamon River and its tributaries, except for a small northwestern part of the county which is drained by Salt Creek.

The Lake Oakley project (U. S. Corps of Engineers) is a major development for this part of the state and a

LOGAN COUNTY



good example of a large reservoir site. Several smaller potential sites are available on tributaries to the Sangamon River. The results of 10 feasibility studies follow.

Site 1. A shallow lake could be developed on the upper reaches of the North Fork, 4 miles west of Maroa. The watershed exhibits rolling uplands that slope very gradually into the valley bottom. The reservoir area is in pasture or row crop development. A two-lane blacktop road crossing the site could probably be raised, and one residence would have to be acquired. Geologic conditions appear to be favorable. The abutments and valley walls are composed of glacial till overlain by loess. The floodplain merges almost imperceptibly with the valley walls. Depth of loessial deposits in this area was not determined. The underlying till could be used to form the foundation of the dam, and also for the earth fill. Loess can probably be mixed with the till for forming the flanks of the dam but till alone should be used in the core. This site should develop at a moderately high project cost.

Site 2. A dam across Friends Creek, about 2 miles north and 1 mile east of Argenta, would create a two-fingered lake reaching almost to the DeWitt-Macon County line. Shallow water in the upper reaches of the lake would be a problem. The watershed is somewhat large for the reservoir capacity. It exhibits gently rolling uplands of the Shelbyville till plain that slope gradually to the creek banks, with the exception of a steep bank along the south shore of the lake. Cover in the lake area consists of about half pasture and half row crop, but there are a few timbered areas. A two-lane gravel

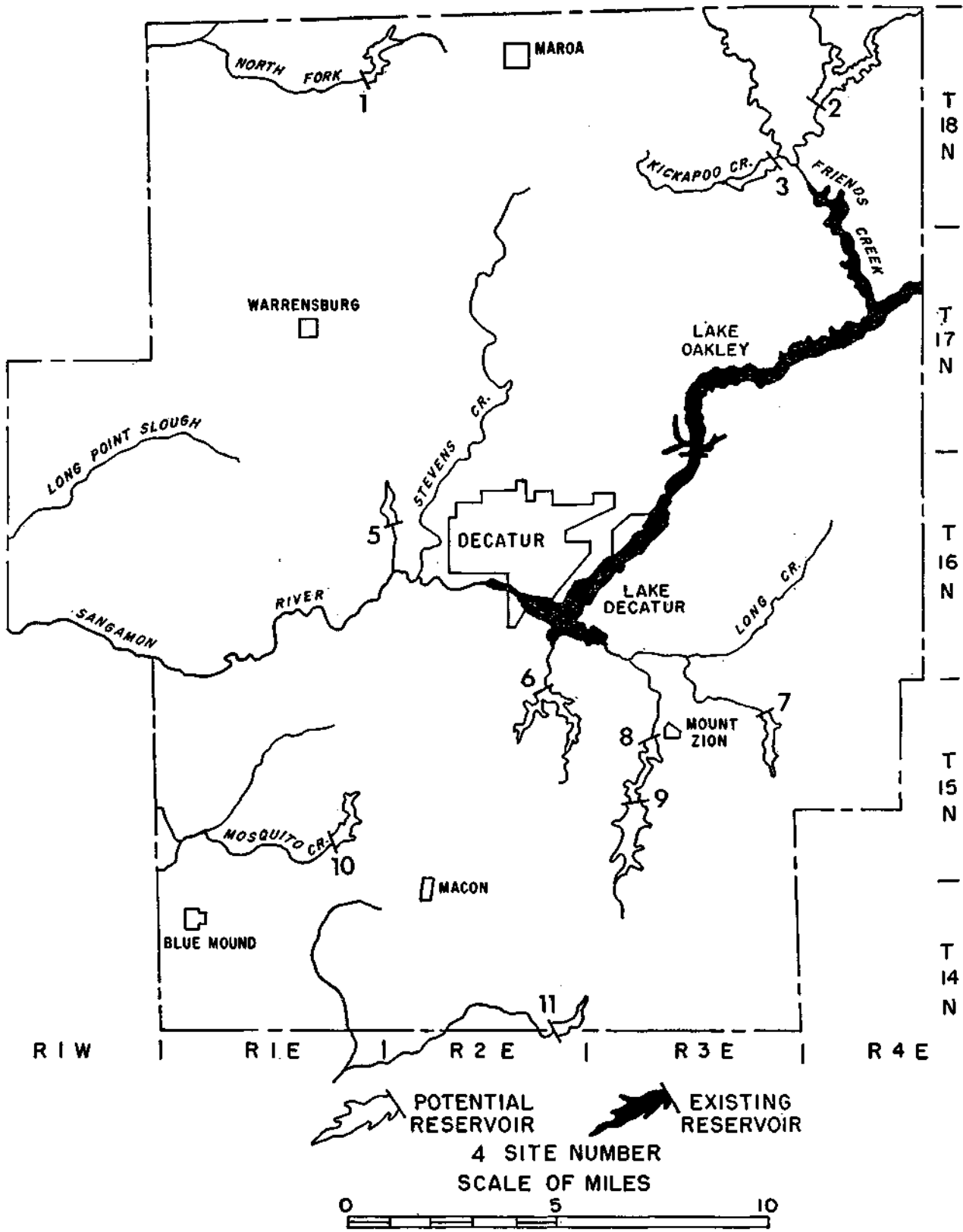
township road could be raised or abandoned and a one-lane blacktop could be raised. Several residences would border the lake, but none would be inundated. The abutments are composed of yellowish brown clayey till overlain by a thin veneer of sand and by loess on the higher gentler slopes. The stream flows in a 6-foot notch which consists of 4 feet of dark gray silt over 2 feet of grayish brown colluvium. Till, similar to that in the abutments, probably underlies this colluvium but the depth was not determined. A sufficient quantity of suitable borrow material is available in the nearby till deposits.

Site 3. A small reservoir could be developed on Kickapoo Creek with the dam 0.5 mile north of the Argenta city limits. The watershed consists of a part of the Shelbyville moraine which is very flat although hummocky in places, and a shallow V-shaped valley. If relocation of a two-lane blacktop road were considered economically feasible, a better dam site exists 0.25 mile downstream. An access road would need improvement at the proposed upstream location, and one residence is very close to the right abutment. There is some pasture with scattered timber in the downstream half of the site but the remainder is under cultivation. Costs should be moderate for the upstream location but would probably be relatively high for the site farther downstream. Geologic conditions seem to be favorable for development of a site in this area. Final determination would depend on verification by an adequate program of boring and materials testing. A yellowish orange silty glacial till deposit very likely forms the core of the abutments and underlies the valley floor. The till is generally obscured by loess

Potential Reservoirs in Macon County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	North Fork NE ¼ SE ¼ 12-18N-1E (Kenney Quad)	680	224	2,000	700	17.9	4.3	27	800	119	9	7.77	3.3	2.6	1.7	1.4	1.8	1.4	1.0	0.7
2	Friends Creek NW ¼ SW ¼ 18-18N-4E (Maroa Quad)	670	442	3,500	1,200	60.5	8.4	24	650	85	18	26.62	5.6	4.3	3.6	3.4	2.6	1.9	1.2	1.2
3	Kickapoo Creek NE ¼ NE ¼ 26-18N-3E (Decatur Quad)	670	83	600	200	5.8	4.7	22	550	64	4	2.55	0.9	0.7	0.6	0.5	0.4	0.2	0.2	0.2
5	Trib. Sangamon River NW ¼ SE ¼ 7-16N-2E (Niantic Quad)	650	64	700	200	2.5	1.9	32	650	119	4	1.17	0.9	0.7	0.5	0.4	0.5	0.4	0.3	0.2
6	Sand Creek NW ¼ NW ¼ 1-15N-2E (Decatur Quad)	660	403	6,600	2,100	13.5	1.1	49	1,150	398	15	6.33	6.1	5.4	3.7	3.5	4.4	3.5	2.5	2.1
7	Big Creek NE ¼ SW ¼ 1-15N-3E (Decatur Quad)	670	115	800	200	8.9	6.1	20	900	95	5	4.17	1.3	1.0	0.9	0.8	0.6	0.4	0.3	0.3
8	Finley Creek NW ¼ NW ¼ 9-15N-3E (Decatur and Dalton City Quads)	670	390	4,700	1,500	19.8	2.2	36	900	199	10	9.28	6.9	5.3	4.0	3.5	3.6	2.7	2.2	1.9
9	Finley Creek Cr. SE ¼ 17-15N-3E (Dalton City Quad)	690	499	5,200	1,700	16.0	1.6	31	1,200	198	15	7.50	6.9	5.2	3.5	3.3	3.6	2.4	1.9	1.6
10	Mosquito Creek SE ¼ SE ¼ 23-15N-1E (Assumption Quad)	650	205	1,800	600	6.3	1.8	27	700	101	5	2.95	2.5	1.9	1.3	1.2	1.3	0.8	0.7	0.6
11	Long Grove Creek Cr. SW ¼ 13-14N-2E (Dalton City Quad)	690	102	700	200	4.8	3.5	21	1,150	126	3	2.25	1.1	0.8	0.6	0.5	0.5	0.4	0.3	0.3

MACON COUNTY



on the abutments and an undetermined thickness of silty alluvium on the floodplain. The till in nearby deposits should also supply material for an earth fill, although some loess may be suitable for flanks of the dam.

Site 5. A good small lake site exists just 3.5 miles west of the center of Decatur on a tributary of the Sangamon River. Although the lake is in a rapidly expanding area, only two residences would have to be acquired. Access

Existing Reservoirs in Macon County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Decatur	16-17N-2-3E (Decatur Quad)	Decatur	906	579,800	41	28	2,604	14,077	4,586	0.29	1956 sed. survey
South Side C. Cb. Lake	28-16N-2E (Decatur Quad)	South Side C. Cb.	1.5	960	20	5	8.6				Ill. Div. of Fisheries
Grange Fishing Club							31				Ill. Div. of Fisheries

to the site is quite good but a two-lane oiled road would have to be raised or abandoned. Cover in the site consists of pasture and scattered timber. The watershed contains a gently rolling area of the Shelbyville moraine and a moderately steep walled, meandering V-shaped valley. A surficial examination indicates that geologic conditions are feasible. The abutments and valley walls consist of light brown glacial till overlain by loess. The alluvium consists mostly of silt and sand, probably underlain at shallow depths by till. Sufficient quantities of till are readily available for construction of an earth dam.

Site 6. A dam across the upper reaches of Sand Creek, about 4 miles south of downtown Decatur, would create a good two-fingered reservoir in a rapidly developing area. Many new homes have been built in and around the lake area and about six homes would probably be inundated. A two-lane blacktop and a one-lane blacktop road would be inundated in two places. Although cover in the lake area consists of pasture with scattered timber, land costs in this area would probably be high. The watershed consists of gently rolling uplands on the Shelbyville till plain and deeply entrenched moderately steep walled valleys. A surficial examination indicates that geologic conditions are good; however, a more detailed study would be required to determine the economic feasibility of this site. Deep sand and gravel deposits exist in this area but are heavily overlain by till which effectively seals off any leakage to the lower permeable strata. Depth of alluvium at the dam site was not determined, but it is no doubt underlain by till at moderate depths. Clayey glacial till forms the abutments and valley walls, and would be available as borrow for the earth fill. This site should develop at a high project cost.

Site 7. A small shallow reservoir could be developed on the upper reaches of Big Creek about 8 miles south-east of Decatur and 3 miles east of Mt. Zion. The watershed is composed of gently rolling uplands which slope gradually into shallow gently sloping valleys that increase in steepness and depth downstream. Cover in the lake area consists of pasture in the upper reaches, and cultivated patches and increasing timber downstream. A two-lane blacktop road would have to be raised and one dwelling would have to be acquired. A preliminary

geologic examination indicates that conditions are favorable for an impoundment in this area. The abutments and valley walls are composed basically of a silty clayey glacial till which also underlies the alluvial floodplain at an undetermined depth. Till and deeper sand and gravel deposits are known to be 200 feet deep in this area. An adequate supply of suitable borrow material is available in the nearby silty clayey till. This site should produce a small reservoir at a moderate project cost.

Site 8. A good potential reservoir site exists on Finley Creek with the dam located 0.5 mile southwest of Mt. Zion. The watershed lies within a very gently rolling section of the till plain behind the Shelbyville moraine. The uplands slope gradually into a moderately steep walled valley. The floodplain is broad and flat in some areas and nonexistent in others. Cover in the lake area is variable and difficult to evaluate. Three small lakes and possibly two residences would be inundated by this development. Two one-lane blacktop roads cross the site but one road could be raised and the other abandoned. The site appears to be feasible geologically. Logs of previous borings indicate that glacial till underlies this area to a depth as great as 200 feet. The abutments are composed of clayey silty glacial till overlain by loess on the higher gentler slopes. The same till material probably underlies the sandy silty alluvium at moderate depths and would be available in sufficient quantity for construction of an earth dam. This site should develop at a moderately high project cost.

Site 9. A second potential reservoir site exists on Finley Creek about 2 miles upstream from *site 8*. The valley in this area has gently sloping walls from the stream banks to the uplands with no abrupt changes in slope. Less than a third of the lake area is in timber, and most of the valley walls are in pasture or row crop development. A one-lane blacktop road near the dam could be abandoned. One residence would be inundated. Another township road 1 mile upstream could be raised and one small residence acquired. The proposed water surface elevation is an absolute maximum and may be lowered several feet to achieve the most desirable shoreline. An attractive feature of this site is the wide pool which would extend for 0.75 of a mile above the dam. No geologic problems were encountered by a surficial

examination. Previous borings indicate that the area is underlain by glacial till that would provide both an impermeable strong foundation and a source of borrow for the earth dam. In general this till is obscured by loess of undetermined but probably moderate thickness. This site should result in a moderately high project cost.

Site 10. A small reservoir could be developed on the headwaters of Mosquito Creek 2.5 miles northwest of Macon. Only a small portion of the watershed is in rolling uplands since most of the area consists of long slopes into the valley. Although the abutments are fairly steep, the valley walls have only moderately steep slopes with very little floodplain development. Most of the lake area is under cultivation or in pasture. Two township roads and possibly two farm residence units would be inundated. Access to the site is good since Illinois Eoute 48 is about 1.5 miles to the northwest. Logs of previous borings indicate that this area is underlain by at least 90 feet of silty sandy clayey glacial till. This material is generally obscured by vegetation, loessial deposits, or colluvium, but would provide an excellent foundation and borrow material. This site is considered geologically

feasible, subject to verification by an adequate program of test borings. This site should develop at a moderately high project cost.

Site 11. A small reservoir could be developed about 5 miles southeast of Macon on the upper reaches of Long Grove Creek, an intermittent stream draining a part of the front slope of the Shelbyville moraine. The uplands are very gently rolling with a relief of 10 to 20 feet. The valley is generally V-shaped and has moderately steep walls. Cover in the lake area consists of timber in the lowlands and pasture and row crops on the slopes. No roads nor residences would be involved. The only potential problem is a pipeline crossing about 0.5 mile above the site. A surficial examination indicates that geologic conditions are favorable at this site. Logs of previous borings show the thickness of glacial material, primarily till, to be approximately 150 feet. This till, although obscured by loessial deposits of 5 or more feet on the uplands, would probably form the foundation and supply the material for an earth dam. This site should result in a low project cost.

MARSHALL COUNTY

Marshall County upland soils were developed from material deposited during the glacial period. The bottomland soils were developed from sediments derived from glacial stream erosion. All of the county was covered by the Illinoian glacier, and sufficient time existed between glaciations that a distinct soil profile was developed by the Illinoian. Till deposited by the more recent Wisconsinan glacier covered the entire county. A second advance of the Wisconsinan moved in from the northeast and covered only the eastern portion of the county leaving a plastic yellowish gray till that thickens to the east and north. Loess deposits are at least 20 feet thick along the Illinois River bluffs and about 3 feet thick along the east and west county lines. The Illinois "Valley and its major tributaries consist of a very permeable material known as Sankoty sand to an elevation of about 520 feet mean sea level (msl). The topography west of the Illinois River is gently rolling and generally well drained. Only one important moraine extends north and south on the western border of the county. East of the river, the topography is nearly level except for the relief due to stream erosion.

The bedrock surface in Marshall County is of Pennsylvanian age. Exposures along valley walls are typical of this material showing layers of shale, limestone, coal, siltstone, and sandstone.

All streams south of Camp Grove empty into the

Spoon River, and the remaining streams empty into the Illinois River.

Potential reservoirs of moderate size are available throughout most of Marshall County. The results of nine feasibility studies follow.

Site 1. A potential reservoir exists on a tributary of Crow Creek. The dam site is located 4.5 miles west and 0.8 mile south of Henry. The reservoir area is primarily in pasture. There are no residences, obstructions, utilities, nor relocations. North-south township roads above and below the reservoir site have bridges out and could be abandoned. The stream bed and lower part of the floodplain consist of sand and silt with some glacial rock material of various size and limestone slabs, some of which are several feet in dimension. The upper few feet of the floodplain consist of alluvial silt overlying coarse material. The upper part of the valley walls consists of glacial till containing pockets, lenses, and possibly local areas of sand and gravel overlain by as much as 20 feet of loess. The lower part of the valley walls consists of sandstone, siltstone, shale, limestone, coal, and clay formations of Pennsylvanian age. The coal beds have been exploited by a number of horizontal shaft mines in recent years. These mines were frequently interconnected, creating possible avenues for leakage of water from the potential reservoir. Suitable material for the construc-

tion of an earth dam is available. Feasibility of this site is questionable and would require a complete program of test borings. This site should make a good small reservoir at a moderately low project cost.

Site 4. A dam site exists on Senachwine Creek 4 miles west and 0.5 mile north of Sparland. The reservoir area is almost entirely in pasture. One residence and access roads to one farm would be inundated. A two-lane gravel township road which crosses the upper third of the reservoir could be abandoned. The channel is 6 to 10 feet deep in a floodplain more than 200 feet wide. The stream bed consists of silt and sand. The floodplain consists of a sequence of 2 to 5 feet of alluvial silt at the top, 1 to 2 feet of clay and silt mixed with scattered gravel, and 3 feet of silt and sand. The valley walls have moderate to steep slopes and consist of tan till overlain by tan loess. Suitable material for the construction of an earth dam is available. The dam site is probably feasible. This site should result in a normal cost project.

Site 5. A potential reservoir site exists on Little Senachwine Creek. The dam site is located 6 miles west and 2 miles south of Sparland. The reservoir area is primarily in pasture. One residence with utilities exists in the reservoir area. A two-lane gravel township road crossing the middle of the area could be abandoned. Land acquisitions and relocations should not be extensive. Light mixed timber exists on the valley walls. The channel varies from 4 to 30 feet wide in a narrow floodplain. The stream bed consists of sand and silt containing limestone fragments and mixed glacial gravel. The floodplain consists of silt and sand over mixed rocks.

The valley walls have moderate to steep slopes and consist of glacial drift with coarse material overlain by as much as 20 feet of loess. Material suitable for the construction of an earth dam is available. The site is probably feasible, subject to verification by an adequate program of test borings. This site should result in a good, moderately low cost project.

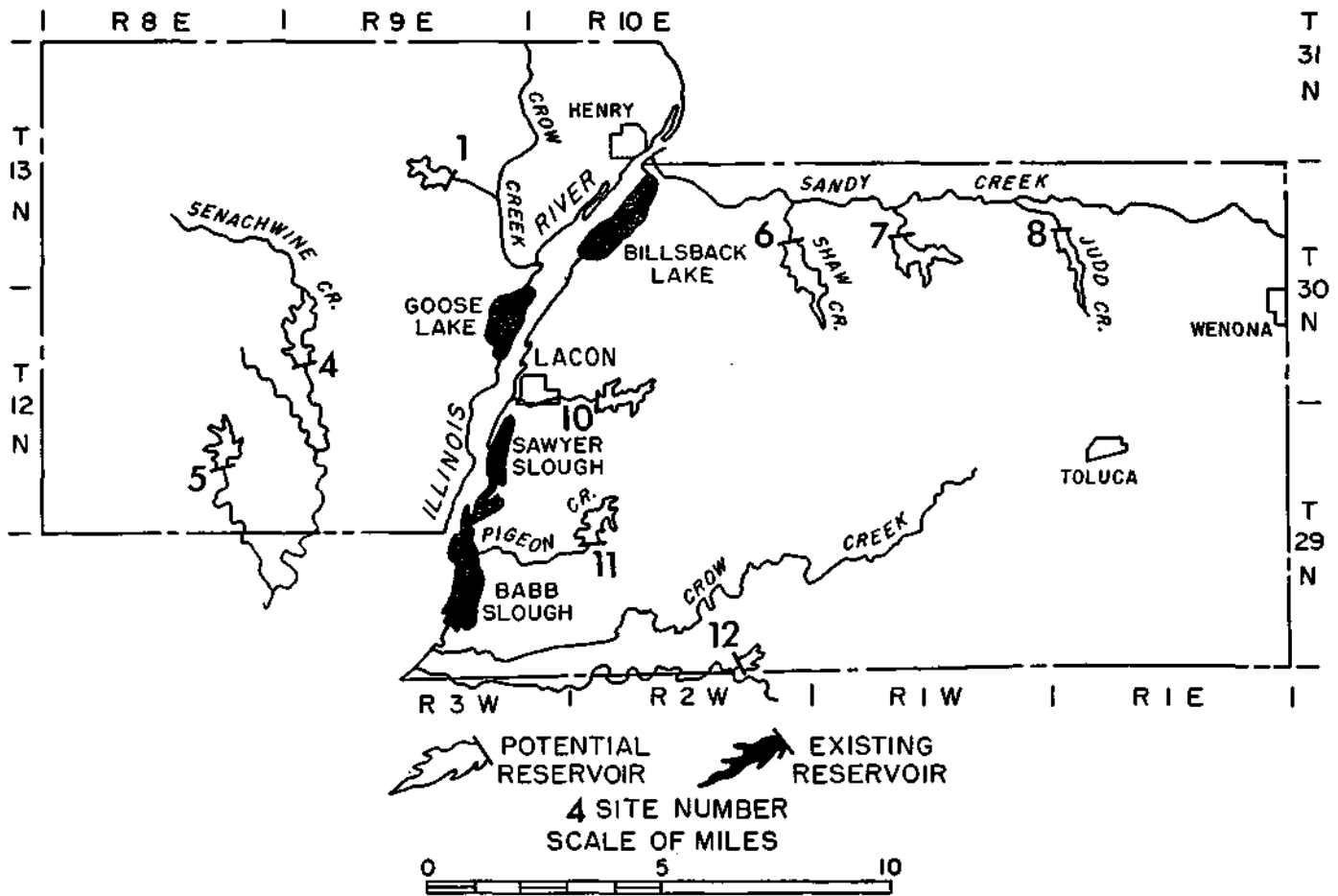
Site 6. A potential reservoir site exists on Shaw Creek 4 miles northwest of Varna. The reservoir area is underlain by the deep bedrock valley of the ancient Mississippi River. The valley is filled with sand and gravel, known as Sankoty sand, to an elevation of 520 feet. The overlying till is generally impervious, but intercalated lenses and layers of pervious materials do exist and may be continuous for considerable distances. It is conceivable that this site could be developed in spite of these conditions, but special construction techniques would have to be applied. No roads, residences, nor utilities would be involved. Good quality borrow is available on both valley walls near the dam site. Cover in the lake area is primarily pasture and some areas of timber. The valley walls and surrounding uplands are wooded. This site should result in a moderate cost project.

Site 7. A reservoir could be developed on a southern tributary of Sandy Creek, 2.5 miles north of Varna. The watershed includes a part of the outer Cropsey moraine and has gently rolling uplands and wide V-shaped, deeply entrenched valleys. Illinois Route 89 would have to be raised in one location, and a township road in two locations. Road improvements would be fairly expensive for a development of this size, but would be offset by

Potential Reservoirs in Marshall County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Crow Creek SE ¼ NE ¼ 22-13N-9E (Lacon Quad)	580	109	1,740	600	8.0	2.1	48	500	169	4	3.20	2.6	1.7	1.3	1.2	1.4	1.1	0.8	0.7
4	Senachwine Creek SW ¼ SE ¼ 7-12N-9E (Bradford Quad)	680	256	3,600	1,200	39.5	5.8	42	800	205	9	18.73	6.2	5.3	3.8	3.6	3.4	2.5	2.3	2.0
5	Little Senachwine Creek SW ¼ NE ¼ 26-12N-8E (Dunlap Quad)	700	235	3,700	1,200	4.6	0.7	47	350	103	3	2.18	2.1	2.0	1.7	1.6	1.9	1.3	1.0	0.9
6	Shaw Creek Cor. SE ¼ 12-30N-2W (Lacon Quad)	600	282	7,200	2,400	11.5	0.6	77	1,000	779	9	3.81	3.7	3.6	3.1	3.0	3.6	2.5	1.7	1.7
7	Trib. Sandy Creek N. line 16-30N-1W (Wenona Quad)	690	160	2,300	700	6.6	1.1	43	950	279	5	2.19	2.1	1.5	1.1	1.1	1.4	0.8	0.5	0.4
8	Judd Creek NE ¼ SW ¼ 7-30N-1E (Wenona Quad)	660	250	3,600	1,200	14.0	1.4	43	700	189	7	4.64	4.0	2.6	1.9	1.9	2.3	1.4	0.8	0.7
10	Trib. Illinois River W. line 32-30N-2W (Lacon Quad)	620	77	1,500	500	2.0	0.5	58	450	193	10	0.66	0.6	0.6	0.5	0.5	0.6	0.4	0.3	0.3
11	Pigeon Creek Cor. SE ¼ 18-29N-2W (Metamora Quad)	600	115	2,500	800	7.3	1.1	64	550	296	6	2.42	2.4	1.7	1.3	1.2	1.6	0.9	0.6	0.5
12	Trib. Snag Creek SE ¼ SW ¼ 35-29N-2W (Metamora Quad)	680	64	400	100	1.6	1.3	21	350	39	3	0.53	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1

MARSHALL COUNTY



other low costs. No residences nor utilities are involved. Cover in the reservoir area is brush and light timber. Logs of previous borings indicate that the Sankoty sand which underlies this area is overlain by about 120 feet of clay and till on the uplands, and by 60 to 80 feet of clay and till at the dam site. This cover should prevent any serious leakage into the deep sand deposits, but a program of test borings would be required to search for continuous lenses of porous media within the overlying till and clay. It would be necessary during construction to blanket any exposed sand and gravel deposits. Sufficient till for borrow should be available from either upstream abutment. This site is considered probably feasible geologically, pending verification by boring and materials testing.

Site 8. A long narrow reservoir could be developed on Judd Creek 3 miles southeast of Magnolia. The watershed consists of a moderately steep walled V-shaped valley entrenched into the loess-covered Cropsey moraine. The lake bed is basically pasture but has brush and timber on the creek banks and valley walls. A two-lane blacktop road crossing the upper reaches of the site would have to be raised. At least one residence is close

enough to the shoreline to warrant acquisition. The reservoir would be within 5 miles of Magnolia, Wenona, Toluca, and Varna indicating a possible joint water supply development. Logs of previous borings indicate that the bedrock surface occurs at an elevation of about 600 feet, or about 20 feet below the stream bed at the dam site. Bedrock is generally overlain by 60 to 80 feet of clay or clay till and 2 to 3 feet of loess on the uplands. Previous borings also indicate a 10-foot layer of sand in the nearby uplands. Since this could be a serious source of leakage, a careful search for such a formation is imperative. Sufficient material suitable for construction of an earth dam is readily available from either upstream abutment. Pending verification by an adequate program of boring and materials testing, the site is considered probably feasible geologically.

Site 10. A very small lake could be developed 2 miles east of Lacon and 0.5 mile south of Illinois Route 17. The stream is an intermittent tributary of the Illinois River and drains a part of the Illinois River bluff east of Lacon. The valley is V-shaped and has steep slopes that show exposures of brown till. Cover throughout the lake area consists of light hardwoods. No roads, resi-

Existing Reservoirs in Marshall County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Broadmoor Lake	6-13N-8E (Bradford Quad)	C&NW R.R.	1.79	1,150		18	19	184	60	1.93	Near Broadmoor; Ill. Div. of Fisheries
Billsbach Lake	4-5-7-8-30N-2W (Lacon Quad)						1,015				Ill. Div. of Fisheries
Wightmaa Lake	13-14-23-26-12N-9E (Lacon Quad)						595				Ill. Div. of Fisheries
Sawyer Slough	35-30N-3W, 2-3-10-11-29N-3W (Lacon Quad)						1,875				Ill. Div. of Fisheries
Babb Slough	10-11-15-22-27-29N-3W (Metamora Quad)										
Goose Lake	31-13N-10E, 1-12-12N-9E (Lacon Quad)						1,300				Ill. Div. of Fisheries
Whitney Lake	21-13N-10E (Lacon Quad)						20				
New Haven Lake	20-13N-10E (Lacon Quad)	Lena Neuhalfner					22				
Meridian Lake	29-13N-10E (Lacon Quad)	Duck Cb., Inc.					22				

dences, nor utilities would be involved in the development. Geology of this site is highly questionable because of the presence of the ancient Mississippi bedrock valley. A granular material known as Sankoty sand fills this valley to an elevation of about 520 feet. This deposit is overlain by glacial till and some intercalated lenses and layers of pervious material which, if continuous, could create serious leakage problems. This site is considered probably feasible geologically, pending an adequate program of testing and boring. Material for construction of an earth fill is available from either upstream abutment.

Site 11. A potential reservoir site exists on Pigeon Creek with the dam site located 6 miles northwest of Washburn. The Sankoty sand described under *site 10* is also present here; however, the overlying blanket of till at this site may not be adequate to prevent leakage. The possibility of continuous layers of porous materials in the overlying till layer is also a potential problem. If development of the site were attempted, any exposed sand or gravel layers would have to be blanketed with clay or clay till. This site is probably not feasible geologically, subject to verification by a complete program of borings and testing. No roads, residences, nor utilities would be involved in the development. Cover in the lake

area consists of mixed hardwoods except for small cleared areas on the narrow floodplain. The lake would be quite narrow but rather deep for its size. If geologic conditions can be overcome, this site should develop at a moderate project cost.

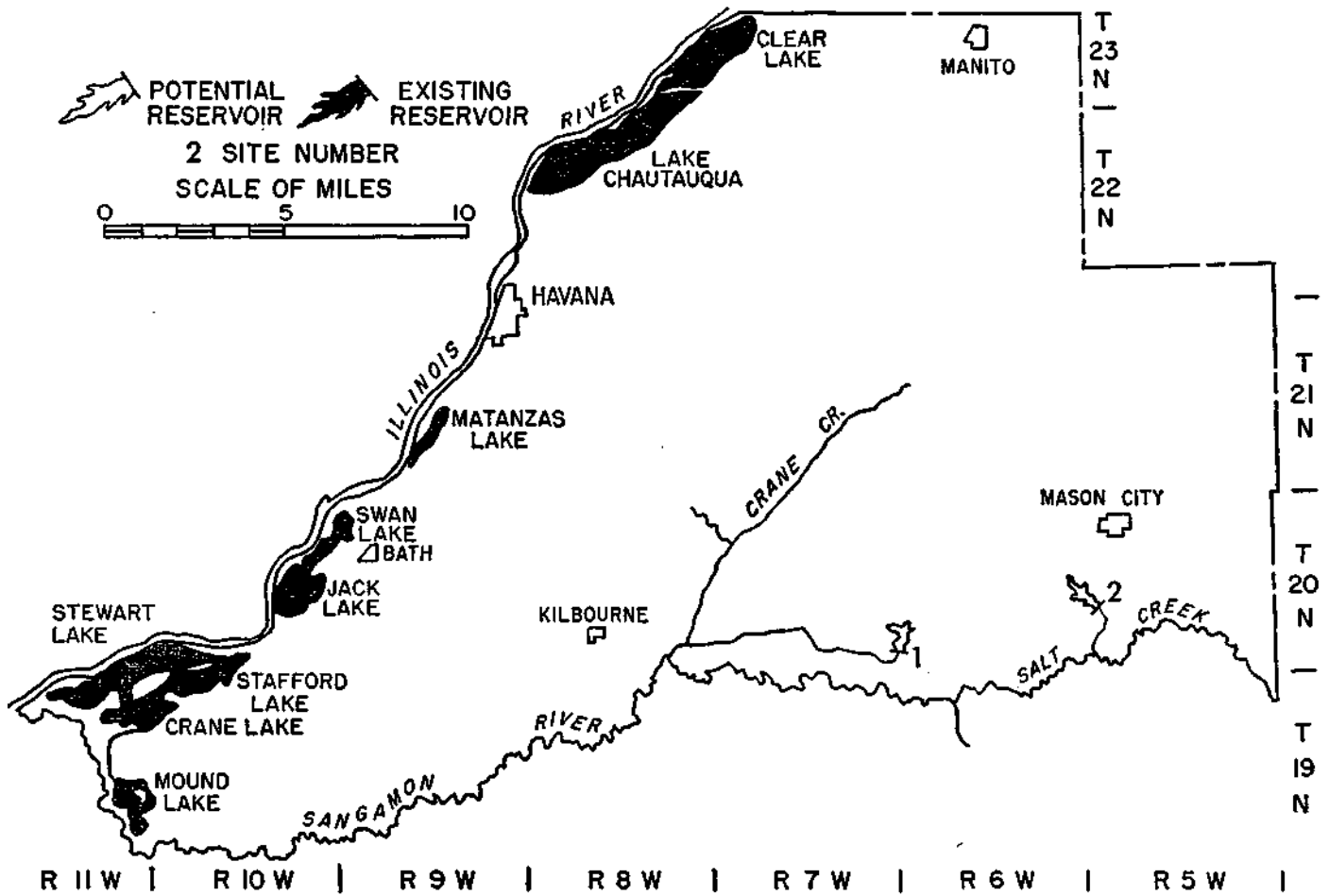
Site 12. A very small reservoir could be developed on an intermittent tributary of Snag Creek 0.5 mile northwest of Washburn. There are no roads, residences, nor other obstructions within the lake area. Surrounding township roads would provide good access to the site. The close proximity of the site to Washburn is an attractive feature and somewhat offsets the fact that the lake would be rather shallow. Cover in the lake bed consists of pasture and row crop development; brush is limited to the creek banks. A previous boring in this area indicates that 120 feet of drift, primarily till, overlies 220 feet of sand and gravel. The thickness of the drift layers seems to eliminate any serious threat of leakage through the underlying sand and gravel. Till seems to be readily available in the reservoir area. Shoreline shaping may be accomplished while obtaining fill for the earth dam. This site is considered probably feasible geologically, pending adequate borings and material testing.

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Potential Reservoirs in Mason County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Sangamon River NW ¼ NW ¼ 31-20N-6W (Petersburg Quad)	550	77	1,200	400	1.9	0.7	48	550	173	4	0.80	0.8	0.7	0.6	0.5	0.7	0.5	0.4	0.3
2	Trib. Salt Creek SW ¼ SE ¼ 19-20N-5W (Mason City Quad)	540	96	600	200	4.8	3.6	20	700	73	4	2.03	1.1	0.9	0.7	0.6	0.6	0.5	0.4	0.3

MASON COUNTY



The Illinoian glacier covered Mason County leveling the surface and depositing glacial drift. The Wisconsinan glacier did not reach Mason County, but the resulting floods from meltwaters deposited large quantities of sand and gravel. Wind later reworked the sand into extensive sand dunes and carried some of it eastward into the uplands. A 4-mile belt of sandy soil was formed extending in a northeast-southwest direction with the eastern edge passing through Mason City. The western third of the county is composed largely of sand and very sandy loam, and therefore is well drained. The interior of Mason County drains to the Illinois River through Quiver and Crane Creeks. These creeks are connected in the headwaters by a dredged ditch. About 200 miles of dredged ditches have been used to supplement the natural drainage in the central portion of the county. Salt Creek and the Sangamon River drain the southern portion of the county.

The bedrock surface is of Pennsylvanian age and consists of layers of shale, limestone, sandstone, and possibly coal seams.

The lack of relief in the county and the permeable soils combine to nearly preclude the future development of

reservoirs in Mason County. The results of studies on two very small sites follow.

Site 1. A possible reservoir site exists 1 mile east and 6 miles south of Easton on a tributary of the Sangamon draining the river bluffs. Logs of previous borings show that glacial drift, primarily till, is at least 200 feet deep in this area. The left abutment consists of 30 feet of cross-bedded, well-sorted sand, and coarse gravel capped by 6 feet of buff loess. The major geologic problem lies in the possibility of permeable Wisconsinan outwash deposits being present. If borings show that these deposits could not be cut off economically, the site would be classified not feasible. If these problems can be reconciled the reservoir would be a small but very low cost project. No roads nor residences would be involved. Cover consists of pasture with brush and light timber. The existence of small natural lakes to the east seems to be a favorable indication for the proposed site.

Site 2. A shallow reservoir could be developed on a tributary of Salt Creek 2 miles south of Mason City.

Existing Reservoirs in Mason County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Mud & Liverpool Lakes	19-20-29-30-23N-7W 24-25-35-36-23N-8W (Manito Quad)	Public					1,463.0	4,200	1,368.0		Ill. Div. of Fisheries
Clear Lake	3-4-22N-8W (Manito Quad)	Private					1,554.6	3,000	977.0		Ill. Div. of Fisheries
Lake Chautauqua	2-3-4-7-8-9-16-17-8-22N-8W 3-4-9-10-5N-5E (Manito and Havana Quads)	Federal Gov't			15	2	3,562.0	57,600	18,760.0		Includes Goose Lake; Ill. Div. of Fisheries
Matanzas Bay	22-27-21N-9W (Havana and Chandlerville Quads)	Club			10	8	360.9	4,800	1,564.0		Ill. Div. of Fisheries
Quiver Lake	17-18-19-22N-8W (Havana Quad)	Private					407.0	4,070	1,326.0		Ill. Div. of Fisheries
McHarry Pond	22-22N-8W (Manito Quad)		0.12	80	3	4	10.0	30	10.0		
Sangamon Lake	4-9-19N-11W (Beardstown Quad)	State of Ill.					110.1	550	180.0		Ill. Div. of Fisheries
Chain Lake	3-19N-11W (Beardstown Quad)	State of Ill.					408.3	1,600	521.0		Ill. Div. of Fisheries
Hickory Island Slough	33-34-20N-11W 4-19N-11W (Beardstown Quad)	Private					67.5	335	109.0		Ill. Div. of Fisheries
Pin Oak Lake	11-12-13-14-19N-11W (Beardstown Quad)	Private		1,280			19.3	120	39.0		Ill. Div. of Fisheries
Mound & Otter Lakes	23-24-25-19N-11W (Beardstown Quad)	Private		2,560			634.2	3,200	1,040.0		Ill. Div. of Fisheries
Wilcox Lake	29-19N-10W (Beardstown and Chandlerville Quads)	Club		1,920			56.7	280	91.0		Ill. Div. of Fisheries
Snicarte Slough	26-34-35-20N-10W 3-4-5-6-19N-10W (Chandlerville Quad)	Private					129.3	650	211.0		Ill. Div. of Fisheries
Crane Lake	11-12-19N-11W 5-6-19N-10W (Beardstown Quad)	Private					1,282.7	51	16.7		Ill. Div. of Fisheries
Slim Lake	33-20N-10W (Chandlerville Quad)	Private					88.9	320	104.0		Ill. Div. of Fisheries
Patterson Bay	26-35-20N-10W (Chandlerville Quad)	Private					62.2	250	81.0		Ill. Div. of Fisheries
Stewart Lake	35-36-20N-11W 31-32-20N-10W (Beardstown Quad)						1,075.0	5,375	1,751.0		Ill. Water Survey Bull. 31
Powell Bay	34-20N-10W (Chandlerville Quad)	Private					30.5	125	41.0		Near Snicarte
Mathews Bay	3-20N-10W (Chandlerville Quad)	Private		1,280			41.4	166	54.0		Ill. Div. of Fisheries
Camp Lake	3-4-20N-10W (Chandlerville Quad)	Private					18.2	85	28.0		Ill. Div. of Fisheries
Johnson Slough	26-27-19N-10W (Chandlerville Quad)	Private		1,920			16.4	80	26.0		Ill. Div. of Fisheries
Picket Lake	28-19N-10W (Chandlerville Quad)	Private		640			12.0	52	17.0		Ill. Div. of Fisheries
Spring Lake	27-19N-10W (Chandlerville Quad)	Private		4,480			44.0	164	53.0		Ill. Div. of Fisheries
Ben's Lake	20-19N-9W (Chandlerville Quad)	Private		9,600			11.4	48	16.0		Ill. Div. of Fisheries
Fish Lake	10-11-14-15-19N-9W (Chandlerville Quad)	Private		7,680			16.5	82	27.0		Ill. Div. of Fisheries
Moscow Lake	18-19-20N-9W (Chandlerville Quad)	Private					257.5	1,285	419.0		Ill. Div. of Fisheries
Wolf Lake	19-30-19N-9W (Chandlerville Quad)	Private		12,160			27.1	108	35.0		Ill. Div. of Fisheries
Finch Lake	28-19N-10W (Chandlerville Quad)	Private		640			40.0	125	41.0		Ill. Div. of Fisheries
Bowles Lake	7-19N-8W (Chandlerville Quad)	Private		640			5.3	15	4.9		Ill. Div. of Fisheries
Angelo Lake	7-19N-8W (Chandlerville Quad)	Private		1,920			10.3	35	11.0		Ill. Div. of Fisheries
Pratt Lake	4-19N-8W (Chandlerville Quad)	Private		640			14.3	28	9.1		Ill. Div. of Fisheries
	28-19N-9W (Chandlerville Quad)	Private		1,280			35.7				Ill. Div. of Fisheries
	30-19N-9W (Chandlerville Quad)	Private		1,280			14.5				Ill. Div. of Fisheries
Barkhausen Lake	23-24-25-19N-11W (Chandlerville Quad)	Public		2,560			10.9	50	16.3		Ill. Div. of Fisheries
Lynch Lake	7-20N-9W (Chandlerville Quad)	Private					29.9	125	40.7		Ill. Div. of Fisheries
Bath Lake	5-8-20N-9W (Chandlerville Quad)	Private		2,560			138.4	410	133.0		Ill. Div. of Fisheries

Existing Reservoirs in Mason County (Concluded)

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage Capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Bell Lake	1-12-20N-10W (Chandlerville Quad)	Private					43.4	130	42.0		Ill. Div. of Fisheries
Grass Lake	6-7-20N-9W (Chandlerville Quad)	Private					462.9	650	211.0		Ill. Div. of Fisheries
Swan Lake	12-13-14-20N-10W (Chandlerville Quad)	Private					283.9	852	277.0		Ill. Div. of Fisheries
Jack Lake	13-23-24-20N-10W (Chandlerville Quad)	Private					914.9	2,287	745.0		Ill. Div. of Fisheries
Curtis Lake	26-20N-10W (Chandlerville Quad)	Private					17.6	52	17.0		Ill. Div. of Fisheries
Smith Lake	31-20N-6W (Petersburg Quad)	Private	0.11	70			17.5	85	28.0		Ill. Div. of Fisheries
Norton Lake	23-21N-5W (Delavan Quad)	Private					15.9				Ill. Div. of Fisheries
Bath Shute	5-8-20N-9W 18-24-20N-10W (Chandlerville Quad)	Public					215.5	1,290	420.0		Ill. Div. of Fisheries
Dierker Lake	33-21N-9W (Havana Quad)	Club					12.0	42	14.0		Ill. Div. of Fisheries
Ellsbury Lake	25-21N-6W (Mason City Quad)						5.0	25	8.1		Topographic Map
John Btoh Lake	30-21N-5W (Mason City Quad)		0.16	105			5.0	15	4.9		Topographic Map
Reavis Lake	35-20N-7W (Petersburg Quad)						5.0	15	4.9		Topographic Map
Perry Slough	32-33-20N-7W (Petersburg Quad)						5.0	15	4.9		Topographic Map
Lange Pond	14-21N-9W (Havana Quad)						35.0	160	52.0		Topographic Map
Lily Lake	17-20-19N-9W (Chandlerville Quad)						10.0				Ill. Water Survey Bull. 31
Prairie Lake	20-19N-9W (Chandlerville Quad)						5.0				Ill. Water Survey Bull. 31
Silver Moon Lake	25-19N-10W (Chandlerville Quad)						10.0	40	13.0		Ill. Water Survey Bull. 31
Little Picket Lake	28-19N-10W (Chandlerville Quad)						5.0	15	4.9		Ill. Water Survey Bull. 31
Back Lake	28-19N-10W (Chandlerville Quad)						5.0	15	4.9		Ill. Water Survey Bull. 31
Cow Lake	28-19N-10W (Chandlerville Quad)						45.0	90	2.9		Ill. Water Survey Bull. 31
Calomel Lake	28-19N-10W (Chandlerville Quad)						15.0	30	9.8		Ill. Water Survey Bull. 31
Stafford Lake	32-33-20N-10W (Chandlerville Quad)						435.0	1,305	42.5		Ill. Water Survey Bull. 31

Some shaping in the upper reaches may be justified since this would be a low cost development in an area with a shortage of reservoir sites. No roads nor residences would be involved, although existing roads closely surround the site. The reservoir area is free from timber and under cultivation. Logs of previous borings and a preliminary examination indicate that no serious geologic problems should be encountered. If, however,

meable materials which are known to underlie clay are exposed, they would have to be blanketed. Loess is the only material exposed in the valley. Determination of feasibility of the site would have to be reserved until subsurface investigations could be undertaken. It is possible that the clayey loess would be suitable for fill, but the best source of borrow would have to be determined by borings and testing.

MCDONOUGH COUNTY

McDonough County was covered by three glaciers and affected by a fourth during the glacial period. Practically all of McDonough County is covered with glacial drift or boulder clay to a depth varying from 10 to 140 feet and averaging 50 to 60 feet. Till, an unsorted mixture of particles from clay through boulder size, is the most common form of drift. Ice sheets which did not reach McDonough County caused immense quantities of water-borne sediments to be deposited on the floodplains of streams. Such sediments were later picked up by wind and deposited in the uplands, burying the drift material to a depth of 5 to 20 feet. This wind-blown material is commonly known as loess. Surface erosion has removed some of the loess exposing the underlying drift material.

McDonough County lies wholly in the Illinois River Basin. At least 90 percent of the county drains south-westward through the East Fork La Moine River while the other 10 percent is drained eastward by tributaries of the Spoon River. The larger streams have cut valleys from 50 to 200 feet below the uplands with resulting small tributary erosion. The uplands adjacent to the larger streams have been cut into hills and valleys unsuitable for clean tilled agriculture.

The bedrock surface is of Pennsylvanian age and consists primarily of shale and limestone layers underlain by coal seams and sandstone. Bedrock exposures are common in the deeper valleys of the county.

Several potential reservoir sites exist in McDonough County. The results of feasibility studies on seven sites follow.

Site 1. A potential reservoir site exists on the East Fork La Moine River 4.25 miles west and 3.75 miles north of Bushnell. The uplands are in clean tilled crops.

The reservoir area is in pasture. The valley walls are covered with light woods. Two north-south township roads, one a two-lane gravel road and the other a one-lane dirt road, cross the reservoir area. The dirt road could be abandoned, and the gravel road could be raised. The stream bed is shallow and sandy. No bedrock is exposed. The valley walls have gentle slopes and together with the uplands consist of reddish till containing small scattered gravel deposits. There is sufficient suitable material for the construction of an earth dam. This site is considered probably feasible and should result in a low cost project.

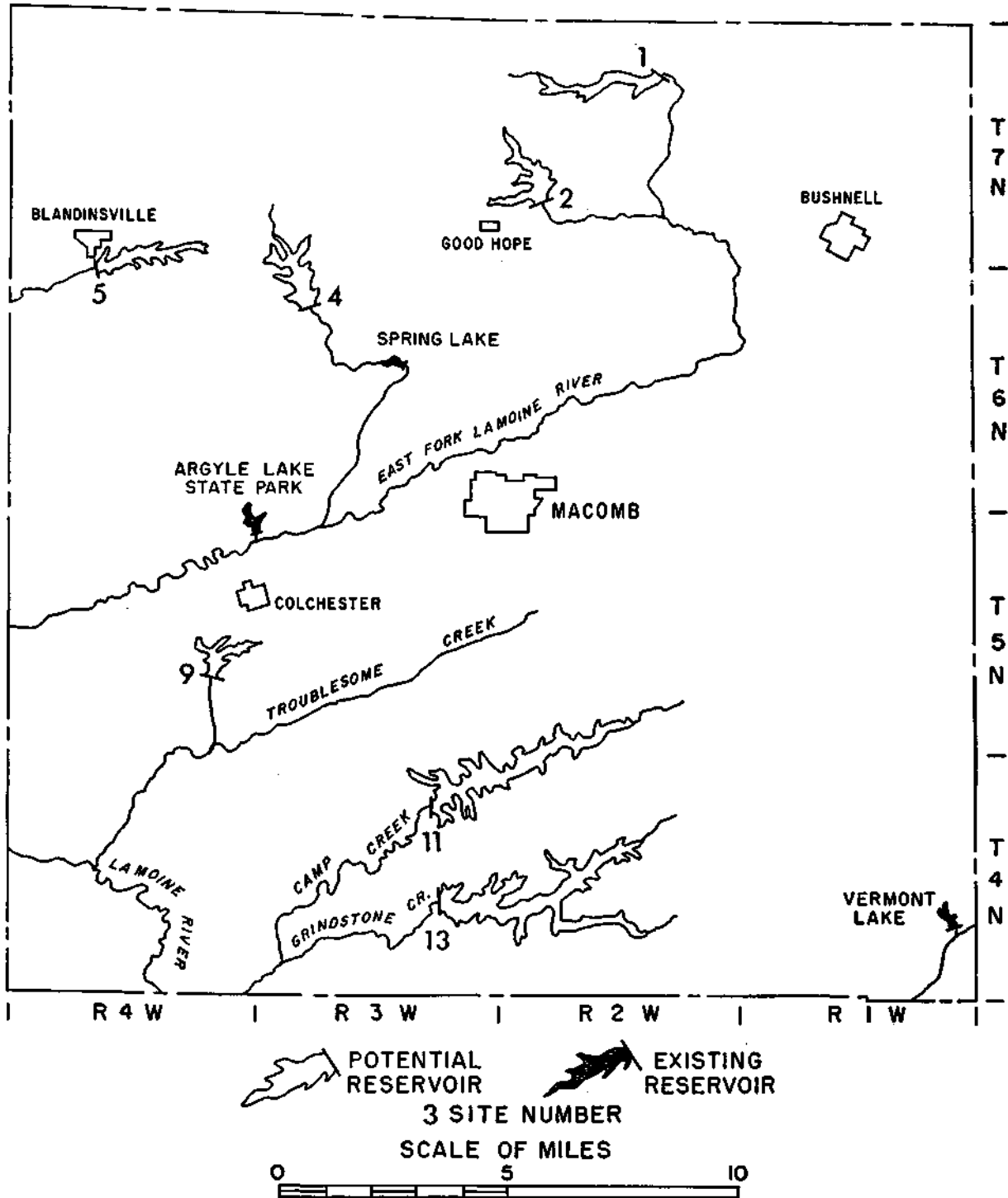
Site 2. A potential reservoir site exists on Short Fork, a tributary of East Fork La Moine River. The dam site is located 1.25 miles east and 0.75 mile north of Good Hope. Approximately 40 percent of the reservoir area is under cultivation. No residences nor relocations would be required except raising a north-south two-lane concrete road north of Good Hope. One north-south and an east-west one-lane dirt roads are currently being abandoned. The channel is about 10 feet wide in an alluvial plain about 200 feet wide. The floodplain is composed of silt containing some pebbles. No bedrock is exposed. Both valley walls have gentle slopes and consist of reddish till containing some rounded pebbles. The upland appears to consist of gray clay loessial silt. Material suitable for the construction of an earth dam is available. A cemetery 0.5 mile north of Good Hope would limit the elevation of this structure. The dam site is probably feasible and should result in a good small low cost project.

Site 4. A reservoir could be created on Spring Creek by constructing a dam 5 miles east and 1.5 miles south

Potential Reservoirs in McDonough County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	E. Fk. La Moine River SW ¼ NW ¼ 11-7N-2W (Good Hope Quad)	700	336	4,368	1,400	15.2	1.4	39	700	170	12	5.38	4.9	3.8	2.8	2.7	3.4	2.4	1.5	1.5
2	Short Fork SW ¼ NW ¼ 29-7N-2W (Good Hope Quad)	700	284	3,040	1,000	6.5	0.8	32	800	145	13	2.30	2.2	2.0	1.6	1.5	1.8	1.2	0.8	0.8
4	Spring Creek SW ¼ SW ¼ 5-6N-3W (La Harpe Quad)	730	218	4,505	1,500	4.2	0.4	62	1,000	456	10	1.49	1.2	1.2	1.2	1.2	1.3	1.3	1.1	1.0
5	Baptist Creek SW ¼ NW ¼ 4-6N-4W (La Harpe Quad)	700	202	2,613	900	8.1	1.2	39	700	165	10	2.87	2.8	2.2	1.6	1.5	2.0	1.3	0.8	0.8
9	Trib. Troublesome Creek NW ¼ NE ¼ 26-5N-4W (Colchester Quad)	640	102	1,870	600	2.5	0.5	55	500	187	4	0.89	0.8	0.8	0.8	0.7	0.8	0.7	0.5	0.4
11	Camp Creek SE ¼ NW ¼ 11-4N-3W (Macomb Quad)	600	1,260	15,540	5,100	50.6	1.3	37	850	203	33	17.9	16.7	12.7	9.6	9.3	11.4	7.9	5.2	5.2
13	Grindstone Creek SE ¼ SE ¼ 23-4N-3W (Macomb Quad)	600	1,170	21,060	6,900	41.1	0.8	54	1,000	390	31	14.56	14.1	13.4	11.3	10.4	12.1	8.9	6.2	6.2

MC DONOUGH COUNTY



of Blandinsville. The watershed upland is almost entirely in clean tilled crops. The reservoir area is covered with light woods and is used for pasture. No residences would be involved in the development. Illinois Route 9, a two-lane concrete highway east from Blandinsville, would determine the level to which the reservoir could be built. The reservoir area is paralleled by two two-lane gravel highways. The channel is 4 feet wide and about

6 feet deep in a narrow alluvial plain consisting mostly of silt with some gravel and stone chips. The stream bed is floored with sand. No bedrock is exposed. The valley walls consist of glacial till with some gravel and stone chips mostly of white chert. The uplands consist of silty clay. Material suitable for a dam is available. The site is probably feasible and should result in a good low cost project.

Site 5. A potential reservoir site exists on Baptist Creek, a tributary of La Harpe Creek, 0.75 mile south of Blandinsville. The reservoir area is predominantly pasture, and light timber covers the valley walls. Only one frame residence in poor condition is located within the reservoir area. An east-west two-lane gravel road crossing the reservoir area could be abandoned except for the western end which would have to be raised to serve two residences. An electric power high line crosses the reservoir area, but would not have to be relocated. Land acquisitions, relocations, and construction costs should be moderately low. The stream bed is about 8 feet wide and 8 feet deep in an alluvial plain about 200 feet wide. The floodplain is composed of sand and silt containing some glacial debris. No bedrock is exposed. The valley walls have gentle slopes and consist of tan till containing white chert chips. The uplands consist of tan loessial silt in which pebbles are widely scattered. Material suitable for the construction of an earth dam is available. This site is probably feasible, and should develop at a low project cost.

Site 9. A small tributary of Troublesome Creek has a potential reservoir site 1 mile west and 1.75 miles south of Colchester. The reservoir area is used for pasture, and is covered with brush and scattered timber. It contains a clay pit which was abandoned 25 years ago. The reservoir area is surrounded on three sides by a two-lane gravel highway. The stream bed is cut into sandstone, siltstone, shale, and clay of Pennsylvanian age. The channel is 30 feet wide and 6 feet deep in a floodplain about 150 feet wide. The channel sediments consist of sand and silt in which rock fragments up to boulder size are abundant. The alluvial plain consists of 3 to 4 feet of layered silt overlying an increasing amount of coarse rock rubble to bedrock. The lower 25 to 30 feet of the east valley wall is a vertical cliff of bedrock. Elsewhere, the valley walls have abrupt slopes and consist of reddish till. Upland material is tan loess, tan till, and reddish till. Material suitable for the construction of an earth

dam is available. This site is possibly feasible, and should result in a good small reservoir at a low project cost.

Site 11. A potential reservoir site exists on Camp Creek, a tributary of the La Moine Eiver. The dam site is located 5.5 miles west and 1.5 miles north of Industry. No residences would be involved in the development. The reservoir area is half under cultivation and half in pasture. The valley walls are covered with brush and light timber. U.S. Eoute 67 and one two-lane blacktop road would have to be raised. There are numerous north-south township roads that could be abandoned. The reservoir area is surrounded by good highways and would be readily accessible. A cemetery located on the section line between sections 5 and 32, T5N, R2W, would have to be examined for low lying lots. The stream bed is filled with sand and silt. The wide alluvial plain consists of well stratified alluvial silt. The valley slopes and uplands consist of tan silt with little clay. Although bedrock is not exposed, Francis Creek shale, primarily sand of Pennsylvanian age, is believed to underlie most of the dam site area. Material suitable for the construction of an earth dam is available. This site is probably feasible but would result in a high cost project.

Site 13. A potential reservoir site exists on Grindstone Creek, a tributary of Camp Creek. The dam site is located 5 miles west and 1 mile south of Industry. There are three frame farm residences located in the reservoir area. About one-third of the bottomland is clean tilled and the remainder is used for pasture. The steeper valley walls are in brush and light timber with the more gentle slopes in pasture. One major two-lane blacktop north-south highway crosses the center of the reservoir and would have to be relocated or raised. Three other north-south township roads could be abandoned, and two east-west township roads could be raised. U. S. Route 67 crosses the headwaters but does not appear to be a problem. The stream bed consists of irregularly bedded sand-

Existing Reservoirs in McDonough County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Spring Lake	15-16-6N-3W (Good Hope Quad)	Macomb	2.02	1,293		11	42.9	242.2	78.9	2.25	1962 sed. survey
CB&Q Res.	8-6N-1W (Good Hope Quad)	CB&Q R.R.	1.5	9,600			11.4				Ill. Div. of Fisheries
Argyle Lake	31-6N-3W, 36-6N-4W, 6-5N-3W, 1-5N-4W (Colchester Quad)	State of Ill.					117.0				Ill. Div. of Fisheries
Vermont New Lake	24-25-4N-1W (Vermont Quad)	Vermont	2.4	1,550			37.3				Ill. Div. of Fisheries
Frank Horn Lake	16-5N-2W (Macomb Quad)	Frank Horn	0.4	228			8.4				Ill. Div. of Fisheries
Williams Lake	8-4N-4W (Colchester Quad)	J. Gumbart					15.0				Pumped storage; Ill. Div. of Fisheries
Blandinsville Lake	32-7N-4W (LaHarpe Quad)	Blandinsville					8.0				Ill. Div. of Fisheries

stone and shale of Pennsylvanian age covered with glacial rock material up to 3 feet in diameter. The narrow alluvial plain adjoins relatively steep wooded slopes and is composed of till and much gravel near the uplands. The uplands are developed on tan loessial silt. Material

suitable for the construction of an earth dam is available. The dam site is possibly feasible and should make a good development although complications of land acquisitions, relocations, and utilities would make this a high cost project.

MC LEAN COUNTY

The glacial drift which covers McLean County is underlain by bedrock of Pennsylvanian age that consists of shale underlain by layers of limestone, sandstone, and possibly coal. The major features of the hidden bedrock surface are the Mahomet bedrock valley in the extreme southwest corner and the Danvers bedrock valley in the northwestern portion of the county.

Drift deposited by the Kansan, Illinoian, and Wisconsinan glaciers averages 200 feet in thickness. The Wisconsinan left such surface features as the Bloomington moraine in the western portion of the county, the Cropsey moraine in the northeastern portion, and the Champaign moraine in the southeastern corner. The Shelbyville moraine near the southwest corner of the county marks the farthest advance of the Wisconsinan ice sheet. After recession of the glaciers, the county was covered with from 2 to 7 feet of fine wind-blown material known as loess. For the most part, the present soils were derived from this material.

Drainage in the northern half of the county is generally west through the Mackinaw River. The southern half of the county drains south to the Sangamon River.

In much of the county the streams are too shallow for good reservoir development. The results of eight feasibility studies follow.

Site 1. Three potential reservoir sites exist on Sixmile Creek, a tributary to the Mackinaw River, that drains the backslope of the Normal moraine. The upper dam site has some silts and gravels locally in the right abutment that extend up the right side of the reservoir. For this reason, the site is considered probably not feasible, subject to verification by an adequate program of test borings and materials testing. Most of the reservoir area is a broad flat plain consisting of alluvial sands and silts that are intensely cultivated. The valley walls are covered with brush and woods. Two east-west two-lane blacktop roads could be abandoned. Two vacant farm residences and outbuildings would be inundated and another would require an access road. This site is the least desirable of the three potential sites on Sixmile Creek.

Site 2. The second potential dam site on Sixmile Creek is located in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T25N, R2E, approximately 0.75 mile downstream from *site 1*. The stream bed is entrenched 6 to 8 feet in a narrow floodplain composed of silty alluvium, and is under cultivation. A two-lane gravel road would have to be raised in an area between dam *sites 1* and 2. Logs of previous borings indicate that bedrock is covered by a thick layer of clay till, sand, and gravel. The valley walls are brown clay till and should be suitable borrow material for an earth embankment. This site is considered feasible, subject to verification by an adequate program of test borings and materials testing.

Site 3. The third potential dam site is located on Sixmile Creek about 1 mile upstream from the confluence of Sixmile Creek and the Mackinaw River. This is believed to be the best of the three potential sites on Sixmile Creek. The surficial soils have been developed in loess deposits which blanket the gently rolling topography. Logs of previous borings indicate that bedrock is covered by a thick layer of clay till, sand, and gravel. Geologic conditions at the dam site and in the reservoir area are considered probably feasible. The reservoir area has steep valley walls covered with a brown clay till and a broad flat bottom covered with sands and silts. The stream bed is entrenched 8 to 10 feet in the alluvium. The sequence and character of the deposits in the abutments and beneath the valley floor should be determined to locate any permeable horizons subject to leakage. One east-west and one north-south two-lane blacktop roads would have to be relocated along the northeast shoreline. This site should produce a good reservoir at a normal project cost.

Site 5. A potential dam site exists on the West Fork, an upper tributary of North Fork Salt Creek which drains part of the LeRoy moraine. The topography is characterized by gently rolling hills. The reservoir area is cleared and nearly all in pasture. The watershed is nearly all clean tilled and has gentle slopes. One county

road could be abandoned and two others raised in three locations. Logs of previous borings indicate that the bedrock is covered by a thick mantle of glacial deposits consisting of clayey tills separated by soil zones. The abutments range in height from 20 to 30 feet and consist of yellowish brown clayey till. The stream is entrenched about 4 feet in very silty dark gray alluvium on a floodplain that is about 300 feet wide. Yellowish brown clayey till forms the sides of the reservoir and can provide an adequate quantity of material suitable for the construction of an earth dam. The site is considered geologically feasible, subject to verification by testing. This site would make a fair shallow reservoir at a normal project cost.

Site 6. A small tributary of Kickapoo Creek, draining an area of gently rolling morainal topography, has a potential dam site 1 mile east of Heyworth. The watershed is about 3 miles by 1 mile in size and is under cultivation in pasture. The reservoir area is partially covered with timber. A two-lane blacktop road crossing the upper third of the reservoir area could be raised or abandoned. Logs of previous borings indicate a thick mantle of glacial material consisting of clayey tills separated by soil zones. The moderately sloping abutments are composed of light brown clayey till. The stream is entrenched about 4 feet in silty alluvium, and the bed appears to be sandy. The till appears to be persistent, but gravel beds are known to occur locally along Kickapoo Creek. The clayey tills could provide an adequate and suitable borrow material for an earth embankment. The site is considered physically feasible, subject to veri-

fication by testing. This appears to be a good reservoir site and should develop at a normal project cost.

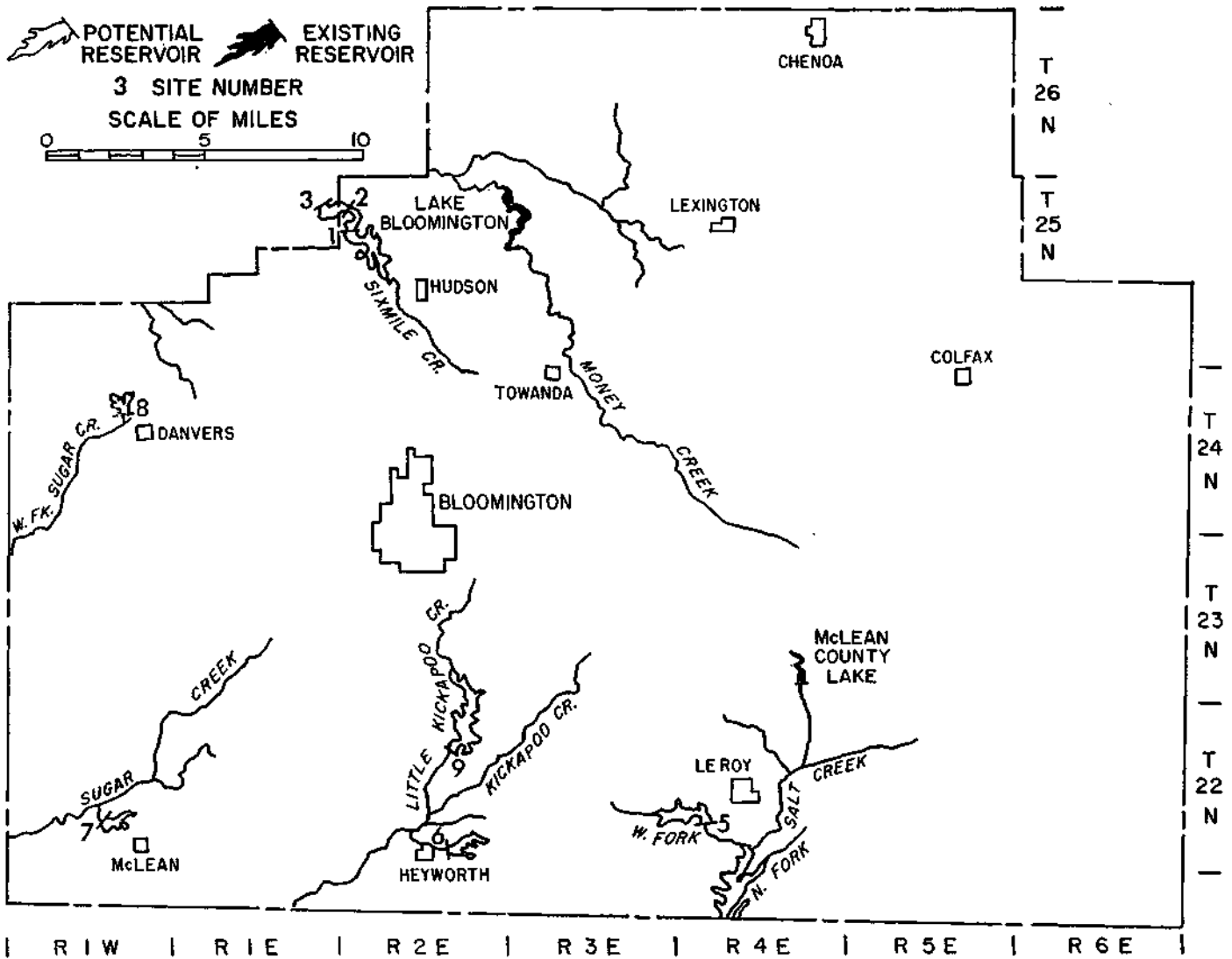
Site 7. A small short tributary of Sugar Creek draining the backslope of the LeRoy end moraine has a potential dam site located 1 mile north and 1 mile west of the village of McLean. The topography is characterized by gently rolling hills. The valley sides slope gently to the uplands, and the stream flows in a 3-foot notch. An extensive tile system drains the left side of the reservoir. The entire reservoir area is in clean pasture. One town road would have to be raised. Logs of previous borings indicate that the bedrock is covered by a thick mantle of glacial material such as clayey tills, separated by soil zones. Clayey tills are probably available in sufficient quantity and of the right quality to produce a satisfactory embankment. The site is considered geologically feasible. The reservoir water would flood the existing tile drainage system. This site should result in a shallow reservoir developed at a moderately high project cost.

Site 8. A small reservoir could be developed on a tributary of West Fork Sugar Creek about 1 mile northwest of Danvers. The entire watershed slopes gradually into the valley bottom which shows no floodplain development. Although the site would be rather shallow, a more detailed survey would be required to determine the actual extent of shallow water and the optimum water surface elevation. The reservoir area is under clean tilled cultivation. No roads nor residences would be involved. Geologic conditions appear to be good since a thick layer of glacial till is known to underlie this area.

Potential Reservoirs in McLean County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Sixmile Creek SE ¼ SW ¼ 7-25N-2E (Danvers Quad)	730	660	7,700	2,500	39.0	2.3	35	800	172	11	15.60	9.4	6.3	4.5	4.0	4.6	3.4	2.2	1.7
2	Sixmile Creek NW ¼ NW ¼ 7-25N-2E (Danvers Quad)	730	950	15,800	5,100	40.5	1.2	50	1,150	436	15	16.20	15.8	10.5	8.3	7.9	8.9	6.0	4.0	3.5
3	Sixmile Creek SE ¼ SW ¼ 1-25N-1E (Danvers Quad)	730	1,270	27,500	9,000	41.5	0.7	65	1,300	670	19	16.60	15.3	15.3	12.2	11.8	15.0	9.2	6.5	6.3
5	West Fork NE ¼ SE ¼ 30-22N-4E (Le Roy Quad)	760	250	1,910	600	15.7	4.2	23	900	110	5	7.09	3.2	2.7	1.9	1.8	1.6	1.3	1.2	1.0
6	Trib. Kickapoo Creek SE ¼ SE ¼ 34-22N-2E (Le Roy Quad)	770	185	2,150	700	3.0	0.5	35	850	178	4	1.05	0.8	0.8	0.8	0.8	0.9	0.8	0.6	0.4
7	Trib. Sugar Creek SW ¼ SE ¼ 27-22N-1W (McLean Quad)	660	80	670	200	1.7	1.1	25	700	93	2	0.66	0.6	0.5	0.4	0.3	0.4	0.3	0.2	0.1
8	Trib. W. Fk. Sugar Creek SW ¼ NW ¼ 14-24N-1W (Danvers Quad)	790	145	1,200	400	1.0	0.4	25	1,000	131	2	0.40	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2
9	Little Kickapoo Creek E ¼ NE ¼ 15-22N-2E (Le Roy Quad)	750	550	5,860	1,500	25.0	2.1	32	850	162	8	8.71	6.1	5.0	3.6	3.5	3.3	2.6	2.0	1.8

MC LEAN COUNTY



The till is obscured throughout the area by a mantle of loess but should be available as borrow and foundation for an earth dam. This site should produce a good small reservoir at a low project cost.

Site 9. A potential reservoir exists on Little Kickapoo Creek with the dam some 3.5 miles north of Heyworth. The watershed has two distinct upland surfaces: the portion on top of the Bloomington moraine that forms the upper half of the drainage, and the lower half of the area which is separated by a steep 100-foot slope. The valley walls slope gently to the uplands, and there is little or no floodplain development. Except for pasture

with scattered timber near the dam site, the entire reservoir area is under cultivation. The site is 1.5 miles from U. S. Route 51. A one-lane blacktop north-south road could be raised in two places and an east-west road abandoned. Two farm residences with outbuildings would be inundated. Geologic conditions appear to be favorable at this location, but a complete program of boring would be required to search for permeable outwash deposits that would be expected on the front face of a moraine. Yellowish brown glacial till was discovered in erosional areas and would be expected to form the abutments and underlie the entire lake. Till should be available in sufficient quantity for construction of an earth fill. This site should result in an average project cost.

Existing Reservoirs in McLean County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Bloomington	1-11-12-13-25N-2E 6-7-18-25N-3E (Normal Quad)	Bloomington	61.0	39,040		35	570.0	5,863	1,910.2	1.80	1956 sed. survey
	7-23N-2E (McLean Quad)	Rowe Const. Co.									Gravel pit
Miller Park Lake	8-23N-2E (McLean Quad)	Bloomington				15	12.0				
	8-23N-5E (McLean Quad)										
	7-23N-2E (McLean Quad)	Dr. Nord & McGrath					33.0				Gravel pit
McLean County Cons. Lake	6-23N-2E (McLean Quad)	Rudolph Albright					12.5				Gravel pit
	26-27-34-35-23N-4E (Arrowmich Quad)	State of Ill.	4.42	2,830		21	135.0	1,220	397.5	5.17	
	34-23N-3E (LeRoy Quad)	Dr. Fred Brian	0.19	120	26	22	8.3	100	32.6	9.86	Pond
	17-25N-5E (Colfax Quad)	Hartzell Henline					7.0				Gravel pit
	3-26N-5E (Colfax Quad)	C. E. Stephens					5.0				Borrow pit
	11-25N-3E (Normal Quad)	Delmar Rowe					31.0				Gravel pit
	31-26N-2E (Danvers Quad)	Jacob Hoobler					5.0				Gravel pit & pond
	5-25N-2E (Danvers Quad)	Lloyd Benedict	1.87	1,200			8.0				Pond
	32-22N-2E (McLean Quad)	E. Hutchinson					9.0				Gravel pit
	28-23N-3E (LeRoy Quad)	John Howes					6.0				Gravel pit
	16-23N-2E (LeRoy Quad)	St. Farm Ins.					5.0				Pond
	15-23N-2E (LeRoy Quad)	Bloomington Spts. Co.					6.0				Pond
	10-23N-2E (LeRoy Quad)	Lake Side C. Co.					5.3				Pond
	10-23N-2E (LeRoy Quad)						6.0				Pond
	19-23N-1E (McLean Quad)	John Burkhart					6.0				Gravel pit
22-23N-1W (McLean Quad)	Fred Schultz					10.0				Gravel pit	
6-21N-2E (McLean Quad)	Jack Sellards					5.0				Gravel pit	
5-25N-4E (Normal Quad)	Dorothy Williams					5.2				Borrow pit	
Jones Lake	7-25N-2E (Danvers Quad)	Ardith Jones					5.0				
	32-24N-2E (McLean Quad)	Rowe Const. Co.					6.3				Gravel pit
	32-24N-2E (McLean Quad)	Rowe Const. Co.					15.0				Gravel pit
	28-24N-1W (Danvers Quad)	Maurine Risser					5.2				Gravel pit

MENARD COUNTY

Pennsylvanian bedrock consisting of layers of shale, sandstone, limestone, and possibly coal underlies drift throughout Menard County. The ancient Mississippi bedrock valley passing near the northwest corner of the county, and the Athens bedrock valley crossing from south to north through the center of the county provide the major topographic features on this hidden surface.

The Illinoian glacier covered the entire county with drift. There are occasional outcrops of bedrock in the southern portion of the Sangamon River Valley. Flood waters from the Wisconsinan glacier approached to within 15 miles of Menard County and were responsible for the deep alluvial deposits in the Sangamon River and Salt Creek bottoms. The flood waters receded, and the wind picked up fine particles from the huge mud flats and deposited them on the uplands. These deposits, known as loess, are quite heavy throughout the county.

The Sangamon River and Sugar Creek provide the major drainage for the entire county.

Potential reservoir sites are generally available throughout Menard County, although conditions are more favorable in the western half. The results of nine feasibility studies follow.

Site 1. A large deep reservoir could be developed on Clary Creek by construction of a dam 2.5 miles south and 1 mile west of Oakford. Relocation and acquisition costs would be rather high since five frame residences, a major two-lane blacktop road, and three other township roads would be inundated. Cover in the lake area consists of clean tilled crops in the bottomlands and light timber on the valley walls. The dendritic nature of the drainage would provide an abundance of shoreline with many inlets and bays. Clary Creek drains the loess-covered Jacksonville drift south of Oakford. The upland topography has relief of 10 to 20 feet, and the valleys are cut about 100 feet below the uplands. The abutments and valley walls consist of till overlain by about 20 feet of buff colored loess. The top of the dam would probably lie below the loess-till contact. Sufficient till is readily available for construction of the earth fill. Loess might be suitable for use on the flanks of the dam. The site is considered feasible geologically, subject to verification by a complete program of boring and materials testing.

Site 2. This site may be considered an alternate to *site 1* since it lies just 1 mile to the east on Little Grove Creek. This would make a very narrow reservoir. A two-lane oil road and a two-lane gravel road cross the site but would not present any problem. No residences nor other man-made obstructions would be involved. The narrow floodplain is clean tilled, but the valley walls and tributary valleys are in light timber. The watershed lies

within a deep loess area of the Illinoian drift plain. Wisconsinan outwash sands and gravels occur as local deposits on the Illinoian drift. The abutments and valley walls are steep and consist of glacial till overlain by 5 to 25 feet of loess. The loess-till contact is above the top of the dam so that leakage or piping through the loess will not be a factor. Depth of the valley alluvium is unknown, but is underlain by till similar to that in the abutments. Till suitable for borrow would be available from nearby deposits. No serious geologic problems are expected at this location. This site should develop at a low project cost.

Site 3. A small reservoir could be developed on Tar Creek with the dam located 2.5 miles east of Oakford. No residences nor utilities would be involved. One township road would have to be raised or possibly abandoned. The downstream half of the bottoms are in pasture and the remainder is in brush and light timber. At least half of the valley walls are in light timber. The watershed lies within the Illinoian drift plain and exhibits gently undulating upland topography and deeply entrenched V-shaped valleys. Logs of previous borings indicate that the thickness of glacial drift is about 200 feet. Conditions at the abutments do not appear favorable since well sorted sand and loess are the only materials visible. Unless borings show that an impervious material such as till underlies these deposits at relatively shallow depths, the site may not be feasible. A surficial examination did not locate a source of borrow unless the weathered loess proves suitable. In general no positive statement can be made regarding the geologic feasibility of this site until a complete program of testing and borings has been completed. This site should result in a low cost project.

Site 4. Concord Creek, a minor tributary of the Sangamon River, drains the nearly flat Illinoian drift plain east of Atterberry. The proposed reservoir would extend southward about 2.5 miles from the dam site located 4 miles north and 1 mile west of Petersburg. Previous borings near the site indicate that glacial drift, primarily silt and till, is more than 200 feet thick and has a sand and gravel horizon at a depth of 75 to 100 feet. The core of the abutments is believed to be till but is obscured by loess and vegetation. The stream flows in a 6- to 10-foot notch cut into an alluvial silt deposit of undetermined depth. A complete program of borings and testing would be required to determine foundation conditions, possible leakage through sand horizons, and to locate a source of borrow. Land use consists of pasture except for brush in the lower third of the lake area. No residences would be involved, but an access road and two township roads would be inundated. Existing town-

ship roads would provide access to several points on the lake. If the geologic problems can be reconciled, this site could develop at a moderate project cost.

Site 7. A good potential reservoir is available on Grove Creek with the dam site 1.5 miles southeast of Greenview. A two-lane blacktop road would have to be raised for a short distance, and two residence access roads could be raised or relocated. No residences would be involved, but an overhead power transmission line would have to be relocated or improved. About a third of the lake area is under cultivation, and the remainder is in brush and light timber. The lake would be surrounded by all-weather roads including Illinois Route 29. Bedrock in this area lies only a few feet below the bottom of the stream and crops out in Indian Creek about 4 miles to the south. Surficial soils are developed in loess which mantles the gently rolling topography. Loess and vegetation hide the underlying material of the abutments, but one previous boring indicates that bedrock was overlain by 15 feet of till which in turn was overlain by 10 feet of loess. Wisconsin gravel outwash is common to the area, but was not observed. Material suitable for borrow is available in the underlying till and possibly from weathered loess. A small part of the reservoir area has been mined out and this should be located and studied. This site should develop at a moderate project cost.

Site 9. A small reservoir could be developed by construction of an earth dam 1.5 miles northwest of Athens on Halls Branch. No roads nor residences would be involved. The railroad crossing near the upper reaches

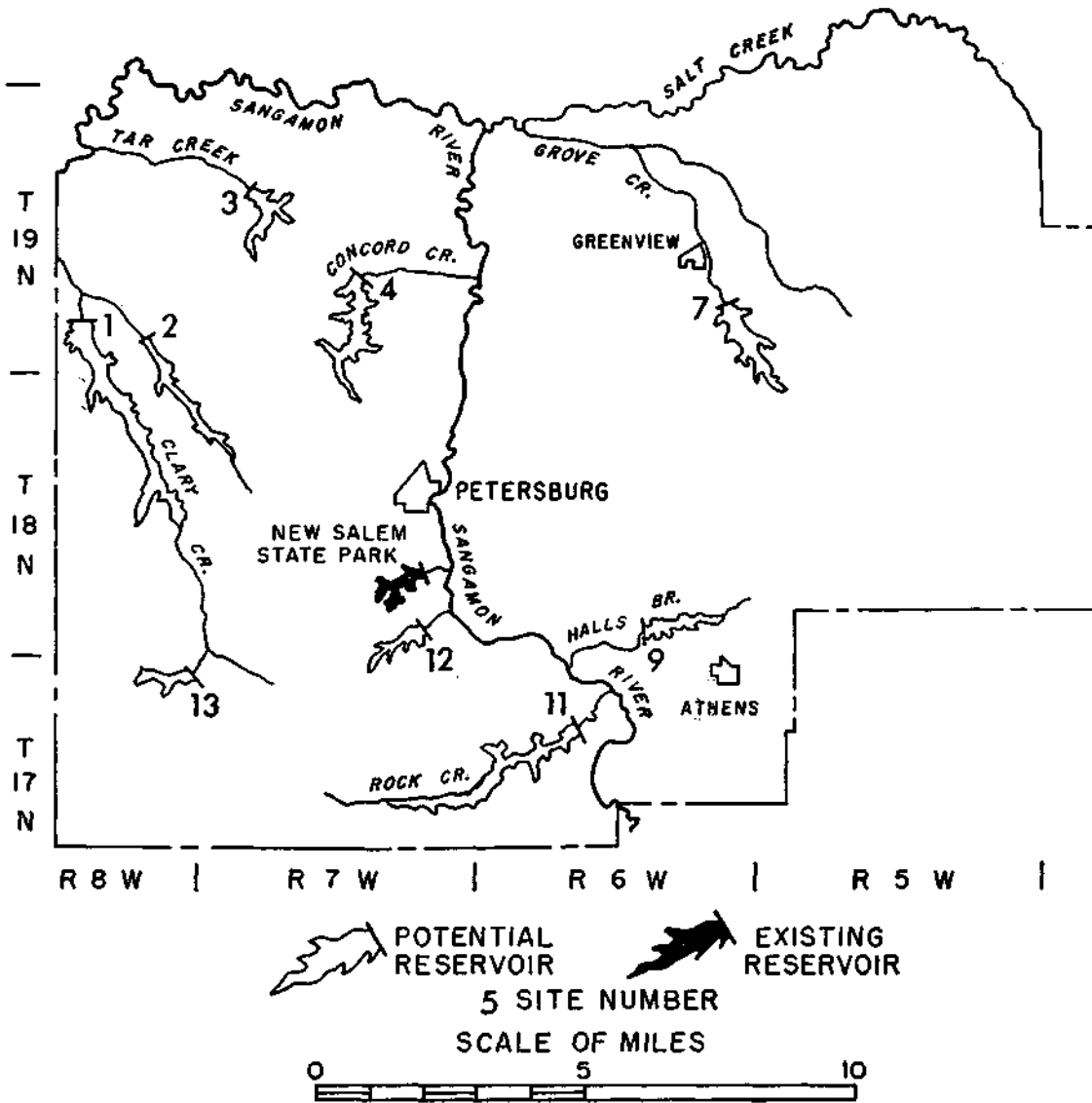
should be out of danger. Although there are small plots of pasture within the lake area, brush and light timber are most common. Halls Branch is a tributary of the Sangamon River and is deeply entrenched in the very gently rolling Illinoian drift plain. Wisconsin gravel outwash deposits are common in the area, but none were apparent at the dam site. Bedrock is covered with till which is capped with up to 15 feet of loess on the higher gentler slopes. The stream flows in a narrow floodplain in a 5-foot notch of alluvial silt. Clayey till suitable for borrow is available nearby. Although subject to verification by an adequate program of borings and testing, a preliminary investigation indicates that no serious geologic problems would be encountered.

Site 11. A dam across Rock Creek, 0.5 mile above the Sangamon River bottoms, would create a lake about 3 miles long. Illinois Route 97 crosses the upper reaches of the site and with the existing township roads provides good access to the lake area. One of the two township roads crossing the site could be raised and the other abandoned. One small frame dwelling would be inundated. The downstream third of the lake area is in timber, and the remainder is clean tilled. Rock Creek is deeply entrenched into the gently undulating Jacksonville moraine. The abutments contain a buff loess about 12 feet thick over 6 feet of dark reddish brown loess. Till may underlie the loess, but could not be seen on the surface. The stream flows in a 6-foot notch cut in alluvial silts, sands, and gravel. The more clayey portions of the loess and possibly underlying till may be used for borrow. At the Lake Petersburg site 5 miles to the northwest,

Potential Reservoirs in Menard County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Clary Creek SE ¼ SW ¼ 27-19N-8W (Petersburg Quad)	550	1,382	31,315	10,200	38.8	0.6	68	1,350	865	31	15.74	13.8	13.8	13.4	10.7	14.6	13.3	8.3	7.1
2	Little Grove Creek SE ¼ NE ¼ 35-19N-8W (Petersburg Quad)	550	282	3,285	1,100	10.4	1.4	35	650	140	12	4.22	4.0	3.1	2.0	1.9	2.4	1.8	1.2	1.0
3	Tar Creek NW ¼ NW ¼ 17-19N-7W (Petersburg Quad)	550	128	1,920	600	5.4	1.3	45	700	195	10	2.19	2.1	1.8	1.2	1.0	1.4	1.2	0.7	0.6
4	Concord Creek SW ¼ SE ¼ 22-19N-7W (Petersburg Quad)	550	365	4,620	1,500	12.0	1.2	38	700	170	17	4.9	4.6	3.9	2.6	2.3	3.4	2.6	1.5	1.5
7	Grove Creek Cir. S ½ 25-19N-6W (Mason City Quad)	570	279	3,255	1,100	11.9	1.7	35	800	172	9	5.03	4.6	3.2	2.4	2.3	2.7	2.2	1.6	1.4
9	Halls Branch Cir. NE ¼ 34-18N-6W (Springfield and Tallula Quads)	560	90	1,140	400	4.0	1.3	38	500	121	4	1.33	1.3	0.8	0.5	0.4	0.7	0.5	0.2	0.2
11	Rock Creek SW ¼ NW ¼ 9-17N-6W (Tallula Quad)	550	499	6,650	2,200	18.0	1.0	40	950	251	16	5.97	5.6	4.4	2.7	2.3	3.8	2.7	1.5	1.1
12	Trib. Sangamon River Cir. NE ¼ 35-18N-7W (Tallula Quad)	590	160	2,025	700	2.5	0.5	38	750	166	9	0.83	0.6	0.6	0.6	0.5	0.7	0.5	0.3	0.2
13	Clary Creek Cir. NE ¼ 1-17N-8W (Tallula Quad)	590	77	718	200	2.9	1.8	28	550	80	4	1.18	1.0	0.7	0.5	0.4	0.5	0.4	0.3	0.2

MENARD COUNTY



Existing Reservoirs in Menard County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)	(ft)	(ft)		(ac-ft)	(mg)	(in)	
Lake Petersburg	22-23-26-27-18N-7W (Taliula Quad)	Lake Petersburg Assoc.	2.28	1,459	70	60	190.7	4,300	1,400	35.4	
	35-19N-5N (Mason City Quad)	Alvin Krell	0.37	240	20	18	6.2	38	12.4	1.9	Aerial photo

weathered bedrock had to be excavated to insure a suitable foundation.

Site 12. A small reservoir could be built on a tributary of the Sangamon River just 1 mile south of Lake Petersburg. A study of the problems and techniques of the Lake Petersburg site would be invaluable if this development should be undertaken. Two township roads cross fingers on the upper reaches but could be easily

raised. Good access is provided by Illinois Route 97 and existing township roads. At the dam site the stream flows on bedrock consisting of shale or broken limestone. Till may overlie the bedrock but this was obscured by loess which is as deep as 15 to 20 feet on the uplands. Suitable borrow can probably be obtained from the nearby deposits of weathered loess. An abandoned mine shaft was observed downstream from the site, and the extent of mined-out areas would have to be determined

before development. The existence of Lake Petersburg seems to indicate that this site would be feasible, subject to verification by a program of testing and borings.

Site 13. A small reservoir could be developed on the upper reaches of Clary Creek just north of the Tallula city limits. One gravel road crossing the site could be raised. The reservoir area is in pasture. The valley is V-shaped and entrenched in the gently rolling Illinoian

drift plain. Logs of previous borings indicate that dark brown clayey till is overlain by 10 feet of loess. No serious geologic problems are expected, and none were encountered during a surficial examination. An exposure on the left abutment shows 5 feet of silty loess over 6 feet of clayey loess over 3 feet of till, the base of which was not exposed. Suitable borrow may be obtained nearby from the till or weathered loess deposits. This site should result in a low project cost.

MORGAN COUNTY

The Illinoian glaciation covered Morgan County leaving drift deposits from 50 to 200 feet in depth. Sand and gravel deposits are thin and discontinuous in the southern half of the county, but are more common in the northern half. Deep sand and gravel beds are common in the lowlands around the Illinois Eiver Valley. When the last glacier receded, the flood waters subsided, exposing the broad mud floodplains in the river valleys. Silt size particles were picked up by the winds and re-deposited on the uplands. Such loessial deposits covered all of Morgan County, and are the parent material for upland soils.

All of Morgan County drains to the Illinois Eiver. The Apple Creek system drains the southern portion of the county, Mauvaise Terre Creek carries drainage from the central portion, and Indian Creek drains the northern third.

The bedrock surface is composed of Mississippian strata in the Illinois River Valley area and Pennsylvanian strata throughout the rest of the county. The Mississippian strata consist entirely of limestone. The Pennsylvanian bedrock is composed of layers of shale, limestone, siltstone, sandstone, and possibly coal.

Topographic and geologic conditions are generally favorable for reservoir development, and sites are available throughout Morgan County. The results of 18 feasibility studies follow.

Site 1. A dam across Mud Creek about 1 mile west of Arenzville would create a two-fingered lake. The only required road improvement would be a slight raise in a two-lane blacktop road over one finger of the site. Access to the dam site is quite good. No other man-made obstructions would be involved in the development. About 75 percent of the lake area appears to be under cultivation, and the remainder in timber. The dendritic drainage pattern is deeply entrenched in the gently rolling uplands. Logs of previous borings indicate that 20 feet of loess on the uplands is underlain by 140 feet of drift, primarily till. The dam site is near the Illinois bedrock

valley slope, and bedrock may be close to the surface. Strippable coal deposits are known to underlie the reservoir area. Loess draping into the valley obscured the abutment material which is believed to be till. The weathered loess and the more preferable underlying till occur in sufficient quantity for construction of an earth dam. The possibility of leakage through a narrow ridge separating Mud Creek from the Illinois Valley should be carefully investigated. This site is considered probably feasible geologically, subject to verification by a program of test borings.

Site 2. A small reservoir could be developed on a tributary of Indian Creek about 1.5 miles southeast of Arenzville. No roads would be inundated, but one residence would have to be acquired for shoreline control. Cover in the lake area is timber, brush, and a few patches of pasture. The watershed is relatively small and consists of gently rolling loess-covered uplands and a dendritic stream pattern. The bedrock surface which includes strippable coal deposits is overlain by 140 feet of drift, primarily till. Till is ideally suited to earth dam construction and is available in sufficient quantity. This site is considered probably feasible geologically, pending a complete program of testing and boring. This site should result in a moderate cost project.

Site 3. A large reservoir could be developed on Little Indian Creek with the dam site located about 3 miles southeast of Arenzville. Three north-south township roads and two residences would be inundated by the development, and U. S. Route 67 might have to be raised for a short distance. Several residences would have to be acquired for shoreline control. Nearly the entire floodplain is under cultivation, but the valley walls are half timber and half pasture. The watershed consists of a well developed drainage pattern and flat clean tilled uplands. Logs of previous borings indicate that about 150 feet of glacial drift, primarily till, overlies the bedrock surface and strippable coal reserves underlie most

of the reservoir area. The abutments are moderately steep and are probably composed of till obscured by loess which drapes into the valleys. Alluvium in the valley may be 50 feet or more deep, presenting a foundation problem which would require further study. Till and weathered loess should be available in sufficient quantity for construction of an earth dam. This site is considered probably feasible geologically, pending the results of future borings, particularly with regard to foundation conditions. This site should result in a moderately high project cost.

Site 4. A dam across Indian Creek some 11 miles southwest of Ashland would create a reservoir 1.5 miles long plus three narrow fingers each about 3 miles in length. Road relocations would require considerable study since township roads would be inundated in eight locations. No residences would be inundated, but it might be desirable to obtain several to achieve shoreline control. The lake area is free from timber and under cultivation, with the exception of the small fingers and the creek banks. The watershed consists of gently rolling loess-covered Illinoian drift plain with a dendritic pattern of deeply entrenched stream valleys. The city of Ashland lies within the watershed and could be a serious source of pollution. Pennsylvanian bedrock is believed to occur near stream bed level at the dam site. The bedrock may be overlain by 50 to 60 feet of till and 10 to 20 feet of loess on the uplands. Sufficient till is available for construction of an earth dam which very likely would be founded on and keyed into bedrock. This site is considered probably feasible geologically, pending an adequate program of testing and boring. This site should develop at a moderately high project cost.

Site 5. A small lake could be developed on the upper reaches of Snake Creek with the dam located 3 miles south and 1 mile east of Litterberry. The watershed consists of a gently undulating loess-covered Illinoian drift plain that slopes gradually into the V-shaped valley. One residence would have to be acquired, but no roads would be involved. Access to the dam site is very good. Both the watershed and the lake area are under clean tilled cultivation. The abutments show moderate slopes and, although obscured by loess and vegetation, probably are composed of glacial till. A surficial examination of this site from a geological as well as engineering standpoint did not uncover any serious problems, and it is probably feasible geologically. The site could probably be developed at a moderate project cost.

Site 6. A major reservoir could be developed on Indian Creek by construction of a dam 4 miles east of Concord. Three township roads and a short distance of U. S. Route 67 would be inundated. At least three residences would have to be acquired for shoreline control. The

creek at the dam site and for several miles upstream flows in an improved channel. The bottomland appears quite productive. This would be an attractive site since there is considerable timber on the valley walls and good access is provided by U. S. Route 67. Indian Creek and its tributaries are dendritic in nature and deeply entrenched in the loess-covered Illinoian till. A bedrock valley underlies this area causing the drift thickness to range from 50 to 200 feet. Depth of alluvium in the broad flat floodplain would have to be determined by future borings. The abutments have moderate slopes and are probably composed of glacial till obscured by loess. Glacial till should be available in sufficient quantity for construction of the earth fill, but clayey loess may be suitable for flanks of the dam. This site is classified as probably feasible geologically, pending the results of future test borings. Higher than average land and relocation costs would make this a moderately high cost project.

Site 7. An attractive reservoir site is available on Coon Run with the dam site located about 0.75 mile west of Concord. No roads nor residences would be involved in the development. Cover consists of pasture and only scattered areas of timber. The watershed extends south and west of Concord and consists of gently rolling loess-covered uplands and moderately steep walled valleys. Logs of previous borings indicate that glacial drift, primarily till, about 100 feet thick overlies the bedrock surface. Strippable coal deposits are known to underlie parts of the reservoir area. The core of the abutments is probably glacial till, and the alluvium in the floodplain is not expected to be deep. This site is classified as probably feasible, geologically, subject to verification by a program of test borings. This site should develop at a low project cost.

Site 8. A considerably larger reservoir could be developed on Coon Run downstream from *site 7*. The dam would be located about 0.75 mile upstream from the Illinois River bluff line, or about 3 miles east of Meredosia. Two township roads would be inundated, but existing roads would form the basis for an excellent access system. At least two dwellings would have to be acquired to achieve shoreline control. Cover consists of clean tilled cultivation on the floodplain and timber on the valley walls. The watershed consists of gently rolling loess-covered uplands and a deeply entrenched dendritic stream pattern. The moderately steep abutments are covered with deep loess that drapes into the valley covering the underlying material. The dam probably would be founded on shale which underlies the stream bed at a relatively shallow depth. The deep loess cover would seal off any potentially leaky gravel layers in the valley walls. Material suitable for construction of an earth dam should be available from the nearby clayey

loess and underlying till deposits. This site is considered probably feasible geologically, pending future test borings.

Site 9. A small reservoir could be developed on an intermittent tributary of Willow Branch 6.5 miles west of Jacksonville. No roads, residences, nor utilities would be involved. Land use consists primarily of pasture with scattered timber. The watershed is relatively small and consists of clean tilled uplands developed in loess. Bedrock crops out in the vicinity of the reservoir and would probably form the foundation for the dam. The stream flows in a 3- to 4-foot notch composed of alluvial silt and loess. The abutments have moderate slopes and are composed of loess. Material suitable for a dam may be available in the weathered loess and possibly the underlying

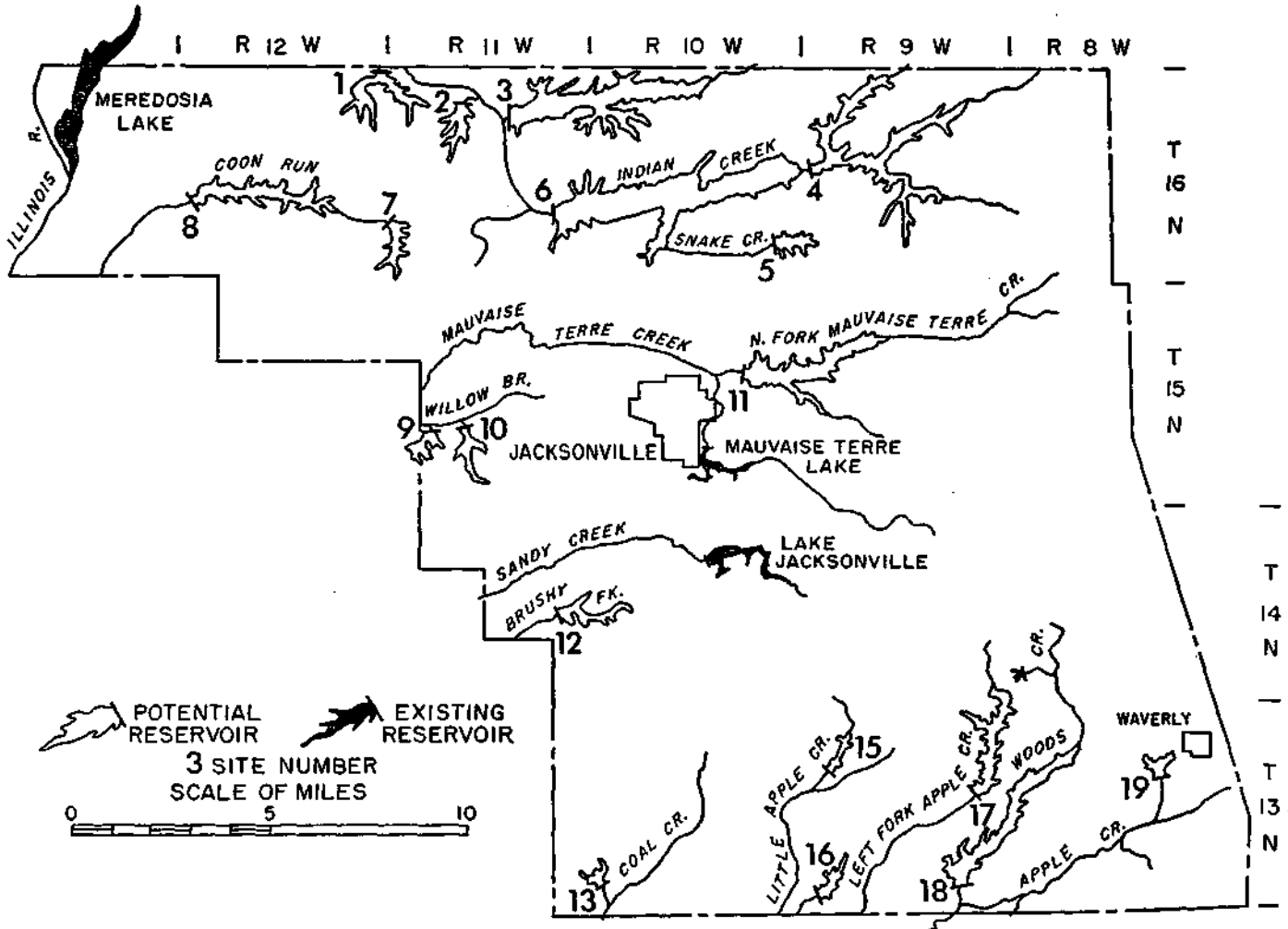
till if it is present. The site is considered probably feasible geologically, pending verification by a complete boring and testing program. This site should develop at a minimal project cost.

Site 10. This site is larger but similar to *site 9*. The dam site is about 5.5 miles west of Jacksonville. A township road crossing a finger of the lake could be raised. Two residences are close to lake level and would have to be acquired. Land costs should not be high since most of the land is in pasture with scattered timber. The watershed is gently rolling except for the prominent Allison Mound on the west and is generally under cultivation. The abutments have moderate slopes covered by loess that drapes into the valley. Bedrock is expected to occur near the stream bed and possibly in the lower part

Potential Reservoirs in Morgan County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Mud Creek NE ¼ NE ¼ 1-16N-12W (Arenzville Quad)	520	326	5,430	1,800	9.0	0.9	50	1,100	412	14	4.47	4.3	3.6	2.7	1.7	3.5	2.1	1.2	0.9
2	Trib. Indian Creek NE ¼ NW ¼ 9-16N-11W (Arenzville Quad)	540	112	1,605	500	2.0	0.9	43	600	167	6	0.99	0.9	0.7	0.5	0.3	0.7	0.4	0.2	0.2
3	Little Indian Creek SE ¼ NE ¼ 10-16N-11W (Virginia and Arenzville Quads)	540	1,248	25,370	8,300	35.9	0.8	61	1,350	663	33	17.85	17.2	16.1	11.4	7.5	15.7	9.4	6.7	4.4
4	Indian Creek NW ¼ SE ¼ 18-16N-9W (Virginia Quad)	570	966	11,590	3,800	41.4	2.0	36	900	212	31	20.58	16.0	10.0	6.3	4.7	8.5	5.7	3.0	2.2
5	Snake Creek SE ¼ SW ¼ 25-16N-10W (Virginia Quad)	600	77	1,410	500	2.7	1.1	55	550	160	5	1.34	1.3	1.0	0.7	0.5	0.9	0.6	0.3	0.3
6	Indian Creek NW ¼ 25-16N-11W (Virginia and Arenzville Quads)	540	2,125	37,525	12,200	104.4	1.5	53	1,500	633	42	51.90	48.3	30.4	22.0	14.0	27.6	18.8	10.3	9.0
7	Coon Run Ctr. NW ¼ 30-16N-11W (Arenzville Quad)	570	211	2,110	700	7.70	2.0	30	700	116	9	3.83	2.9	1.8	1.1	0.8	1.5	0.9	0.5	0.4
8	Coon Run SE ¼ SW ¼ 19-16N-12W (Arenzville Quad)	520	557	11,320	3,700	21.6	1.1	61	800	353	19	10.74	10.5	8.0	5.8	3.8	7.8	4.7	2.7	2.2
9	Trib. Willow Branch SE ¼ SW ¼ 19-15N-11W (Winchester Quad)	580	102	1,390	500	2.1	0.8	41	650	166	4	1.04	0.9	0.8	0.6	0.4	0.8	0.5	0.3	0.2
10	Trib. Willow Branch NE ¼ SW ¼ 20-15N-11W (Winchester Quad)	580	173	2,360	800	4.5	1.1	41	950	241	7	2.24	2.1	1.6	1.2	0.7	1.6	0.9	0.5	0.4
11	N. Fk. Mauvaise Terre Creek SW ¼ NW ¼ 14-15N-10W (Virginia and Jacksonville Quads)	590	736	7,600	2,500	50.8	3.7	31	1,200	219	24	25.25	12.1	8.9	5.1	4.2	5.9	4.1	2.8	1.7
12	Brushy Fork NW ¼ SE ¼ 22-14N-11W (Winchester Quad)	600	371	4,945	1,600	11.3	1.2	40	700	173	16	5.49	5.2	3.3	2.4	1.6	3.1	1.9	1.0	0.9
13	Trib. Coal Creek SE ¼ SW ¼ 25-13N-11W (Winchester Quad)	600	77	924	300	2.9	1.7	36	700	158	5	1.41	1.1	0.7	0.5	0.3	0.6	0.4	0.2	0.2
15	Little Apple Creek NW ¼ SW ¼ 7-13N-9W (Jacksonville Quad)	620	128	1,490	500	6.0	2.2	35	450	103	5	2.91	2.0	1.3	0.8	0.6	1.1	0.7	0.4	0.3
16	Trib. Little Apple Creek SW ¼ NE ¼ 36-13N-10W (Jacksonville Quad)	590	77	1,155	400	1.4	0.7	45	650	178	4	0.68	0.6	0.6	0.5	0.3	0.6	0.3	0.3	0.2
17	Left Fk. Apple Creek NE ¼ SE ¼ 15-13N-9W (Jacksonville Quad)	650	813	17,890	5,800	12.4	0.4	66	900	532	33	6.02	5.5	5.5	5.5	4.3	5.3	4.6	3.4	2.2
18	Woods Creek NE ¼ NE ¼ 34-13N-9W (Jacksonville Quad)	600	934	19,920	6,500	22.7	0.6	64	1,100	528	30	11.02	10.4	10.4	7.9	5.5	10.2	6.3	4.6	3.0
19	Trib. Apple Creek SW ¼ NE ¼ 15-13N-8W (Waverly Quad)	640	64	661	200	2.0	1.6	31	800	135	4	0.97	0.8	0.5	0.3	0.2	0.4	0.3	0.1	0.1

MORGAN COUNTY



of the abutments. Sufficient borrow should be available from the weathered loess or underlying till. This site is considered probably feasible geologically, pending future borings and testing.

Site 11. A large reservoir development appears feasible on the North Fork of Mauvaise Terre Creek with the dam located 2 miles northeast of the Jacksonville square. About a fourth of the lake area is in timber, and the remainder is divided between pasture and row crop development. Township or county roads that cross the site in four locations include three gravel roads and one two-lane blacktop. Existing roads form the basis for a good access system. No dwellings would be inundated by the development, but several would probably be acquired for shoreline control. As much as 10 feet of loess covers many parts of the upland areas, but depth to bedrock is only 30 to 50 feet. The stream flows in a dredged channel 6 to 8 feet deep eroded in alluvial silt and loess. The moderately sloping abutments are separated by a 1000-foot wide floodplain and are mantled by loess.

Depth of alluvium in the floodplain would have to be determined by future borings, but the dam would very likely be founded on bedrock. Material suitable for the construction of an earth dam is available in the nearby clayey loess and underlying till.

Site 12. A good potential lake site exists about 5 miles northwest of Murrayville on Brushy Fork. The V-shaped valley is entrenched in the Illinoian Payson till plain in front of the Jacksonville moraine. A township road crosses the upper reaches of the site, but the remainder of the lake area is free from roads and residences. Cover is basically pasture with brush and timber. The abutments have moderate slopes composed of about 10 feet of loess over gravelly till with a few sand layers. Bedrock is expected to occur at a depth of between 50 and 100 feet. The channel is 6 to 8 feet deep and is composed of silt with a sand bottom. The depth of alluvium was not determined but is not expected to be great. Sufficient quantities of till are available for construction of an earth dam. The site is considered feasible, subject to

verification by an adequate program of test borings and materials testing. This site should develop at a low project cost.

Site 13. A small two-fingered site could be developed about 3.5 miles southwest of Murrayville on an intermittent tributary of Coal Creek. Two valleys separate the watershed about equally and appear to be V-shaped with no floodplain development. No roads, residences, nor other man-made obstructions would be involved in the development. Logs of previous borings and a surficial geologic examination indicate that the lower 15 to 25 feet of the abutments and the valley bottom are in bedrock. No serious problems are anticipated in constructing the dam or preventing leakage through the rock formations. Sufficient till is probably available for borrow. The site is considered probably feasible geologically, pending verification of these findings by an adequate program of boring and testing. This site should develop at a low project cost.

Sites 15 and 16. Both sites are tributaries of Little Apple Creek. *Site 15* is located about 2 miles northwest of Nortonville, and *site 16* about 3 miles southwest of Nortonville. These sites could be developed without disturbing either existing roads or residences. A third of each site is in timber. The valleys are steep walled and deeply entrenched in the gently rolling Illinoian drift in front of the Jacksonville moraine. Bedrock is overlain by 50 to 100 feet of drift on the uplands but may be expected at shallow depths within the valleys. Exposures at both sites indicate that the drift is composed of glacial till overlain by 8 to 10 feet of loess. Since

alluvium is not expected to be deep, a cut-off wall could be placed either into till or the underlying bedrock. Nearby deposits of till should be available for borrow. Both sites are considered probably feasible, subject to verification by borings and material testing.

Site 17. An attractive potential reservoir is available on Left Pork Apple Creek with the dam located about 4 miles southwest of Franklin. Township roads would provide excellent access to several points on the lake, and only one dirt road would have to be abandoned. A pipe line crossing the center of the site would be the most expensive relocation of the development. Timbered areas on the banks and surrounding the many coves are attractive features of this site. Although no residences would be inundated, it probably would be necessary to acquire a few for shoreline control. Apple Creek lies in a deep dendritic valley entrenched into the Illinoian till plain in front of the Jacksonville moraine. Logs of previous borings indicate that glacial drift is 50 to 75 feet deep. The abutments are quite steep and the bedrock at the base is overlain by till and capped with 8 to 10 feet of loess. The stream cuts about 10 feet deep into alluvial silt and sand of the wide flat floodplain, but bedrock should be expected at shallow depths. Sufficient till should be available for construction of an earth dam. The site is considered probably feasible, subject to verification by borings and material testing.

Site 18. A large reservoir could be developed on Woods Creek with the dam located about 7 miles southwest of Waverly. Woods Creek is a tributary of Apple Creek and drains the front slope of the Jacksonville

Existing Reservoirs in Morgan County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Mauvaise Terre Lake	28-15N-10W (Jacksonville Quad)		32.6	20,850	32.0	25.0	223.0	1,215	396.0	0.70	1952 sed. survey
Lake Jacksonville	9-14N-10W (Jacksonville Quad)	Jacksonville	17.0	6,880	54.0	49.0	469.0	6,874	2,240.0	7.58	1952 sed. survey
Concord Res.	28-16N-11W (Arenzville Quad)	Father Nogg Father Gatton	0.63	404	50.0	28.0	16.1	234	76.0	6.96	1952 sed. survey
Franklin Outing Club Res.	31-14N-8W (Jacksonville Quad)	CB&Q R.R.	0.45	288			25.6	300	98.0	12.50	1952 sed. survey
Morgan Lake	33-15N-10W (Jacksonville Quad)	Morgan	2.75	1,760			18.2	73	24.0	0.50	1952 sed. survey
Waverly City Res.	5-13N-8W (Waverly Quad)	Waverly	9.24	5,914	23.5	20.0	49.0	238.6	77.8	0.48	1952 sed. survey
Langdon Pond	31-14N-9W (Jacksonville Quad)	Jerome Langdon	0.35	229	20.5	15.0	6.3	44.8	14.6	2.40	1952 sed. survey
Jacksonville Spts. Cb.	9-14N-10W (Jacksonville Quad)	Elliott State Bank	0.31	201	23.5	16.0	6.3	35.6	11.6	2.15	1952 sed. survey
Carver Lake	16-16N-13W (Meradosia Quad)	Linn Farms Inc.					15.0				
Billings Lake	4-16N-13W (Meradosia Quad)	Chicago-Meradosia Gun Cb.					30.0				
Meradosia Bay	3-9-10-16N-13W (Meradosia Quad)	Linn Farms Inc.				3.0	724.0				
Murrayville-Woodson Lake	32-14N-10W (Jacksonville Quad)	Murrayville-Woodson	0.32	196	25.0	19.5	10.5				Constructed 1963

moraine. Of three township roads crossing this site, one could be placed over the structure, one could be raised slightly, and the other abandoned. Good township roads surround the site at close intervals, and Illinois Eoute 104 passes within 1 mile of the upper reaches. No dwellings would be inundated by the development, but a few may interfere with shoreline requirements. The floodplain is wide and flat and for the most part under cultivation. The valley walls are wooded, offering good recreational potential. Logs of previous borings indicate that bedrock is overlain by 50 to 75 feet of glacial drift and as much as 10 feet of loess. The abutments are steep and wooded and probably consist of bedrock at the base overlain by glacial till and loess. The bedrock is obscured by alluvium in the floodplain but is not expected to be deep. The till which underlies the loess in most areas exists in sufficient quantity and is expected to be suitable for the construction of an earth dam. This site is considered probably feasible geologically, subject to

verification by an adequate program of borings and material testing.

Site 19. A small site is available on an intermittent tributary of Apple Creek about 1 mile southwest of Waverly. No roads nor residences would be involved, but its proximity to Waverly could make land costs moderately high. The site is in timber and a few patches of pasture. Pipe lines from a nearby natural gas field might be a problem. A portion of Waverly is included in the watershed, creating a potential source of pollution. No serious geologic problems are anticipated. Logs of previous borings indicate that bedrock is overlain by till which in turn is overlain by loess. The valley walls and abutments have moderate slopes and are basically composed of till. The stream channel is a shallow notch in alluvial sand and silt which is not expected to be deep. This site is considered feasible, pending verification of these findings by borings and material testing. This site should develop at a moderate project cost.

PEORIA COUNTY

Prior to glaciation the topography of Peoria County was rough and hilly. A partial leveling took place when glaciers moved over the county filling the valley with drift. After the Illinoian glacier receded, a soil developed that is known as the Sangamon soil. The Iowan glacier did not reach Peoria County but provided the material for a deposit of wind-blown silt, known as loess, from 10 to 15 feet thick over the Sangamon soil. A new soil formed from the surface of the loess is called the Peorian. The Wisconsinan glacier covered the northeastern third of the county, burying the Illinoian drift and Sangamon soil still deeper, and covering the Peorian soil. Two extensive moraines, the western known as the Shelbyville, and the eastern known as the Bloomington, came together in Tazewell County before they crossed the Illinois River. The moraines then divided into two distinct ridges south of Dunlap, and united again in the extreme northeastern portion of Peoria county. The glacial deposits in the moraines vary from 150 to 200 feet in thickness and are composed of stratified gravel in some areas, particularly along the lower Kickapoo Creek. In some places calcium carbonate has cemented the gravel together into a conglomerate. The Wisconsinan drift is covered by 3 to 6 feet of loess except on the rolling portions where it has been removed by erosion.

The entire county lies in the Illinois River Basin with the northwestern portion drained by the Spoon River and most of the remainder by Kickapoo Creek.

The bedrock surface is exposed in many of the larger valleys in Peoria County. It is typically Pennsylvanian

consisting of layers of shale, limestone, sandstone, and coal seams. Coal mines in the valley walls could present a leakage problem in reservoir development.

In general, both topography and geology are favorable for reservoir development in Peoria County, and potential sites are distributed throughout the county. The results of 15 feasibility studies follow.

Site 1. A potential reservoir exists on a north-south tributary of Spoon River 5 miles west and 2.5 miles north of Princeville. The floodplain is narrow and most of the site is in timber or some pasture. Two east-west dirt roads cross the reservoir area and could be abandoned. The north-south gravel road could be raised and relocated. Two small farm ponds have been constructed just upstream from fingers on the reservoir site. The stream bed and floodplain consist of silt and sand. The valley walls have moderate slopes, and consist of tan till overlain by loessial silt. No bedrock is exposed at the dam site. Suitable material for the construction of an earth dam is available. This site is probably feasible and should result in a good reservoir at a moderate project cost.

Site 2. A potential reservoir site exists on Henry Creek, a tributary of Senachwine Creek, 1.5 miles west and 1.5 miles north of North Hampton. The entire reservoir area is in brush and light mixed hardwoods. A dirt township road crosses the upper tip, but is only used for access to cultivated fields. This should make a good small

deep reservoir. There are no known obstructions, residences, utilities, nor roads in the reservoir area. The channel is about 100 feet wide. The stream bed consists of glacial drift and bedrock fragments in sand. The floodplain consists largely of alluvial silt overlying glacial drift and bedrock. The valley walls have moderate slopes and consist of glacial till with gravel and some sand overlain by red or grayish loess. No bedrock is exposed at the dam site. Material suitable for the construction of an earth dam is available. The site is probably feasible and should result in a low cost project.

Site 3. A potential reservoir site exists on Senachwine Creek 3 miles north and 2 miles west of Chillicothe. The bottomland is in cultivated clean tilled crops. Two two-lane gravel township roads cross the reservoir area. The east-west township road could be raised, and the north-south township road abandoned in favor of a township road 0.75 miles to the east. The valley walls are covered with mixed hardwoods. Gas pipe lines are in the vicinity, but none were observed across the reser-

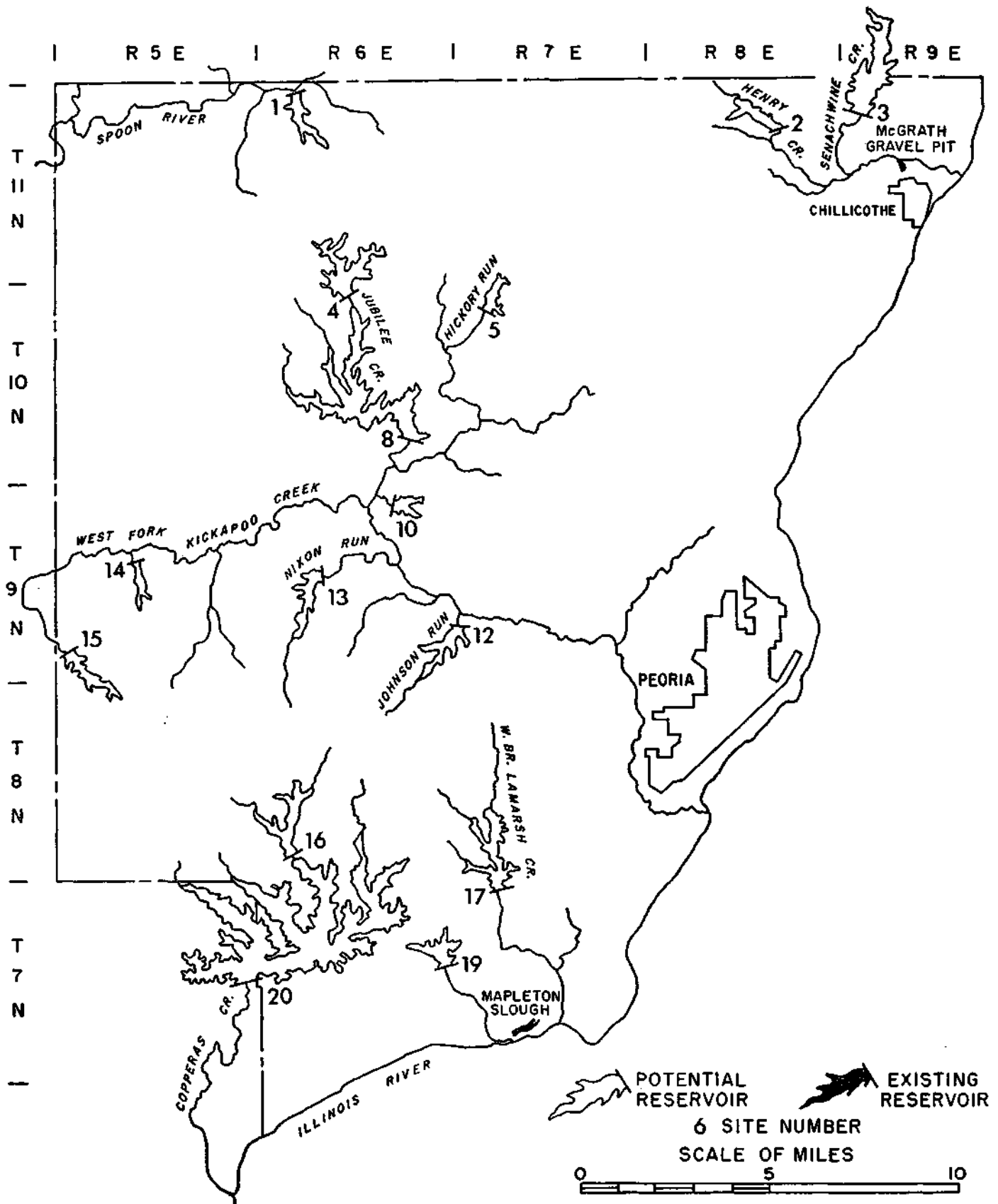
voir area. The channel is about 50 feet wide, in a floodplain 0.25 mile wide. The stream bed consists of silt and gravel. The lower 4 or 5 feet of the floodplain consists of mixed gravel and rock fragments overlain by well stratified alluvial silt with considerable gravel on the surface. The east valley wall has a moderate to steep slope, the west wall has a slope up to 45 degrees. The valley walls consist of glacial till with some concentration of gravel. Material suitable for the construction of an earth dam is available. The site is probably feasible, but land acquisitions and construction costs would make this a moderately high cost project.

Site 4. A potential reservoir site exists on Jubilee Creek, a tributary of Kickapoo Creek, 3.5 miles east and 3 miles north of Brimfield. Only a small percentage of the reservoir area is free from timber. One dirt road crosses the site but could be abandoned. The stream bed and floodplain consist of silt. The west valley wall has a gentle slope and the east valley wall has a moderate slope. Both consist of tan till mantled with loessial silt.

Potential Reservoirs in Peoria County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Spoon River Cr. W 1/4 5-11N-6E (Elmwood Quad)	660	262	4,365	1,400	4.6	0.4	50	1,050	361	8	1.76	1.5	1.5	1.5	1.5	1.6	1.4	1.2	1.1
2	Henry Creek SW 1/4 NE 1/4 10-11N-8E (Dunlap Quad)	640	128	2,388	800	4.2	0.9	56	800	317	4	1.99	1.9	1.6	1.3	1.2	1.4	0.9	0.7	0.6
3	Senachwine Creek NW 1/4 NW 1/4 7-11N-9E (Dunlap Quad)	600	1,062	27,612	9,000	42.70	0.8	78	1,700	1,370	22	20.25	19.9	17.6	15.0	14.3	16.7	11.4	8.5	7.8
4	Jubilee Creek SW 1/4 NE 1/4 4-10N-6E (Elmwood Quad)	680	281	6,556	2,100	7.2	0.5	70	850	180	14	2.84	2.5	2.5	2.5	2.5	2.6	2.2	1.9	1.7
5	Hickory Run SE 1/4 SE 1/4 6-10N-7E (Dunlap Quad)	700	64	1,237	400	3.0	1.1	58	400	122	4	1.18	1.1	0.9	0.8	0.8	0.9	0.6	0.4	0.4
8	Jubilee Creek NW 1/4 SE 1/4 26-10N-6E (Elmwood Quad)	600	1,312	27,985	9,100	34.4	0.5	64	1,150	311	40	13.56	12.8	12.6	12.6	12.2	12.5	10.0	8.5	7.8
10	Trib. Kickapoo Creek NE 1/4 SW 1/4 3-9N-6E (Elmwood Quad)	580	90	1,500	500	2.5	0.7	50	650	230	4	0.99	0.9	0.9	0.8	0.7	0.9	0.6	0.4	0.4
12	Johnson Run NE 1/4 NE 1/4 25-9N-6E (Glasford Quad)	540	211	2,954	1,000	11.5	1.7	42	800	173	8	4.53	4.2	2.9	2.2	1.9	2.5	1.9	1.2	1.1
13	Nixon Run SE 1/4 SE 1/4 17-9N-6E (Elmwood Quad)	600	243	3,482	1,100	8.9	1.1	43	700	151	9	3.51	3.4	2.7	2.3	2.1	2.5	1.8	1.2	1.0
14	Trib. W. Fk. Kickapoo Creek SW 1/4 NW 1/4 16-9N-5E (Elmwood Quad)	620	115	1,495	500	3.2	0.9	39	700	159	4	1.26	1.2	1.0	0.9	0.8	1.1	0.7	0.4	0.3
15	Trib. W. Fk. Kickapoo Creek NW 1/4 NW 1/4 31-9N-5E (Glasford Quad)	700	230	3,680	1,200	5.0	0.6	48	500	164	12	1.97	1.8	1.8	1.7	1.6	1.8	1.3	1.0	1.0
16	East Br. Copperas Creek NE 1/4 NE 1/4 31-8N-6E (Glasford Quad)	620	416	8,457	2,600	12.2	0.6	61	800	302	10	4.67	4.5	4.4	4.2	4.0	4.4	3.4	3.1	2.8
17	West Br. LaMarsh Creek SW 1/4 SW 1/4 32-8N-7E (Peoria Quad)	560	448	4,776	1,600	15.5	1.4	32	1,000	176	13	5.93	5.7	4.2	3.9	3.3	3.7	2.7	1.9	1.6
19	Little LaMarsh Creek Cr. 13-7N-6E (Glasford Quad)	580	198	3,960	1,300	3.9	0.4	60	550	236	8	1.49	1.3	1.3	1.3	1.3	1.4	1.2	1.1	1.0
20	E. Br. Copperas Creek S. line 13-7N-5E (Glasford Quad)	580	3,155	90,422	29,500	61.3	0.3	86	1,700	1,128	90	23.47	20.1	20.1	20.1	20.1	19.2	19.2	19.2	19.2

PEORIA COUNTY



Material suitable for the construction of an earth dam is available. The site is probably feasible, and should make a good deep reservoir at a moderately low project cost.

Site 5. A potential reservoir site exists on Hickory Run, a tributary of Kickapoo Creek, 4 miles south and 1 mile east of Princeville. The entire reservoir area is in pasture and scrub brush with some scattered light mixed hardwoods. There are no residences, obstructions, relocations, nor utilities. The stream bed consists of gray shale and siltstone. The valley bottom is composed of two terraces about 7 and 18 feet above the stream bed. They consist of gray shale overlain by tan till or colluvium. The valley walls have moderately steep slopes consisting of shale of Pennsylvanian age overlain by at least 3 feet of tan till at the base. Suitable material for the construction of an earth dam is available. The site is probably feasible and should result in a good small reservoir at a moderately low project cost.

Site 8. A potential reservoir exists on Jubilee Creek, a tributary of Kickapoo Creek, 5 miles east and 1 mile south of Brimfield. The dam site is on the north boundary of Jubilee College State Park. A gravel road crossing the proposed structure could be abandoned. An east-west two-lane gravel road crosses the site in two places and would probably be raised. A north-south gravel road could be raised or relocated. The valley walls

are in heavy timber. The floodplain is in pasture with a portion under cultivation. There are no residences involved, road relocations are at a minimum, and land costs should be low. The stream bed consists of sand, silt, and some pebbles. The floodplain is very wide and consists mostly of alluvium silt with some pebbles. The valley walls consist of glacial outwash, silty clay, clayey silt, sand, and gravel. These deposits have been exposed by gravel pit operations in the area in former years. This site is classified as feasible only if extensive sand and gravel deposits do not permit excessive leakage from the reservoir. This site should result in a low cost project.

Site 10. A potential reservoir exists on a tributary of Kickapoo Creek located 2.5 miles west of Kickapoo. The reservoir area is predominantly covered with timber except for a small cultivated area near the dam site. The abutments and steep valley walls are covered with heavy timber. No residences, roads, nor utilities would be involved in this development. The channel is about 6 feet deep. The stream bed consists of sand, silt, gravel, and some glacial rock. The floodplain consists of silt. The valley walls have moderately steep slopes and consist of sandy drifts overlain by loessial silt. Gravel pits have been operated at points along the valley walls. Material suitable for the construction of an earth dam is available. The site is considered feasible only if the sand and gravel in the valley walls do not allow excessive leakage from

Existing Reservoirs in Peoria County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Elmwood Res.	8-9N-5E (Elmwood Quad)										
Peoria Water Works Res.	27-9N-8E (Peoria Quad)										
Keystone Steel Res.	25-8N-7E (Peoria Quad)										
	22-11N-5E (Elmwood Quad)	Stanoliad Pipe Co.									
Meadow Lake	3-10-11N-9E (Metamora Quad)										
Bemis Bag Res.	35-9N-8E (Peoria Quad)										
	3-8N-7E (Peoria West Quad)	Timber Lake C. Cb.	0.37	240			7.9				
	20-11N-8E (Dunlop Quad)	Arrowhead C. Cb.	0.53	340			5.0				
Pond Lily Lake	29-7N-7E (Pekin Quad)		0.31	200			69				
LaMar Quarry	20-11N-7E (Dunlop Quad)						6.6				
McGrath Gravel Pit	18-11N-9E (Dunlop Quad)						50.0				
Orange Prairie Lake	11-9N-7E (Dunlop Quad)		0.18	115			5.0				
Radnor Lake	12-9N-7E (Dunlop Quad)										
	9-10N-8E	Lakewood C. Cb.	0.08	50			5.0				
	3-8N-5E (Glasford Quad)	Vincent Turner	0.12	75			8.0				
	22-8N-5E (Glasford Quad)	Comm. Nat'l Bk. & Trust	0.15	97			5.0				

the reservoir area. This site should develop at a low project cost.

Site 12. A potential reservoir site exists on Johnson Eun, a tributary of Kickapoo Creek, located 0.75 mile south of Edwards and 2 miles east and 3 miles north of Hanna City. A complete study of this site at the present time is difficult because of the active Peabody strip mining area east of the dam site. At least one mine access road crosses the proposed lake site. There are several possible sites on Johnson Run, and a lake on this creek would play an important part in the redevelopment of the strip mining area. The channel is 9 feet deep. The stream bed and floodplain consist of sand and silt with some gravel and sandstone rock chips. The upper portion of the floodplain is primarily alluvial silt. The slope of the west valley wall is moderate, but the east valley wall is steep. The upper 20 feet of the valley walls consist of glacial drift mantled with 2 to 4 feet of loessial silt. The bedrock consists of formations of Pennsylvanian age. A coal bed about 20 feet above the floodplain has been extensively mined and could contain indeterminate avenues of escape for water from the reservoir. Material suitable for the construction of an earth dam is available. This site would be considered feasible only if assurance could be made that excessive leakage in the old mines would not occur.

Site 13. A potential reservoir site exists on Nixon Run, a tributary of Kickapoo Creek, located 7 miles east and 1.5 miles south of Elmwood. About three-fourths of the reservoir area is free from timber and in pasture. There are no residences in the development, nor other obstructions. One east-west gravel road crossing the upper reaches could probably be raised. The abutments are well defined and free from timber. The stream bed consists of sand and some gravel on scattered rocks of larger size. The floodplain consists of silt, sand, and some coarser material. The valley walls have moderately steep slopes and consist of siltstone, shale, and sandstone formations of Pennsylvanian age, overlain by a lower clayey glacial drift containing coarse rock material, overlain by an orangish tan till containing considerably less rocky material than the lower till, overlain by loessial silt. Material suitable for an earth dam is available. The site is probably feasible; however, a seam of coal is in evidence in the nearby road cut.

Site 14. A potential reservoir site exists on a tributary of West Fork Kickapoo Creek located 1.25 miles east and 0.75 mile south of Elmwood. The reservoir area is in brush or pasture with scattered timber. There is some heavy timber on the valley walls. A two-lane blacktop road would have to be raised. The channel is 9 feet deep, and the stream bed consists of sand, gravel, and some silt. The floodplain consists of gray alluvial silt with some

rocky drift. The valley walls have gentle slopes and consist of till containing scattered gravel and lenses of gravel. Gravel pits are operated along the West Pork. Material suitable for the construction of an earth dam is available. The feasibility of this site would depend on whether the valley walls consist of gravel such as that being removed along the West Pork Kickapoo Creek. This is a good small site and should develop at a normal project cost.

Site 15. A potential reservoir site exists on a tributary of West Pork Kickapoo Creek 2 miles north and 1.25 miles east of Farmington. The reservoir area is half pasture, half timber. There are no roads nor residences involved in this site. An existing farm pond in one finger of the site is being raised. The channel is 9 feet deep. The stream bed consists of sand, silt, and rock. The floodplain consists of alluvial silt over gravel and occasional tan till or colluvium. The northeast valley wall has a gentle slope but the southwest wall is moderately steep. The lower parts of the valley walls are shale, siltstone, sandstone, and limestone formations of Pennsylvanian age. The upper part consists of tan till with a regular gravel concentration overlain by loessial silt. Material suitable for the construction of an earth dam is available. The reservoir is probably feasible and should result in an excellent reservoir developed at a moderately low project cost.

Site 16. A potential reservoir site exists on the East Branch Copperas Creek, a tributary of the Illinois River, 4.5 miles north and 2 miles west of Glasford. The lower portion of the floodplain is under cultivation, and the upper reaches are in pasture with scattered timber. Two east-west gravel roads crossing the site would probably have to be relocated. The channel is 7 feet deep, and the stream bed consists of sand, silt, and gravel. The floodplain consists mostly of alluvial silt underlain by silt and sand with gravel. The valley walls have moderate slopes and consist of tan till overlain by loess and underlain by bedrock consisting of mostly soft sandstone of Pennsylvanian age. Material suitable for the construction of an earth dam is available. The site is considered possibly feasible, and should result in a good reservoir at a moderate project cost.

Site 17. A potential reservoir exists on the West Branch LaMarsh Creek, a tributary of the Illinois River, 6 miles west and 5 miles south of Peoria. At least five residences, a farm unit, and miscellaneous buildings would be inundated. A two-lane blacktop east-west county highway would have to be raised, and a two-lane gravel township road abandoned. The upper half of the reservoir area is in pasture, and the lower half in clean tilled crops. The stream bed and floodplain consist of sand, silt, gravel, and some large slabs and blocks of sandstone.

The west valley wall has a gentle to moderate slope, but the east wall is very steep. The upper portions of the valley walls consist of glacial drift mantled with 2 to 4 feet of loessial silt; the lower portions consist of formations of Pennsylvanian age. Material suitable for the construction of an earth dam is available. This site is probably feasible and should result in a good reservoir at a moderately low project cost.

Site 19. A potential reservoir site exists on Little LaMarsh Creek, a tributary of the Illinois River, 2.5 miles east and 1 mile north of Glasford. Three-fourths of the reservoir site is in timber and the remainder under cultivation. Two roads cross fingers of the reservoir site but appear to be above high water. An oil company gas pipe line crosses the western finger of the reservoir area. The stream bed consists of sand, silt, and pebbles lying on a vein of coal which appears to be about 5 feet thick. The floodplain consists of silt and sand and gravel lying on the coal bed. The valley walls have moderately steep slopes. The upper part consists of glacial till overlain by loess up to 20 feet thick. The lower parts of the valley wall consist of formations of Pennsylvanian age. The coal bed in the bottom of the valley has been mined in the vicinity of the dam site and also upstream, creating possible avenues of excessive leakage. Material suitable for the construction of an earth dam is available. The site could be considered feasible, subject to verification

by an adequate program of test borings and materials testing.

Site 20. A potential reservoir site exists on the East Branch Copperas Creek 3.5 miles west and 0.75 mile north of Glasford. Gravel roads cross the site in nine locations. A two-lane blacktop road crosses the fingers of the lake, but is probably above high waters. Six residences would have to be acquired and access provided for several more. The floodplain is half pasture and half row crops. The valley walls are generally wooded. The channel of the combined streams, Wildcat Creek and the East Branch Copperas Creek, is about 85 feet wide and 10 to 13 feet deep. The stream bed and floodplain consist of sand, silt, gravel, and stone chips up to 2 inches long in the lower strata. The valley walls have steep slopes and the upper 20 feet consists of glacial drift mantled with 2 to 4 feet of loessial silt. The lower part of the valley walls consists of formations of Pennsylvanian age. A coal bed about 35 feet above the floodplain has been extensively mined, and could contain avenues of escape for water from the reservoir. Material suitable for the construction of an earth dam is available. The site is probably feasible, subject to verification by an adequate program of test borings and the outcome of the evaluation of seepage from the reservoir. This should make a large many-fingered reservoir developed at a moderately high project cost.

PIATT COUNTY

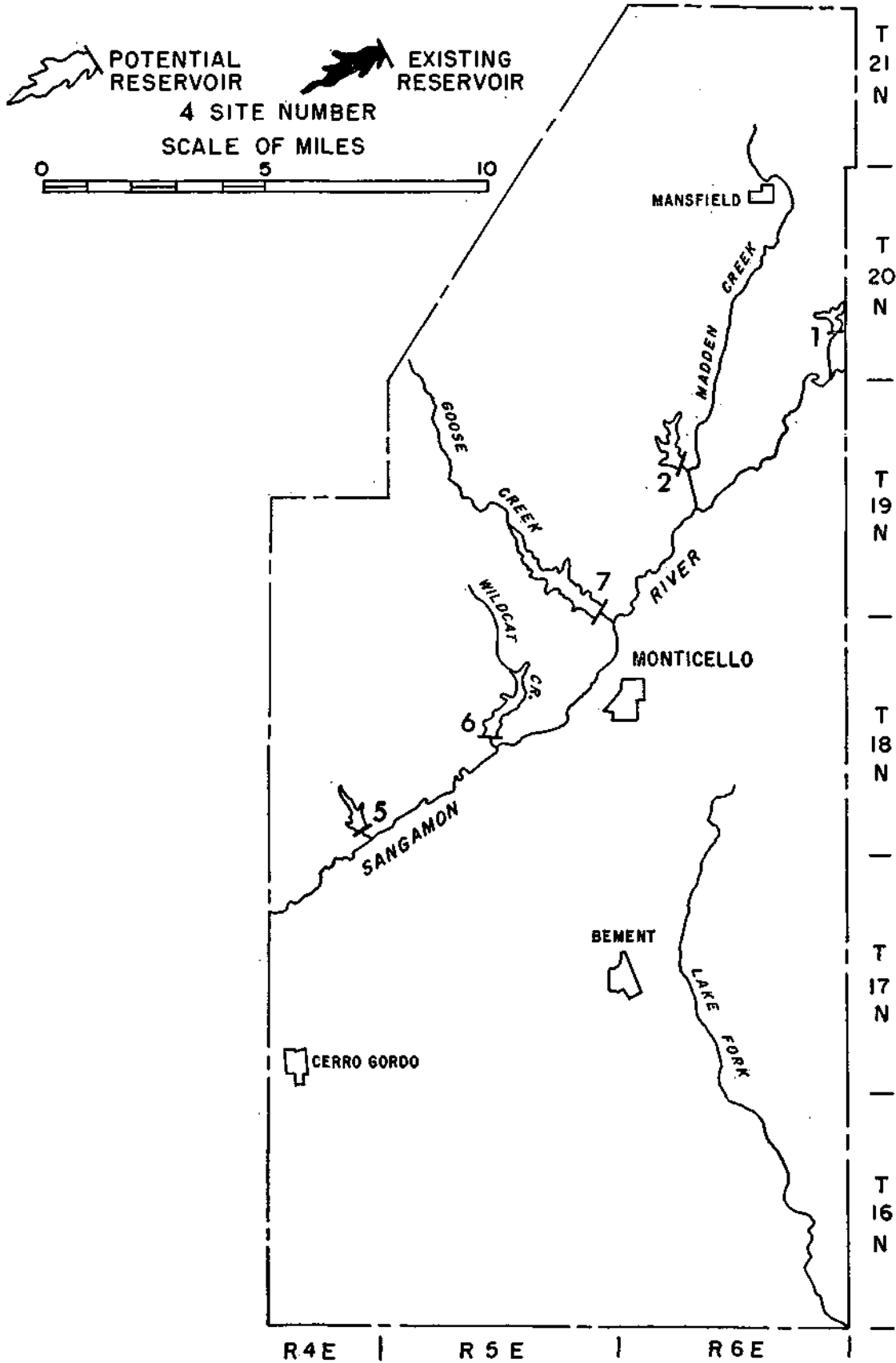
The bedrock surface in Piatt County consists entirely of Pennsylvanian age strata. Major features of this hidden bedrock surface are the Mahomet and Pesotum bedrock valleys that cross the county from east to west and join about 6 miles west of Monticello. The Pennsylvanian formation consists of relatively thin layers of shale, limestone, sandstone, and coal seams. The bedrock

surface is covered by at least 200 feet of glacial drift which was deposited by the Kansan, Illinoian, and Wisconsinan glaciers. The major topographic features are the Blue Ridge moraine in the northeastern corner of the county and the Cerro Gordo moraine extending in a southwest-northeast direction through the central part of the county. Till, an unsorted mixture of particles

Potential Reservoirs in Piatt County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Trib. Sangamon River Cr. SE ¼ 25-20N-6E (Mahomet Quad)	690	70	600	200	4.2	3.8	25	550	76	4	1.97	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.2
2	Trib. Madden Creek NE ¼ NW ¼ 17-19N-6E (Monticello Quad)	690	326	3,800	1,200	4.3	0.6	35	1,300	255	9	1.89	1.5	1.5	1.4	1.2	1.6	1.2	0.8	0.7
5	Trib. Sangamon River SE ¼ NW ¼ 36-18N-4E (Bement Quad)	710	90	900	300	2.3	1.3	30	600	101	4	1.01	0.9	0.7	0.5	0.4	0.5	0.4	0.2	0.2
6	Wildcat Creek NW ¼ NE ¼ 21-18N-5E (Monticello Quad)	660	230	2,300	700	9.0	1.9	30	800	143	6	3.96	2.7	2.0	1.4	1.4	1.5	1.0	0.8	0.7
7	Goose Creek SW ¼ SE ¼ 36-19N-5E (Monticello Quad)	670	780	7,800	2,500	60.0	4.2	30	2,000	365	12	26.4	10.7	8.0	6.3	6.0	6.5	4.6	3.5	3.5

PIATT COUNTY



from clay to boulder size, forms the basis of most drift.

The Sangamon River drains the northern two-thirds of the county, and the southern portion drains to the Kaskaskia River.

Except for the Sangamon River and its immediate tributaries, the streams of Piatt County are too shallow to provide reservoir sites. The results of five feasibility studies follow.

Site 1. A small lake could be developed on a tributary of the Sangamon River about 3 miles southwest of Mahomet. One township road could be raised and another relocated over or downstream from the structure. Cover within the lake area consists of scattered timber. The watershed is gently sloping and under clean tilled cultivation. The abutments are sandy till, and could furnish material for the earth fill. Alluvial material in the floodplain consists primarily of sand to an unknown depth. The site is classified as probably feasible geologically, subject to verification by an adequate program of test borings to determine the permeability of the abutment material and the extent of permeable sand deposits in the floodplain. This site should result in a moderate cost project.

Site 2. An excellent potential reservoir site exists on a tributary of Madden Creek about 6 miles north and 1 mile east of Monticello. One frame farmstead should be acquired, and the only road crossing the lake area could be abandoned. Illinois Route 10 passes within 0.5 mile of the dam. Land acquisition would probably be the highest cost factor since intensive row crop development extends to the banks of the stream. The watershed is gently sloping and under clean tilled cultivation. The abutments are composed of clayey sands and tills and, along with materials in the floodplain, have a very irregular distribution. Clay tills seem to occur on the nearby uplands in sufficient quantity for an earth dam. Borings would be required to determine the nature of materials underlying the abutments and the possibility of floodplain leakage through outwash deposits.

Site 5. A small reservoir site exists on a tributary of the Sangamon River about 2 miles south and 1 mile east of Cisco. Cover in the lake area is mostly pasture. One township road across the site could be abandoned. Although the abutments appear to be till, such deposits in this area are known to contain discontinuous sands and gravels. This site is probably feasible geologically. An adequate program of test borings would be required to investigate the existence of a serious leakage problem as well as the quantity and nature of fill materials available. This site should result in a low cost project.

Site 6. A good potential reservoir site exists on Wildcat Creek about 3 miles west and 1 mile south of Monticello. The watershed consists of gently rolling uplands in front of the Cerro Gordo moraine, and a moderately steep walled valley that increases in depth and steepness downstream. The upstream half of the lake is under cultivation, and there is pasture on the bottoms and timber on the valley walls. Illinois Route 47 and the Illinois Central Railroad cross the upper reaches of this site but are probably above the development. A one-lane oiled road could be abandoned and another relocated or abandoned. No residences would be inundated but one would need access if not acquired. The dam would be within flood stage of the proposed Lake Oakley. Geologic conditions at this site appear favorable although future borings would be required to determine foundation conditions and to locate permeable outwash deposits. The dam site is located over a bedrock valley and the thickness of glacial material may exceed 250 feet. The abutments appear to be composed of a gravelly silty till with some cobbles. Suitable material for construction of an earth dam is readily available.

Site 7. A good potential reservoir site exists on Goose Creek 2 miles north of Monticello. A two-lane blacktop road joining Monticello and DeLand parallels the southern shore of the proposed lake providing excellent access. One township road could be relocated over the structure, and one of the roads near the center of the site should be

Existing Reservoirs in Piatt County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area {acres}	Storage capacity			Remarks and data source
			{sq mi}	{acres}	{ft}	{ft}		{ac-ft}	{mg}	{in}	
Buck Pond	30-19N-6E (Monticello Quad)	Piatt Co. Forest Pres.	0.94	600.0	6	3	8.6	9.0	2.9		Aerial photo & Ill. Div. of Fisheries
4-H Memorial Lake	20-18N-5E (Bement Quad)	U. of I.	0.62	400.0	26	18	14.8	118.0	38.4		Ill. Div. of Fisheries
Miller Lake	5-18N-6E (Monticello Quad)	Robert Miller	0.06	40.0	12	8	7.0	42.0	13.7		Aerial photos

abandoned and the other raised or relocated. Half of the lake area is in clean tilled cultivation and the remainder in brush and timber. The watershed is very gently rolling, artificially drained, and under clean tilled cultivation. DeLand lies within the main watercourse and could be a source of pollution. The abutments and valley walls consist of a grayish brown clay till. The till

should be good fill material and seems to occur in sufficient quantity. The dam site is in an area where outwash deposits of silt, sand, and gravel are widespread and underlie the area at considerable depths. Although the site is considered probably feasible geologically, permeable deposits in the floodplain would have to be investigated by test borings.

PIKE COUNTY

Pike County is located between the Mississippi and Illinois Rivers and was in the southern part of the Illinoian glaciation. The western and southwestern part of the county is essentially driftless, and the topography is primarily a result of erosion. The glacial period did much towards producing the present topography in the northern and northeastern part of the county. Morainal ridges, in some places almost 900 feet above sea level, indicate three glacial advances. The southern boundary of glaciation extends from New Canton southeast to the vicinity of Pearl. The drift ridges north of this boundary are not very distinct because erosion has almost destroyed them, but they represent the terminal moraines of the upper Illinoian glaciation. The glacial drift as well as the residual material on the unglaciated area was covered with from 10 to 50 feet or more of loess, a wind-blown silt, but erosion has exposed the drift in some of the upland.

Three-fourths of Pike County lies within the Mississippi River Basin while one-fourth of the upland is in the Illinois River Basin. The divide between the two basins is about 3 to 4 miles west of the Illinois River as far north as Milton where it turns northwest passing just west of Maysville. Blue Creek and Middle Fork drain into the Illinois River. Bay, Sixmile, Dutch, Kiser, and Hadley Creeks flow into the Mississippi River. There is approximately 160 square miles of bottomland primarily along the Mississippi River.

The bedrock surface is exposed in most of the valleys in Pike County and is predominantly Mississippian limestone. Pennsylvanian formations exist in the north-central portion of the county, and probably contain shale with some sandstone and limestone.

Reservoir sites are numerous in the uplands of Pike County. The results of 16 feasibility studies follow.

Site 1. A potential reservoir site exists on Middle Fork McKee Creek 4 miles north and 0.25 mile east of New Salem. The reservoir area is in grass and mixed hardwoods. A new access road would have to be provided to several residences. The stream bed consists of silt and sand with much coarse gravel. The channel is 11 feet deep in a floodplain consisting of silty clay alluvium

with coarse gravel near the bottom. The alluvial plain merges with gently sloping valley walls that consist of till overlain by loessial silt. No bedrock is exposed, but a very hard white clay outcrops on the left abutment at the creek bed level. Material suitable for an earth dam is available. The dam site is probably feasible, subject to further test borings. This should make a good reservoir at a normal project cost.

Site 2. An extremely large reservoir could be created by constructing an earth dam across the South Fork McKee Creek, immediately below the confluence with Middle Fork, 3.5 miles east and 1 mile south of Perry. The reservoir area is under clean tilled cultivation. Light mixed hardwoods are confined to the valley walls and there is brush along the banks of the streams. Illinois Route 104 and a north-south two-lane concrete highway from Perry would have to be relocated or raised. There are other north-south highways which might be abandoned. The county is currently constructing a new east-west two-lane gravel highway which goes to Perry. The South Fork McKee Creek is crossed by a two-lane concrete highway with a reinforced concrete bridge that would be relocated or raised. The city of Perry has three water wells and a pump station on the lower reaches of South Fork McKee Creek. The river bottom consists of sand, and banks are of clay mud. The dam site has a limestone bedrock outcrop in the right abutment looking downstream. The left abutment is gently sloping and wooded. This site has doubtful feasibility. A great deal of exploratory work would be necessary to ascertain the foundation conditions and other geologic conditions that would affect construction of an earth dam. This would make a large reservoir, but land acquisition, easements, rights of way, relocations, and construction costs would make it a high cost project.

Site 3. A potential reservoir site exists on a tributary of the South Fork McKee Creek 1.25 miles east and 1.5 miles north of Griggsville. The reservoir area consists of timber and pasture. Two gravel roads crossing the site could be abandoned, and a power line crossing the site would need relocation. The floodplain consists

of gravelly and sandy alluvium about 6 feet thick. The valley walls consist of clayey silt. No bedrock or till is exposed. Borrow material is readily available. This is a feasible site and should make a good reservoir at a moderate project cost.

Site 4. A many-fingered reservoir could be created by constructing an earth dam across Hatch Hollow, a tributary of South Fork McKee Creek, 2.25 miles north and 0.5 mile west of Griggsville. This is an excellent site topographically. The lake bed consists of pasture and there is mixed timber on the valley walls. No roads nor residences would require relocation. The stream channel contains limestone rubble. At least 5 or 6 feet of irregularly bedded limestone is exposed just above the stream level. The floodplain is about 8 or 9 feet above stream level. There is at least 25 feet of silty reddish clay, somewhat gullied, high in the valley walls. Borrow material is readily available along low slopes of the valley. Al-

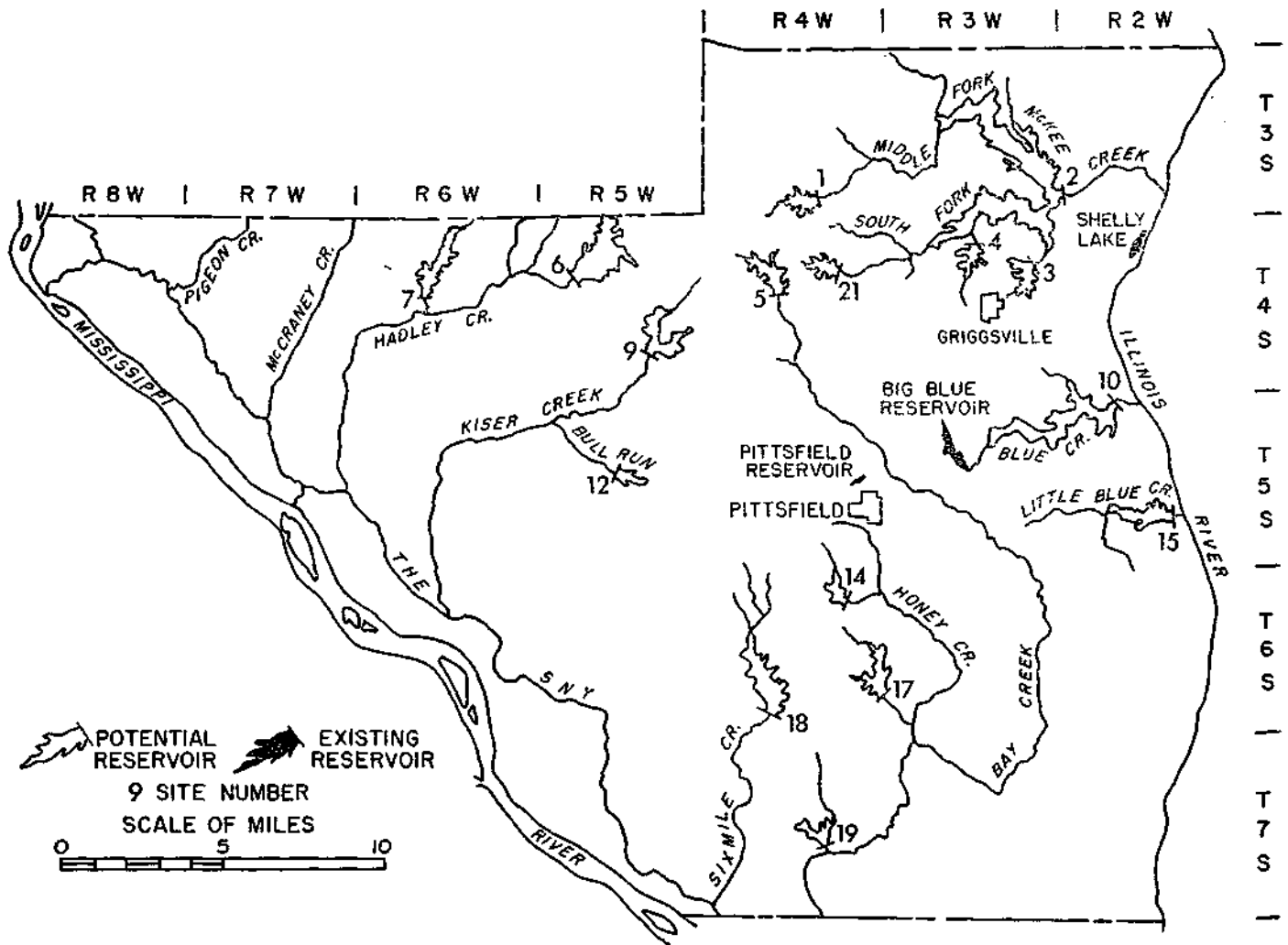
though there is some possibility of leakage through the limestone, the site is probably feasible subject to a program of testing. This should make an excellent reservoir at a moderate project cost.

Site 5. A potential dam site exists on Bay Creek 2 miles east and 0.75 mile south of Baylis, and 0.75 mile north and 1 mile west of New Salem. The reservoir area is partly swamp. The creek is fringed with timber, and the remainder of the reservoir area is in grass and pasture. The uplands are under cultivation. Roads in the reservoir area are not passable and appear to be abandoned or used for access to the bottomland pasture. A two-lane gravel road and bridge could be relocated over the top of the structure. The stream bed is in alluvium at least 20 feet deep and contains little gravel. Reddish brown soil occurs in the floodplain to an elevation of 35 to 40 feet above the stream bed. Valley slopes are gentle and consist of till. Gravel pits containing LaFay-

Potential Reservoirs in Pike County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Middle Fk. McKee Creek NE ¼ NE ¼ 34-35-4W (Mt. Sterling Quad)	700	175	3,208	1,000	2.3	0.3	55	800	302	5	0.87	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
2	S. Fk. McKee Creek NW ¼ NW ¼ 31-35-2W (Mercedosia Quad)	520	4,950	132,000	43,000	92.0	0.3	80	950	702	73	34.69	31.3	31.3	31.3	31.3	30.4	30.4	25.2	21.6
3	Trib. S. Fk. McKee Creek W ½ (Griggsville Quad)	590	109	1,126	400	2.3	0.8	31	500	87	9	0.87	0.8	0.7	0.5	0.4	0.6	0.4	0.3	0.2
4	Trib. S. Fk. McKee Creek SW ¼ SW ¼ 3-4S-3W (Griggsville Quad)	560	240	4,640	1,500	6.1	0.6	58	850	339	7	2.30	2.1	2.1	1.8	1.6	2.1	1.4	1.1	1.0
5	Bay Creek SE ¼ NW ¼ 16-4S-5W (Pittsfield Quad)	760	305	3,254	1,100	4.2	0.5	32	650	119	7	1.58	1.4	1.4	1.2	1.0	1.3	0.8	0.6	0.6
6	Hadley Creek NE ¼ NW ¼ 17-4S-5W (Barry Quad)	660	915	19,215	6,300	21.0	0.8	63	1,200	627	14	13.68	13.3	11.8	9.9	8.7	10.3	7.5	5.0	5.0
7	Beebe Creek NW ¼ SW ¼ 16-4S-6W (Barry Quad)	580	395	7,238	2,400	14.0	1.4	55	1,300	572	10	9.12	7.5	5.8	4.3	4.0	4.9	3.6	2.1	2.0
9	Kiser Creek Line 26-27-4S-5W (Pittsfield Quad)	700	510	11,560	3,800	6.8	0.4	68	1,400	841	12	4.43	3.7	3.7	3.7	3.7	4.1	3.6	3.0	2.4
10	Blue Creek NW ¼ NW ¼ 4-5S-2W (Griggsville Quad)	500	1,410	28,200	9,200	39.1	0.6	60	500	219	25	14.75	13.8	13.8	11.2	10.0	13.6	9.0	7.1	6.9
12	Bull Run SE ¼ SE ¼ 16-5S-5W (Pittsfield Quad)	700	64	681	200	1.8	1.9	32	450	83	3	1.17	0.8	0.6	0.4	0.4	0.5	0.3	0.2	0.1
14	Trib. Honey Creek SW ¼ SE ¼ 2-6S-4W (Pittsfield Quad)	700	128	1,962	600	2.9	0.6	46	950	296	4	1.01	0.8	0.8	0.8	0.6	0.9	0.6	0.4	0.3
15	Little Blue Creek NW ¼ NW ¼ 26-5S-2W (Griggsville Quad)	500	525	11,372	3,700	17.4	0.6	65	1,350	684	12	6.56	6.2	6.2	4.8	4.3	6.2	3.7	3.0	2.8
17	Buckeye Creek NW ¼ NW ¼ 30-6S-3W (Pittsfield Quad)	600	525	12,250	4,000	5.8	0.2	70	1,450	898	11	2.02	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3
18	Sixmile Creek NW ¼ SW ¼ 28-6S-4W (Pittsfield Quad)	600	765	15,300	5,000	22.4	0.6	60	1,600	833	15	7.81	7.0	7.0	6.2	4.8	7.2	5.4	3.5	2.9
19	Bay Creek SE ¼ NE ¼ 22-7S-4W (Nebo Quad)	500	250	3,165	1,000	5.2	0.6	38	800	187	7	1.81	1.5	1.5	1.3	1.0	1.6	1.0	0.7	0.6
21	South Fk. McKee Creek SE ¼ NW ¼ 11-4S-4W (Pittsfield Quad)	700	166	2,877	900	3.0	0.4	52	900	333	6	1.13	1.0	1.0	0.9	0.8	1.0	0.9	0.7	0.6

PIKE COUNTY



ette gravel occur in the west uplands, a few hundred feet north of the dam site, but there is no surface evidence that similar gravels occur at the dam site. Good borrow material is available. This site is probably feasible, subject to verification by an adequate program of test borings. This site should result in a good moderate cost project.

Site 6. A large reservoir and dam site exists on Hadley Creek 2.25 miles north and 2 miles east of Barry. Hadley Creek is a tributary of The Snodgrass which empties into the Mississippi River. The reservoir area is under cultivation where the channel has not been active. Levees, channel clean-out, and straightening are in evidence. The valley walls and coves are covered with mixed hardwoods. A north-south two-lane gravel highway would have to be raised and a bridge replaced or abandoned. Farm residences have been abandoned on a one-lane east-west highway which does not cross the reservoir area. The stream bed consists of sand, gravel, mud, and clay.

The floodplain is broad and flat and lies a few feet above bedrock. Rock fragments on the slopes indicate limestone is not far beneath the surface. There is an alluvial fan of coarse material on the east bank that is truncated in part by the main channel. Heavy bed load and two to three floods per year have caused the deposit of these materials. The site is probably feasible, subject to verification by a program of test borings. This site should develop a large reservoir at a moderately high project cost.

Site 7. A potential reservoir site exists on Beebe Creek, a tributary of Hadley Creek, located 3 miles west and 1.5 miles north of Barry, and 2.5 miles east and 1 mile north of Kinderhook. At least three-fourths of the reservoir area is open land and under cultivation. Mixed timber is confined to the valley walls with brush along the stream channel. The acquisition of four farm residences would eliminate road relocations. Beebe Creek has a wide channel with a bit of coarse gravel, sand, and rub-

ble of chert and limestone. No bedrock crops out at the dam site. A half mile upstream from the dam site there is a massive display of limestone. The alluvium is 8 to 9 feet thick and consists of sand, silt, and clay. The valley slopes and walls consist of red clayey silt. Exposure of bedrock upstream suggests that limestone is not far below the surface. The dam site appears feasible, subject to verification by test borings. This should make a good reservoir at a moderately high project cost.

Site 9. A large two-fingered reservoir could be created on Kiser Creek, a tributary of The Sny, 2.75 miles south and 2.5 miles west of Baylis. The reservoir area is in mixed cultivation, pasture, and woods. A good stand of mixed hardwoods exists on the western valley wall. An east-west two-lane blacktop highway crosses both fingers

of the reservoir area and would have to be abandoned. Most of the farm residences in the reservoir area have been abandoned, but the land is still being farmed. Kiser Creek has a gravel and sand bottom and heavily vegetated banks. Bedrock exposures indicate that irregularly bedded cherty limestone is probably close beneath the surface, and probably underlies the abutments. Suitable borrow material may be difficult to obtain. The dam site is possibly feasible, subject to foundation investigations and the availability of suitable borrow material. This site should make a good reservoir at a moderately high project cost.

Site 10. A large reservoir could be created on Blue Creek by construction of a small dam 3 miles north and 1.75 miles east of Detroit. About three-fourths of the

Existing Reservoirs in Pike County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Pittsfield Res.	13-14-5S-4W (Pittsfield Quad)	Pittsfield	1.84	1,178			39.6	233	76.0	2.36	1947 sed. survey
Sleight Pond	3-4S-3W (Griggsville Quad)	Sleight Estate	0.06	40			4.0	19	6.2	5.92	
Burr Oak Lake	4-5S-7W (Barry Quad)	Gordon Simons					10.0	35	11.4		Overflow from The Sny
Trester Lake	8-5S-7W (Barry Quad)	R. G. Gardner					40.0	125	40.7		River seepage
Chandler Pond	22-6S-2W (Griggsville Quad)	Daniel Beck	0.23	150			8.0	20	6.5	1.63	
Swan Lake	16-21-7S-5W (Nebo Quad)	Fed. Gov't					83	400	130.3		Seepage
Towhead Lake	14-7S-5W (Nebo Quad)	Truman Craigmile					67	450	146.6		Seepage
Barlow Lake	14-23-3S-2W (Meredosia Quad)	Barlow Lake Gun Cb.					45.0	130	42.4		Filled by river seepage
Collins Pond	6-6S-6W (Barry Quad)	Albert Bellomy Mable Crossland					42.0	100	32.6		River seepage
Clear Lake	6-6S-6W (Barry Quad)	Loren Moody					8.0	25	8.1		River seepage
Pin Oak Lake	9-5S-7W (Barry Quad)	R. G. Gardner					20.0	60	19.5		River seepage
Spring Lake	3-9-10-7S-5W (Nebo Quad)	Richard Coultas					64.0	450	147		Overflow & seepage
Barton Pond	22-7S-5W (Nebo Quad)	Artman Jordan					15.0	50	16.3		Overflow & seepage
Halfmoon Lake	22-7S-5W (Nebo Quad)	Artman Jordan					68.0	250	81.4		Overflow & seepage
Snyder Pond	24-7S-5W (Nebo Quad)	A. B. Jordan					33.0	100	32.6		Overflow & seepage
Ham & Mud Slough	23-26-7S-5W (Nebo Quad)	K. D. & A. B. Jordan					128.0	350	114.0		Overflow & seepage
Big Blue Res. #1	16-5S-3W (Griggsville Quad)	Pittsfield	11.15	7,136	54	40	241.0	3,460	1,127	0.41	Orig. plans New City Lake
Big Blue Res. #2	3-5S-3W (Griggsville Quad)	Pittsfield	4.2	2,690	31	11	27.7	168	54.7	0.75	Blue Creek watershed project
McCoe Lake	9-4S-2W (Griggsville Quad)						40.0	150	48.9		
Rising Springs	6-6S-4W (Pittsfield Quad)	Rising Springs Orchard	0.19	120	30	25	10.0	200	65.2	19.72	Supplemental irrigation
Halfmoon Slough	31-5S-6W (Barry Quad)	Hugh McMary					7.0	21	6.8		River seepage
Worthington Pond	20-4S-5W (Barry Quad)	Merrison Worthington	0.13	85	20	12	4.5	40	13.0	5.77	Hadley Creek watershed project
Cocklebur Lake	5-8-7S-5W (Nebo Quad)	Wm. Herche Darius Hammitt					60.0	200	65.2		Overflow of The Sny
Stolte Slough	4-5-7S-5W (Hannibal Quad)	Albert Stolte					37.0	100	32.6		
Horton-Dutch Res.	11-12-13-14-6S-6W (Barry Quad)	Sny Island Drainage Dist.	18.7	12,000			30-600				Flood retarding res.; U.S. Army Engineers
Pigeon Creek Res.	7-8-17-18-4S-7W (Barry Quad)	Sny Island Drainage Dist.	12.5	8,000			30-600				Flood retarding res.; U.S. Army Engineers

reservoir area is under cultivation and the remainder in mixed hardwoods. Six farm residences would have to be acquired to develop this site. A major north-south gravel road crossing the site could be relocated 2.5 miles upstream, and two east-west roads could be abandoned. The left abutment looking downstream to the dam site is a solid limestone wall about 30 feet high. The channel is 50 feet wide, with a narrow floodplain. The stream bed contains much rubble. Bedrock is near the surface in the stream bed, banks, and valley walls. Some prominent jointing may be present. The site is probably feasible, subject to verification of the solubility of the bedrock limestone and the availability of suitable borrow material. This should make a good large reservoir at a moderately high project cost.

Site 12. A small reservoir could be created on Bull Run, a tributary of Kiser Creek, by constructing a dam 1 mile east and 0.25 mile north of El Dara. The watershed is under clean tilled cultivation. The reservoir area is in brush, pasture, and woods. No relocations nor residences would be involved. Shallow water would be a problem in the upper reaches. The stream bed is about 30 feet wide and contains material ranging in size from silt to boulders derived in part from cherty limestone, glacial deposits, and gravels. The floodplain is about 300 feet wide and 5 feet above the stream bed and consists of silt, sand, and gravel. Burlington limestone underlies the lower part of the south valley wall which has a slope of about 30 degrees. About 30 feet above the stream bed the slope becomes more gentle and consists of tan loessial silt. The north valley wall is gently sloping, suggesting that bedrock may be at a considerable depth. Lack of flow in the stream after a moderate rain suggests the alluvium may be relatively permeable and there may be solution channels in the underlying and adjacent limestone. The dam site may be considered questionable until proven feasible by an adequate program of test borings. This site should result in a small reservoir at a moderate project cost.

Site 14. A potential reservoir site exists on a tributary of Honey Creek 3 miles south and 1.25 miles west of Pittsfield. Most of the eastern portion of the reservoir area is in pasture. The west valley wall is covered with mixed hardwoods. A gravel road crossing the upper end of the reservoir could be raised. The stream bed is coarse rubble. The floodplain is about 6 feet above the stream bed and consists of silt over rubble and bedrock. The west valley wall of this site is very steep. Bedrock in the valley wall is limestone with beds generally 4 to 6 inches thick and containing a few cavities. The bedrock is overlain by loessial silt probably with some coarse limestone rubble at the base. This site appears feasible, subject to verification by test borings. This should make a fairly good reservoir at a moderately low project cost.

Site 15. Little Blue Creek, a direct tributary of the Illinois River, has a potential reservoir site 2 miles east and 2.75 miles north of Milton. Three farm residences and associated outbuildings would have to be acquired. A new gravel road with a steel frame bridge crosses the reservoir area in a north-south direction. About 75 percent of the reservoir area is under intensive cultivation. The stream bed, banks, and valley walls are underlain by crinoidal limestone in beds 3 to 4 inches thick. The floodplain is relatively wide and is generally 4 to 7 feet above the stream bed and bedrock. The abutment areas are covered by very silty colluvium. Suitable borrow materials are present. The site is probably feasible, subject to a complete program of test borings. This should make a good reservoir at a moderately high project cost.

Site 17. Buckeye Creek, a tributary of Honey Creek, has a potential reservoir site 6 miles south and 0.5 mile east of Pittsfield. The reservoir area is under clean tilled cultivation. The western valley wall is covered with mixed hardwoods. The eastern valley wall is gently sloping and in pasture. Several farm residences have been abandoned but at least two residences would have to be acquired. A two-lane gravel highway crossing the upper third of the reservoir area could be abandoned. The stream bed consists of silt, sand, gravel, and rubble, probably not more than a few feet above the Burlington limestone. The floodplain and low stream terraces consist of silt containing chert fragments. Burlington limestone crops out in valley walls at a high level and is overlain by loessial silt, which is suitable for construction of an earth dam. This site should make a moderate cost project.

Site 18. A potential reservoir site is located on Sixmile Creek, a tributary of The Sny, 4.5 miles northeast of Pleasant Hill. The bottomland is partially cultivated in the lower reaches but several well developed bottomland farms exist in the upper reaches. Several farm residences would have to be acquired, and two east-west highways would have to be abandoned. The north-south road along the west valley wall is not passable. The east valley wall is gently sloping and wooded above 600-foot mean sea level. The stream bed consists of gravel and sand in which channel scars at least 6 feet deep have been developed. The floodplain consists largely of gravel and sand and lies about 10 feet above the creek bed. The valley walls consist of irregularly bedded crinoidal limestone. The lower portions are covered with as much as 18 feet of colluvium consisting of fully sorted and unconsolidated rock fragments and other earth material. This site is probably feasible but must be verified by test borings. This should make a good large reservoir at a moderately high project cost.

Site 19. A small tributary of Bay Creek has a potential reservoir site located 1.75 miles east and 0.5 mile south of Pleasant Hill. Most of the reservoir area is in pasture or some clean tilled cultivation. There are three farm residences and outbuildings in the reservoir area. An east-west two-lane gravel highway crosses a portion of the reservoir area and would have to be relocated or abandoned. The stream channel has cut about 10 feet into the alluvium which consists primarily of silt with some irregular beds of sand and gravel over an irregular surface of limestone with only a few feet of relief. Bock and limestone, several feet thick, are exposed in the south bank and in the bottom of the stream. It is uncertain whether or not they are fractured. Bedrock may form the cores of the valley walls, but only loessial silt was observed on the slopes and uplands. The silt is suitable material for the construction of an earth dam. This dam

site appears feasible, subject to test borings. This should make a good reservoir at a moderately high project cost.

Site 21. An excellent wooded reservoir site exists on South Pork McKee Creek 1.75 miles north and 0.75 mile east of New Salem. The stream bed contains sand, some gravel, and some boulder size slabs of limestone. No bedrock was in evidence. The alluvium, composed mostly of silt, is estimated to be 22 feet thick. The south bank consists of more than 45 feet of brownish till becoming quite red higher on the top. There are some pebbly zones near the top of the red till. The till on the north bank is tan loessial material at least 12 feet thick. Borrow material is readily available. The site is probably feasible, subject to verification by test borings. This should make a very good reservoir at a moderately low project cost.

SANGAMON COUNTY

Pennsylvanian bedrock exists below the glacial drift throughout Sangamon County, and is composed of shale with beds of limestone, sandstone, and coal. The Athens and Middletown bedrock valleys are major features of the bedrock surface.

The glacial drift is primarily Illinoian possibly underlain by Kansan. The drift contains clay, and continuous beds of sand and gravel are not encountered above a depth of 70 feet. The Wisconsinan glacier had much to do with the present topography. Wisconsinan flood waters caused the Sangamon River to cut a valley 50 to 100 feet deep and laid down deep alluvial deposits. Loess, a wind-blown silt, later covered the county to an average depth of 40 feet, and is the parent material for all upland soils in Sangamon County.

The county lies entirely within the Sangamon River drainage basin and is well drained by its many tributaries.

The topographic and geologic conditions in Sangamon County are generally favorable for reservoir development, and sites are abundant. The results of 17 feasibility studies follow.

Site 1. This dam site lies on the upper reaches of Cantrall Creek, a major tributary of the Sangamon River, about 0.25 mile east of Cantrall. The gently rolling uplands with relief of 10 to 20 feet are typical of the Illinoian drift plain mantled with thick layers of loess. The uplands slope uniformly to the creek banks resulting in a V-shaped valley with moderately steep walls at the dam site. A two-lane oiled road and two gravel access roads would be inundated by the develop-

ment. A small lake and much of the land associated with a private estate would be inundated. Cover in the site is about half pasture and half timber. Much of the shoreline would also be timbered, providing good recreational areas. Logs of previous borings indicate that glacial materials consisting primarily of till are about 50 feet deep. This is substantiated by siltstone deposits low on the left abutment. No serious geologic problems are anticipated and sufficient till for borrow should be readily available. This site should develop at a moderately high project cost.

Site 2. A potential reservoir site exists on a tributary of Wolf Creek 4 miles north and 1 mile east of Riverton. The uplands consist of the gently rolling, thick loess-covered Jacksonville drift plain. The valley is V-shaped with slopes increasing from very gentle at the headwaters to moderately steep at the dam site. Access to the general area is provided by U. S. Route 54 only 2 miles to the south, and U. S. Route 66 about 4 miles to the north. Two oiled township roads crossing the site would be inundated. No residences would be inundated, but six or seven farm units fairly close to the shoreline might have to be acquired. Timber in the lake area is restricted to the creek banks, and land use is divided between row crops and pasture. Logs of previous borings and a surficial examination indicates that geologic conditions are favorable. The bedrock is overlain by about 100 feet of glacial till overlain by up to 20 feet of loess. The till would provide a good foundation and should be readily available for borrow. This site should develop at a moderately high project cost.

Site 3. A small reservoir could be developed on a tributary of Wolf Creek with the dam located about 1.5 miles northwest of Spaulding. The gently rolling uplands slope uniformly to the creek banks forming a moderately steep walled V-shaped valley. Cover in the lake site consists primarily of pasture and a few timbered areas. Although no residences would be inundated, one residence near the eastern abutment might have to be acquired. A two-lane blacktop road crossing the upper end of the site could be raised. Logs of previous borings and a surficial examination indicate that geologic conditions are favorable. Bedrock is covered by 50 to 100 feet of drift, primarily till, overlain by 8 to 10 feet of loess. The underlying till should form an excellent foundation, and suitable borrow is available from the nearby weathered loess and till. This appears to be a feasible site and should develop at a moderate project cost.

Site 4. This site lies in a narrow V-shaped valley within a mile of Pleasant Plains on a tributary of Richland Creek. The stream is entrenched in very gently rolling uplands which are covered with as much as 25 feet of loess. A one-lane oiled road could be abandoned and a two-lane blacktop could be raised. No residences would be inundated by the development, but two or three would be close to lake level and might have to be acquired. Cover in the site area consists of half cultivated land and half pasture with considerable heavy willow growth along the creek banks. Logs of previous borings and a surficial examination indicate that the deep loess deposits are underlain by clayey till with a very irregular surface. The nature of the till-loess surface should be investigated since it could very likely be submerged. The underlying till should provide a good foundation, and the till as well as the weathered loess would provide a good source of borrow for the earth fill. This site appears feasible and should develop at a moderate project cost.

Site 5. A rather narrow reservoir could be developed about 2.5 miles south of Salisbury on a tributary of Prairie Creek. The valley sides slope gently from the creek banks to the very gently rolling uplands. A one-lane oiled road would be inundated, but no residences appear to be involved. Excellent access is provided by Illinois Route 97 on the east and Illinois Route 125 on the southwest. Cover in the downstream half of the lake area consists of pasture with scattered timber, and the remainder is in row crops or cleared pasture. Logs of previous borings and a surficial geologic investigation indicate that loessial deposits are as much as 25 feet deep. Till probably underlies the loess and should form the foundation of the dam, but weathered loess rather than the more suitable till might have to be used in the fill. This site should develop at an extremely low project cost.

Site 6. A very desirable small lake site exists on Willow Branch, a tributary of the Sangamon River, 3 miles north and 4 miles west of Springfield. One township road across the site could be abandoned. Although the site is in a developing area, cost of land acquisition at this time probably would not be excessive. The valley walls are moderately steep and have a few timbered areas available for recreational development. Cover within the lake area is pasture with brush or brushy timber. Logs of previous borings indicate that the bedrock surface is about 60 feet below the uplands. The abutments have moderate slopes and are covered with vegetation. Examination of the right abutment, about 2000 feet downstream from the dam site, revealed 2 feet of soil over 8 feet of clayey silt over 10 feet of till over 40 feet of thin bedded siltstone and shale. The stream flows in a 4-foot notch of silt that probably overlies bedrock. Suitable borrow material may be obtained from weathered loess or clayey till. Future borings should be used in part to investigate the bedrock-till surface for possible leakage.

Site 7. A small reservoir could be developed on a tributary of the North Pork Clear Creek. The site lies in a narrow V-shaped valley 2 miles southwest of Buffalo and 2 miles southeast of Dawson. The stream drains the Illinoian loess-covered glacial topography southwest of Buffalo. Surficial soils are developed in loess, and relief of the uplands is about 10 to 20 feet. Previous borings nearby indicate the depth to bedrock to be about 80 feet and the thickness of loess approximately 24 feet. Thickness of the loess and underlying deposits were not determined. The weathered loess may be sufficiently clayey for use as borrow material for an earth dam. A one-lane oiled road across both fingers of the site could be abandoned or raised. Two farm units are close to the proposed site and at least one of these would have to be acquired for shoreline. Most of the land in the main branch is under cultivation, but the smaller branch is in pasture with scattered timber. This appears to be a feasible site that could be developed at a moderate project cost.

Site 8. A small but attractive site is available on a tributary of Griffith Creek 1.5 miles southwest of Mechanicsburg. One township road could probably be abandoned and another relocated for 0.5 mile. One farm unit would have to be acquired for shoreline. Two oil wells are located in the upper reaches of the site and more may exist in the immediate area. Sealing of these wells would be important to the prevention of pollution. Cover in the lake area consists of pasture with scattered timber in the downstream half and row crops in the remainder. Geologic conditions at the site appear favorable for construction of an earth dam. Logs of previous borings indicate that the depth to bedrock is 100 to

150 feet and that much of the intervening material is glacial till. As with other sites in this area deep loess deposits obscure the till even on the dam abutments. The weathered loess is available nearby and may be the most suitable material for construction of a dam. This site appears feasible and could be developed at a moderate project cost.

Site 9. A potential reservoir exists on Spring Creek with the dam site located 3.5 miles west and 0.75 mile north of Springfield. Although this would be a very expensive development because of land and residence acquisitions, it is being included in this inventory since it would be a major development for the area. Interest has been shown in this site previously, and in 1945 test borings were made by the U. S. Corps of Engineers. A typical cross section shows a bedrock formation of shales

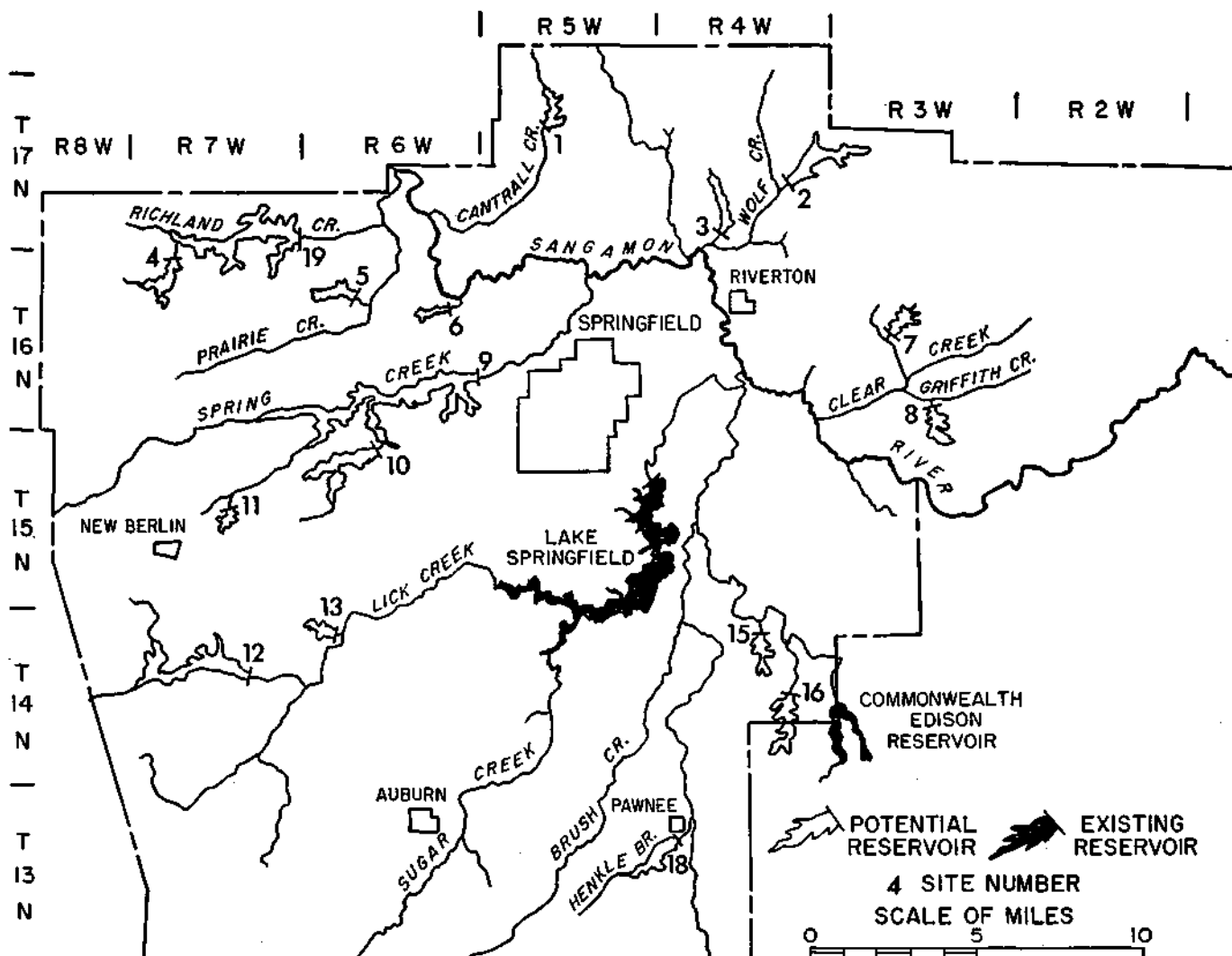
and siltstone overlain by 10 to 20 feet of till overlain by up to 50 feet of alluvium. This site can generally be classified as probably feasible, subject to a complete program of test borings and material testing. Abandoned coal mines beneath the reservoir and dam sites should be given particular attention. A more detailed study would be required to determine the total number of residences involved in the development. Only two or three residences are actually below water level, but a great many would be involved in shoreline control. Sections of a two-lane blacktop road and a two-lane oiled road, and possibly 10 other township roads, would be inundated along with a crossing of the Chicago and Northwestern Railroad.

Site 10. This site is located on Little Spring Creek, 7 miles west-southwest of Springfield, on a tributary of

Potential Reservoirs in Sangamon County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Water-shed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shore-line (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Cantrall Creek NE ¼ SW ¼ 9-17N-5W (Springfield Quad)	580	147	2,350	800	6.6	1.0	25	450	60	7	2.19	2.1	1.6	1.0	0.8	1.4	1.0	0.6	0.4
2	Trib. Wolf Creek SW ¼ SE ¼ 23-17N-4W (Springfield and Mechanicsburg Quads)	570	390	4,680	1,500	9.8	0.8	36	750	154	13	3.25	3.0	2.9	1.7	1.3	2.6	1.6	0.9	0.7
3	Trib. Wolf Creek SW ¼ NW ¼ 33-17N-4W (Springfield Quad)	550	154	1,232	400	5.8	1.7	24	700	92	5	1.92	1.4	0.9	0.6	0.4	0.6	0.4	0.2	0.1
4	Trib. Richland Creek NW ¼ NE ¼ 5-16N-7W (Tallula Quad)	590	154	1,590	500	7.0	1.6	21	700	78	6	2.32	1.9	1.3	0.8	0.6	1.0	0.6	0.3	0.2
5	Trib. Prairie Creek NE ¼ SE ¼ 8-16N-6W (Tallula Quad)	570	154	1,540	500	5.9	1.4	30	652	102	8	1.96	1.7	1.1	0.7	0.6	0.9	0.7	0.3	0.2
6	Willow Branch SE ¼ SE ¼ 11-16N-6W (Springfield Quad)	550	128	1,280	400	2.8	0.8	30	550	94	6	0.93	0.8	0.7	0.5	0.4	0.6	0.4	0.2	0.1
7	Trib. N. Fk. Clear Creek SW ¼ SW ¼ 16-16N-3W (Mechanicsburg Quad)	580	122	1,100	400	3.0	1.3	27	400	58	6	1.29	1.2	0.9	0.5	0.5	0.6	0.5	0.2	0.2
8	Trib. Griffith Creek SE ¼ NW ¼ 34-16N-3W (Mechanicsburg Quad)	580	154	1,590	518	2.7	0.8	31	700	122	9	1.16	0.9	0.9	0.6	0.5	0.9	0.6	0.4	0.3
9	Spring Creek NE ¼ NE ¼ 25-16N-6W (Springfield and Tallula Quad)	570	1,856	25,350	7,600	92.0	1.4	41	900	182	51	30.49	28.2	18.8	11.9	9.7	15.7	11.9	5.3	4.6
10	Little Spring Creek Cir. SW ¼ 4-15N-6W (Tallula Quad)	600	416	5,260	1,700	9.6	0.7	38	950	198	15	3.18	2.6	2.6	1.8	1.5	2.7	1.7	1.0	0.7
11	Trib. Spring Creek NW ¼ SW ¼ 15-15N-7W (Waverly Quad)	630	64	425	100	3.5	3.0	20	700	72	5	1.16	0.6	0.4	0.2	0.1	0.2	0.1	0.1	0.1
12	Lick Creek NE ¼ NW ¼ 15-14N-7W (Waverly Quad)	630	666	7,325	2,400	26.9	1.3	33	800	144	23	8.76	7.6	5.6	3.4	2.8	4.0	3.1	1.3	1.2
13	Trib. Lick Creek NE ¼ SE ¼ 6-14N-6W (Waverly Quad)	600	109	1,015	300	2.4	0.9	28	750	109	4	0.78	0.7	0.6	0.4	0.3	0.6	0.3	0.2	0.1
15	Trib. S. Fk. Sangamon River NE ¼ NW ¼ 10-14N-4W (Divernon Quad)	580	90	930	300	1.6	0.9	31	600	106	4	0.78	0.7	0.6	0.4	0.3	0.6	0.4	0.2	0.1
16	Trib. S. Fk. Sangamon River NE ¼ NW ¼ 23-14N-4W (Divernon Quad)	580	301	2,905	900	7.6	1.4	29	800	126	11	3.69	3.4	2.4	1.4	1.3	1.6	1.2	0.6	0.5
18	Henkle Branch SE ¼ SW ¼ 7-13N-4W (Divernon Quad)	600	186	1,425	500	5.9	2.2	23	700	84	6	2.87	1.9	1.3	0.7	0.7	0.8	0.6	0.2	0.2
19	Richland Creek NE ¼ SE ¼ 36-17N-7W (Tallula Quad)	570	1,030	14,070	4,600	9.6	0.3	41	750	203	36	3.18	1.6	1.6	1.6	1.6	1.3	1.3	1.3	1.2

SANGAMON COUNTY



Spring Creek that drains a part of the nearly flat loess-covered Jacksonville moraine. The bedrock surface is approximately 70 to 100 feet below the surface of the uplands and is known to crop out along Spring Creek. The abutments have moderate slopes and are composed of till overlain by loess. A road cut near the abutments shows 2 to 4 feet of loess over 10 feet of till over 2 feet of coarse sand over at least 8 feet of clay with pieces of shale. If future borings show the sand layer to be local, as is expected, no serious geologic problems are anticipated. A few economic problems must be considered since a two-lane blacktop road, a two-lane gravel road, and several access roads would be inundated. Although no residences are in the lake bed proper, about 10 would have to be considered in determining shoreline requirements. Cover in the lake area is mainly pasture with scattered timber. This is an attractive and probably feasible site that should develop at a moderately high project cost.

Site 11. A small reservoir could be developed on a tributary of Spring Creek about 2.5 miles northeast of New Berlin. The nearly flat uplands slope gradually to the creek banks forming a rather shallow V-shaped valley with gently sloping sides. The site is in pasture except for a few trees near the creek. A one-lane oiled road across the site could be raised or relocated. Three dwellings near the lake might interfere with normal shoreline control. Geologic conditions seem to be favorable since logs of previous borings indicate that bedrock is overlain by 70 feet of till overlain by loess. The depth of loess or alluvium in the creek bed was not determined, but this material should be cored through to the more impervious till. Suitable material for construction of an earth dam is available in the nearby clayey loess and underlying till. This site seems to be feasible and would probably develop at a moderate project cost.

Site 12. An excellent site exists on Lick Creek with the dam located 1 mile southwest of Loami. No residences

would be inundated by the development but several would have to be acquired for shoreline control. An east-west two-lane blacktop road might have to be raised in two locations. Of three other north-south township roads, one could be placed over the structure, one raised, and the other abandoned. Existing township roads surround the lake and form an excellent access system. About a fourth of the lake area is in timber and the remainder in agricultural development. The valley is moderately steep walled and cuts into the gently undulating Jacksonville drift plain. Logs of previous borings indicate that glacial drift, primarily till, is about 65 feet deep and is overlain by 5 to 20 feet of loess. Exposures of the till indicate that it is a clayey gravelly till and that it would provide a good foundation and be suitable borrow for the earth fill. The site appears to be feasible, pending a program of testing and boring to substantiate the above findings and to investigate the extent of coal mining beneath the reservoir. This site should result in a moderately high cost project.

Site 13. A small attractive site exists on a tributary of Lick Creek about 2.5 miles northeast of Loami. No dwellings would be involved, but one township road would have to be raised. Cover in the lake bed consists of about half row crop and half pasture. The valley walls and abutments have moderate slopes and are composed of glacial till overlain by loess. A previous boring in the uplands near the site shows 21 feet of clayey loess over 110 feet of glacial drift, primarily till. Depth of the alluvium at the dam site is not expected to be great. The dam could be founded on till and constructed of the nearby till and clayey loess. Although future test borings would be required to confirm these findings, no geologic problems are anticipated. This site should develop at a low project cost.

Site 15. A small attractive reservoir could be developed on an intermittent southern tributary of the South Fork Sangamon River. Township roads closely surround the site, but only one would have to be raised. No dwellings would be inundated, but four would be close to lake

level so that shoreline control requirements would have to be relaxed or the residences acquired. Cover in the lake area is brush or light timber. Active oil wells in the area might prove to be an acquisition problem as well as a pollution problem. The valley walls and abutments have moderate slopes and are composed of till overlain by loess. An exposure of gravelly clayey brown till on the lower part of the right abutment indicates the nature of the foundation and the excellent borrow material available. In general this site appears feasible and could be developed at a moderately high project cost.

Site 16. A long but narrow reservoir could be developed on a southern tributary of the South Fork Sangamon River. The main body of the lake would be 4 miles east and 4 miles north of Pawnee. Two dwellings would have to be acquired for shoreline control, but no other structures nor roads would be involved. The reservoir area is in pasture and scattered timber with additional timber near the dam site. A new reservoir being developed just 2 miles to the east may reduce the desirability of this site. The depth of glacial materials is estimated at 100 feet. The nature of these deposits is obscured by loess which covers the valley walls and moderately sloping abutments. No serious geologic problems are anticipated, but future borings would be required to determine the nature of deep glacial deposits and to locate a source of borrow. An investigation of local oil activity should also precede development.

Site 18. A shallow reservoir could be developed on Henkle Branch of Horse Creek with the dam located near the southwest limits of Pawnee. A two-lane township road would be inundated and the acquisition of three dwellings would be required. The structure itself would be expensive because of the high degree of hazard downstream. Approximately two-thirds of the lake area is in pasture and the rest in timber. The close proximity of the site to Pawnee and Illinois Route 104 would certainly be an economic factor in favor of the site. The upland topography is very gently undulating with relief of 10 to 20 feet. Logs of previous borings indicate that

Existing Reservoirs in Sangamon County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Springfield Lake	12-15N-5W (Springfield Quad)	Springfield	265.0	169,600		35	4,234.0	58,380.0	19,090.0	4.13	1948 sed. survey
Clear Lake	22-16N-4W (Springfield Quad)	Clear Lake Sand & Gravel Co.	0.40	260		45	45.5				Gravel pit
Knapp Res.	25-15N-7W (Waverly Quad)		3.49	2,232	25	25	41.0	115.3	37.6	0.62	1952 sed. survey
	16-15N-3W (Mechanicsburg Quad)	Buckhart Sand & Gravel Co.				20	9.7				Gravel pit
	17-15N-3W (Mechanicsburg Quad)	Buckhart Sand & Gravel Co.				30	7.3				Gravel pit
Mud Lake	8-16N-4W (Springfield Quad)	St. John's Hosp.					6.5				Slough in river bottom

the bedrock is overlain by 40 to 50 feet of Illinoian glacial deposits. The upper 15 to 20 feet of material is surficial soil and loess. A program of test borings and material testings would be required to determine foundation conditions, availability of till, and suitability of loess for borrow. This site is considered geologically feasible, and should result in a moderately high cost project.

Site 19. A large attractive reservoir could be developed on Richland Creek with the dam located 2 miles west of Salisbury. Richland Creek displays a dendritic drainage pattern and is deeply entrenched with moderately steep slopes. A two-lane blacktop road would probably have to be relocated and a one-lane oiled road abandoned. Two dwellings would be inundated by the devel-

opment and about four others would have to be acquired for shoreline. A coal mine lift near the shoreline indicates possible problems with underlying mine shafts. About three-fourths of the lake area is free from timber, and the floodplain is under cultivation and the valley walls in pasture. Logs of previous borings indicate that about 75 feet of till is capped by 20 to 25 feet of loess. The stream cuts into about 6 feet of alluvial silt. The abutments are till with a light loess and soil cover. This till should form the foundation of the dam and will be available for borrow. The nature and extent of coal mining in the area and the depth of alluvium in the floodplain would require further investigation. This site should develop at a moderate project cost.

SCHUYLER COUNTY

At least two glaciers covered Schuyler County. The melting glaciers left a mixture of mineral materials, known as drift, accounting for the smoothness of the topography prior to the erosion by the present drainage channels. Deposits of silt and fine sand, known as loess, were blown from barren river flats kept free of vegetation by frequent glacial flooding. The thickness of the loess varies from a minimum of 5 feet in the western part to a maximum of 50 feet or more on the Illinois River bluffs. Meltwaters from glaciers following the Illinoian brought immense volumes of water to the Illinois River and deposited much sediment in the bottomlands.

The bedrock surface in Schuyler County is composed primarily of shale with underlying layers of limestone, coal, and sandstone. These Pennsylvanian age formations overlie the older Mississippian strata of limestone which are exposed in the La Moine and Illinois River Valleys.

Drainage is to the Illinois River through the La Moine River and Sugar Creek and their tributaries. The most characteristic feature of the topography is the narrow flat area, or tabular divide, lying between steep sided V-shaped valleys. Bottomlands along the small streams are narrow, and slopes leading to the uplands are too steep to cultivate.

Topographic and geologic conditions in Schuyler County are favorable for reservoir development and potential sites are abundant. The results of 19 feasibility studies follow.

Site 1. Willow Creek, a tributary of the La Moine River, has a potential reservoir site 2 miles north and 1 mile east of Brooklyn, and 6.75 miles west and 1.25 miles north of Littleton. No roads nor residences

would be involved in the development of this site. There is a gravel road immediately downstream from the proposed site that probably could be relocated across the structure. The reservoir area is about half open land but appears to be of low productivity. The channel is about 40 feet wide and 7 feet deep in an alluvial plain about 600 feet wide that consists of tan and gray silt, much sand, and some gravel with sandstone and coal chips. The valley walls have moderate slopes and, although there are no bedrock exposures, the valley walls are probably composed of sandstone of Pennsylvanian age. The lower part of the valley walls consists of glacial drift, and the upper part has brown gravel containing small well rounded white quartz pebbles. Material suitable for dam construction is available. The dam site is probably feasible, subject to verification by test borings. This site should develop at a moderate project cost.

Site 2. Honey Branch, a tributary of the La Moine River, has a potential dam site located 5 miles west of Littleton and north of Illinois Route 101. No residences nor utilities would be involved in the development of this site. One gravel road crosses the site and would have to be relocated across the structure. The reservoir area is about three-fourths open land held in reserve. Most of the valley walls are covered with mixed hardwoods. The channel is about 4 feet deep and 70 feet wide. The alluvial plain is about 650 feet wide, and is composed of silt, sand, gravel, cobbles, and boulders. The valley walls have moderate slopes with a steep break about 25 feet above the valley floor. It is probable that bedrock sandstone lies not very far below the creek bed and may form the lower part of the valley walls, but none is exposed at the dam site. A road cut near the southern abutment exposes sandstone and shale. The

upper abutment is composed largely of loessial silt but includes some gravel. Material suitable for dam construction is available. The site is classed as probably feasible, subject to verification by a program of test borings and materials testing. This should make a good site at a moderate project cost.

Site 3. Honey Branch, a tributary of the La Moine River, has a potential reservoir site 2 miles west and 1 mile north of Littleton. The reservoir area is in timber except for some pasture on the floodplain. No roads nor residences would be involved in development of this site. The stream has virtually no floodplain but has a channel about 25 feet wide underlain by limestone of Pennsylvanian age overlain by glacial boulders and mixed gravels. The valley walls are steep up to about

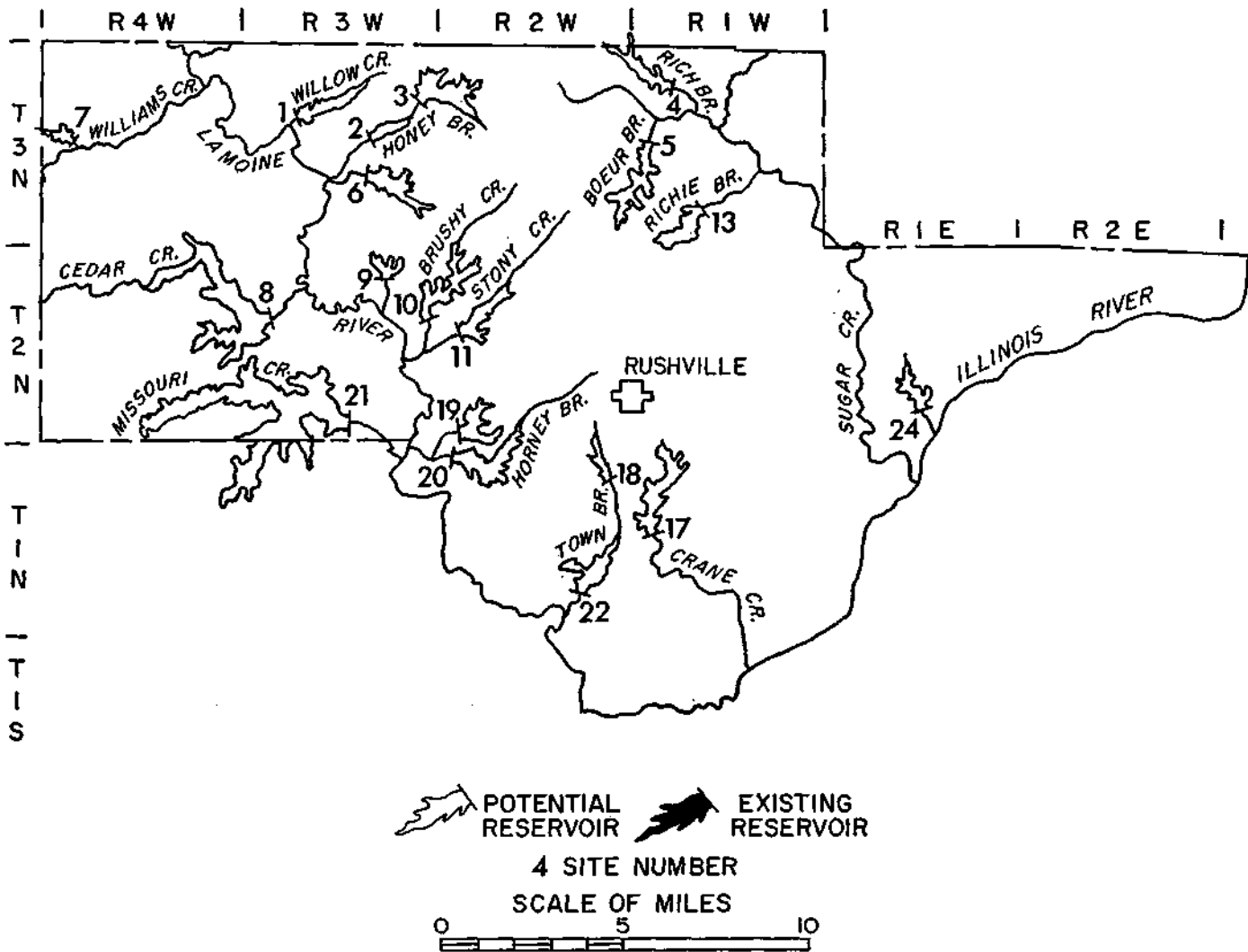
25 feet above the stream bed where they become less steep and expose some colluvium containing white very well rounded quartz pebbles derived from glacial till. A number of abandoned drift coal mines are located in the east wall of the valley about 20 feet or less above the stream level. These mines constitute a possible avenue of escape for water from the reservoir or around the proposed dam. The dam site is considered not feasible because of the unfavorable situation created by the coal mines; however, further examination and a complete testing program is warranted. This could be a high cost project depending upon the geologic findings.

Site 4. Rich Branch, a tributary of Sugar Creek, has a potential reservoir site 4.5 miles south and 3.5 miles east of Industry. The floodplain in the reservoir area

Potential Reservoirs in Schuyler County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Willow Creek SE 1/4 SW 1/4 9-3N-3W (Macomb Quad)	540	205	3,000	1,000	7.0	0.9	44	1,150	352	7	2.48	2.4	1.9	1.8	1.6	1.9	1.3	0.9	0.9
2	Honey Branch SE 1/4 SE 1/4 15-3N-3W (Rushville Quad)	540	165	2,475	800	9.6	1.5	45	850	244	4	3.40	2.9	2.2	1.7	1.6	2.0	1.4	1.0	0.9
3	Honey Branch Ctr. 12-3N-3W (Macomb Quad)	620	305	6,100	2,000	6.0	0.4	60	750	317	10	2.13	1.7	1.7	1.7	1.7	1.9	1.8	1.5	1.4
4	Rich Branch NW 1/4 NW 1/4 8-3N-1W (Macomb Quad)	600	275	4,396	1,400	5.6	0.5	48	850	280	9	1.98	1.6	1.6	1.6	1.6	1.8	1.5	1.2	1.1
5	Boeur Branch SW 1/4 SE 1/4 18-3N-1W (Rushville Quad)	600	405	6,750	2,200	8.4	0.5	50	500	167	15	2.98	2.4	2.4	2.4	2.4	2.7	2.4	1.9	1.7
6	Fowler Branch SE 1/4 SE 1/4 22-3N-3W (Rushville Quad)	580	300	7,500	2,400	6.3	0.3	75	650	398	9	2.23	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.6
7	Trib. Williams Creek Ctr. S 1/2 SE 1/4 18-3N-4W	600	83	1,300	400	2.3	0.7	47	800	233	3	0.81	0.7	0.7	0.6	0.6	0.7	0.5	0.4	0.4
8	Cedar Creek SW 1/4 NE 1/4 18-2N-3W	560	1,856	52,580	17,100	52.0	0.4	85	1,050	899	38	18.42	15.8	15.8	15.8	15.8	17.3	16.5	13.5	12.5
9	Spring Creek N. line 11-2N-3W (Rushville Quad)	540	145	2,415	800	3.0	0.5	50	700	251	5	1.06	0.8	0.8	0.8	0.8	0.9	0.8	0.7	0.6
10	Brushy Creek Ctr. NE 1/4 13-2N-3W (Rushville Quad)	540	640	10,650	3,500	12.2	0.4	50	750	265	14	4.32	3.4	3.4	3.4	3.4	3.9	3.5	2.8	2.6
11	Stony Creek NE 1/4 SE 1/4 18-2N-2W (Rushville Quad)	540	280	4,665	1,500	13.6	1.1	50	950	337	7	4.82	4.7	3.8	3.2	2.8	3.4	2.3	1.6	1.6
13	Richie Branch NW 1/4 NW 1/4 33-3N-1W (Rushville Quad)	600	215	2,864	900	4.5	0.6	40	450	120	7	1.59	1.3	1.3	1.3	1.2	1.4	0.9	0.7	0.7
17	Crane Creek Ctr. S 1/2 SE 1/4 18-1N-1W (Rushville Quad)	540	429	8,722	2,800	13.0	0.6	61	900	446	9	4.61	4.0	4.0	4.0	3.6	4.3	3.5	2.8	2.4
18	Town Branch SE 1/4 SW 1/4 1-1N-2W (Rushville Quad)	600	105	1,925	600	2.2	0.4	55	650	261	3	0.78	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.4
19	Ryan Branch SE 1/4 SE 1/4 1-1N-2W (Rushville Quad)	520	400	6,000	2,000	8.6	0.6	45	900	283	10	3.05	2.5	2.5	2.5	2.4	2.8	2.3	1.8	1.5
20	Horney Branch SW 1/4 NE 1/4 6-1N-2W (Rushville Quad)	520	445	6,808	2,200	12.6	0.7	46	850	264	14	4.46	4.3	4.2	3.5	3.2	3.7	2.6	1.9	1.9
21	Missouri Creek NW 1/4 SW 1/4 34-2N-3W (Rushville Quad)	520	4,440	78,440	25,600	87.0	0.4	53	800	325	50	30.82	24.5	24.5	24.5	24.5	27.9	25.6	20.6	18.9
22	Town Branch NW 1/4 SE 1/4 26-1N-2W (Rushville Quad)	500	355	4,956	1,600	14.2	1.1	42	650	171	12	5.03	4.9	4.0	3.4	2.9	3.6	2.4	1.6	1.2
24	Friddle Br. Illinois River NW 1/4 NW 1/4 34-2N-1E (Beardstown Quad)	520	165	3,025	1,000	3.4	0.4	55	850	326	7	1.20	1.0	1.0	1.0	1.0	1.1	1.0	0.8	0.7

SCHUYLER COUNTY



is free of timber and in low production. The creek bed consists of sand and gravel and is 35 feet wide and 7 feet deep in an alluvial plain consisting of pebbly silt. Both valley walls are moderately steep and covered with mixed hardwoods. Reddish till is exposed in the northern slope up to 16 feet above the alluvial plain. No bedrock is exposed. This site is probably feasible, subject to verification by test borings. This site should develop at a moderate project cost.

Site 5. Boeur Branch, a tributary of the West Branch Sugar Creek, has a potential reservoir site 3.5 miles east of Littleton. About half of the reservoir area is open land in grass. One gravel road crosses the reservoir site but could be relocated over the structure. There are several areas of upland hardwoods, and much of the valley walls is covered with mixed hardwoods. The channel is about 35 feet wide and 8 to 9 feet deep. The alluvial plain is 350 feet wide and consists of nongravelly

sand and silt. The stream flows on a bed of sand and silt containing blocks of sandstone several feet thick. Ledges of sandstone of Pennsylvanian age are exposed in the stream banks. The valley walls have moderate slopes and consist of a few feet of glacial till overlying irregular beds of strongly jointed silty and flaggy sandstone also of Pennsylvanian age. The site is probably feasible, subject to verification by test borings. This should make a long many-fingered reservoir at a moderate project cost.

Site 6. Fowler Branch, a tributary of the La Moine River, has a probable dam site located 5 miles west and 0.75 mile south of Littleton. The reservoir area is entirely in timber. No roads nor residences would be involved in this development. The channel is about 60 feet wide and 5 feet deep. The alluvial plain is approximately 200 feet wide, and consists of silt and sand with pebbles, cobbles, boulders of limestone, and sandstone.

The lower portion of the south valley wall is very steep, and is composed of Keokuk-Warsaw limestone of Mississippian age overlain by silt and sand containing chips of shaly sandstone derived from bedrock probably only a few feet under the surface. The north valley wall has a moderate slope and appears to consist entirely of glacial drift. The uplands consist of glacial drift mantled with loessial silt. Extensive quarries of light brown, much-jointed Keokuk-Warsaw limestone are found about 150 feet downstream from the dam site. The quarry face is at least 28 feet high. The rock is overlain by silt about 22 feet thick and contains lenses of silt and gravel with small white well rounded quartz pebbles. The site is considered probably not feasible, because of the possibility of excessive leakage through the limestone formations, especially into the adjacent quarries. This site warrants further investigation including a complete program of test borings and materials testing.

Site 7. A potential reservoir site exists on a tributary of Williams Creek 3 miles east and 0.75 mile north of Augusta. The reservoir area is in mixed hardwoods, and has no roads nor residences. The channel is 70 feet wide and 5 feet deep in an alluvial plain about 200 feet wide. The valley walls have moderate slopes. A few large pieces of sandstone on the south slope suggest that sandstone bedrock is very close to the surface. The north slope appears to consist of glacial till overlain by a thin mantle of loess. Material suitable for construction of an earth dam is readily available. The site is probably feasible. This site should make a good small reservoir at a moderately low project cost.

Site 8. Cedar Creek, a tributary of the La Moine River, has a potential dam site located 0.5 mile west and 0.5 mile north of Camden. The floodplain is under cultivation, and the stream banks and valley walls are covered with mixed hardwoods. Two gravel roads crossing the reservoir area could probably be abandoned, and a third road could be raised. This site is readily accessible by

all-weather roads. The stream bed is about 30 feet wide and 10 feet deep in a floodplain approximately 300 feet wide that consists of silt and sand. Both valley walls are steep, and the change in slope probably marks the contact of glacial drift above the bedrock. Suitable material for construction of an earth dam is available. The site is probably feasible, subject to verification by a program of test borings. This would make a large reservoir at a moderate project cost.

Site 9. Spring Creek, a tributary of the La Moine River, has a potential reservoir site located 3.5 miles east and 1.5 miles north of Camden. About one-third of the reservoir area is free from timber, and has a low level of productivity. A gravel road crossing Spring Creek immediately below the dam site could be relocated over the structure. Another access road crosses the reservoir area but could be abandoned. The creek bed is 25 feet wide and 4 feet deep in a floodplain 300 feet wide that consists of silt and sand with some cobbles of sandstone and limestone 2 to 6 inches in length. The slope of the east valley wall is moderate but that of the west wall is steep. The abutments at the dam site are steep. The abutments consist of pink or orange till or colluvium containing well rounded white quartz pebbles overlain by tan loessial silt. This site is probably feasible, and should make a good small reservoir at a moderately high project cost.

Site 10. Brushy Creek, a tributary of the La Moine River, has a potential dam site located 6 miles west and 2.75 miles north of Rushville. The reservoir area is about 50 percent free of timber but has a low level of productivity. One residence would have to be acquired. Of two gravel roads crossing the reservoir area, one would have to be abandoned and the other relocated. The stream channel is about 30 feet wide and 11 feet deep in a floodplain approximately 450 feet wide. The alluvium consists of silt and sand with a small amount of gravel. The east bank and valley wall are steep, and the

Existing Reservoirs in Schuyler County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity		Remarks and data source	
			(sq mi)	(acres)				(ac-ft)	(mg)		(in)
CB&Q Bader	1-2N-1E (Beardstown Quad)	CB&Q R.R.	1.09	700			19	136	44.5	2.3	
Big Lake	9-1N-1E (Beardstown Quad)						115				
Small Lake	8-1N-1E (Beardstown Quad)						52				
Sugar Creek Lake	3-4-1N-1E (Beardstown Quad)						80				
Dutchman's Lake	24-25-26-2N-1E (Beardstown Quad)										
Long Lake	18-19-2N-2E (Beardstown Quad)										
Yorky Lake	16-1N-1W (Rushville Quad)						390				

wall consists of orange pink till. The west valley wall is moderately steep. Material suitable for an earth dam is available. This would create a reservoir with many fingers and a long shoreline. This site is probably feasible and could be developed at a moderate project cost.

Site 11. Stony Creek, a tributary of Brushy Creek, has a potential reservoir site 5.5 miles west and 2 miles north of Rushville. About three-fourths of the reservoir area is in mixed hardwoods. One farm residence, a summer cottage, and two gravel roads would be inundated. One gravel road could be relocated across the structure and the other raised. The stream bed is about 25 feet wide and 13 feet deep in an alluvial plain about 500 feet wide that consists of sand and silt. The lower 30 feet of the south valley wall is steep and consists of ledges of bedrock. The north valley wall and the upper part of the south valley wall have moderate slopes and consist of glacial till mantled with loessial silt. Material suitable for construction of an earth dam is available. The dam site is probably feasible, and could be developed at a moderate project cost.

Site 13. Richie Branch, a tributary of Sugar Creek, has a potential reservoir site 5.75 miles north and 2 miles east of Rushville. The reservoir area is about three-fourths mixed hardwoods. No roads nor residences would be involved in the development of this site. The creek bed consists of gravel, cobbles, and boulders in a channel 40 feet wide and 8 feet deep. The alluvial floodplain consists of silt and sand. The slope of the west valley wall is gentle and that of the east valley wall is moderately steep. The valley walls are composed of glacial drift mantled by loessial silt, both of which are suitable material for construction of an earth dam. This dam site is probably feasible, and could be developed at a moderately low project cost.

Site 17. Crane Creek, a tributary of the Illinois River, has a potential reservoir site 4.25 miles south and 0.5 mile east of Rushville. Approximately 50 percent of the reservoir area is in mixed hardwoods. One residence would have to be acquired, and two gravel roads crossing the reservoir area would have to be abandoned. The proposed level of the reservoir would indicate about 20 feet of water under a bridge on U. S. Route 67. The bridge appears to be about 40 feet above the creek bed. The stream channel is about 20 feet wide and 10 feet deep in an alluvial plain about 300 feet wide that consists of silt, sand, and a small amount of gravel. The valley slopes and the uplands consist of glacial drift overlain by loessial silt, both of which are good material for construction of an earth dam. This site appears to be feasible and could be developed at a moderately high project cost. However, the true economics of this reservoir would

depend upon the required clearance of the new U. S. Route 67 highway bridge.

Site 18. Town Branch, a tributary of the La Moine River, has a potential reservoir site 2.25 miles south and 1 mile west of Rushville. The entire reservoir area is rough pasture with considerable brush and large trees. No roads nor residences would be involved. Access to the dam site is fairly good. The stream channel is 20 feet wide and about 7 feet deep in an alluvial floodplain about 250 feet wide that consists of gray sand, a little silt, a moderate amount of gravel, and some large glacial rocks. The east valley wall has a gentle slope and the west wall is moderately steep. No bedrock is exposed. The valley walls and uplands consist of glacial drift mantled with tan loessial silt, both of which are good material for construction of an earth dam. This dam site appears to be feasible, and should make a fair small reservoir at a moderate project cost.

Site 19. A potential reservoir site exists below the confluence of Ryan Branch and Clark Branch, tributaries of the La Moine River. The dam site is 5.5 miles west and 1.5 miles south of Rushville. The reservoir would have many fingers and a long shoreline, and is readily accessible by existing roads. One gravel road crossing the site would have to be relocated. About two-thirds of the reservoir area is in mixed hardwoods, and the remainder is in low productivity crop land. The creek bed is 30 feet wide and 6 feet deep in an alluvial plain 500 to 600 feet wide that consists of sand and silt with some pebbles and larger rock fragments. The north valley wall has a relatively gentle slope but the south valley wall is steep. The valley walls consist of 30 feet of dense tan clayey loessial silt over pinkish glacial till with some concentrations of white well rounded quartz pebbles. A change in slope marks the contact of the loess above the till. Material suitable for an earth dam is available. This site should make a good small reservoir at a moderate project cost.

Site 20. Horney Branch, a tributary of the La Moine River, has a potential reservoir site 5.75 miles west and 2 miles south of Rushville. Access to this site is very good by a road that could later be relocated over the structure. One gravel road across the reservoir area could be abandoned and another relocated. Two farm residences would have to be acquired. About three-fourths of the area is under cultivation. The stream bed consists of sand and silt. The stream channel is about 30 feet wide and 11 feet deep in an alluvial plain approximately 400 feet wide that consists mostly of tan silt with some pebbles. The dam site has steep abutments. On both valley slopes, about 25 feet down from the uplands, there is a change in slope and also a change from tan loessial silt to pinkish silt. The tan loessial silt con-

tains some ironstone concretionary shell chips and white well rounded quartz pebbles. This site should result in a good reservoir at a moderate project cost.

Site 21. Missouri Creek, a tributary of the La Moine River, has a potential reservoir site 2 miles east and 3 miles south of Camden and 9 miles west and 0.75 mile south of Rushville. The major problem in development of this site would be the relocation of Illinois Route 99. Two gravel roads could be relocated or abandoned. Timber in the reservoir area is restricted to the stream banks and the valley walls. The floodplain is under cultivation. The stream bed is 18 feet deep in an alluvial plain about 600 feet wide. Sandstone of Pennsylvanian age is exposed in the south bank of the channel, and large blocks of sandstone are found in the stream bed. The slope of the north valley wall is gentle. The slope in the south valley wall is relatively steep with a break in slope about 30 feet above the alluvial plain which probably marks the contact of glacial drift and bedrock. Clayey loessial silt mantles the uplands. Material suitable for construction of an earth dam is available. The dam site is possibly feasible, subject to verification by an adequate program of test borings. This site should result in a large many-fingered reservoir at a moderately high project cost.

Site 22. Town Branch, a tributary of the La Moine River, has a potential reservoir site 2.25 miles east and 0.75 mile north of Ripley. Most of the reservoir area is in timber and patches of cultivated land. The floodplain area is in pasture. Two residences would have to be acquired, and one gravel road would have to be raised. The stream bed is about 35 feet wide and 9 feet deep in an alluvial plain 250 feet wide that consists of sand with very little gravel. No bedrock is visible at the dam site,

but very massive heavily joint-fractured sandstone is exposed near the west abutment. The valley walls and uplands consist of glacial drift mantled with loessial silt, both of which are good material for construction of an earth dam. The site is considered feasible, subject to further investigation. This site should result in a many-fingered reservoir at a moderate project cost.

Site 24. Friddle Branch, a tributary of the Illinois River, has a potential reservoir site 1 mile west and 1 mile south of Browning. About half of the reservoir area is in timber and the rest under cultivation. Development of this site would require relocation of one gravel road. No known residences nor outbuildings would be involved. The stream bed is composed of sand and gravel with some loose boulders lying on thinly bedded sandstone of Pennsylvanian age. The stream channel is 35 feet wide and about 6 feet deep in an alluvial plain about 250 feet wide that consists of silt, sand, gravel, and large pieces of rock. The valley slopes are steep up to about 35 feet above the stream bed where they change to gentle slopes marking the contact between bedrock and glacial drift. The material on the slopes indicates that the bedrock consists of limestone between sandstone and shale. Outcrops of limestone of Mississippian age at a short distance south and east of the dam site indicate that the same formation not only underlies the Pennsylvanian formation but may also be directly underneath the alluvium at the dam site. These limestone formations may have solution channels. Material suitable for construction of an earth dam is available. The dam site is probably feasible, subject to an adequate program of testing to examine the limestone formations. This site should result in a small reservoir at a moderate project cost.

SCOTT COUNTY

The branching tributaries that cut into the uplands along the main valley of the Illinois River have shaped Scott County into a landscape of bold bluffs, deep hollows, and narrow upland prairies. Although the county has been sculptured primarily by running water, important developments in the landscape took place during the geologically recent glacial period. The Illinoian glacier covered all of Scott County. Subsequent glaciers fell short of the county but produced great volumes of meltwaters that carried sediments down the Illinois River Valley. The uneroded glacial deposits in the Illinois Valley are complex. Most of the uplands are blanketed by unsorted glacial debris known as till. In the valleys and in portions of the uplands there are outwash deposits of water-sorted sands and gravels. On the uplands, especially near the Illinois River bluffs, are deposits of wind-blown silts and fine sand known as loess.

The bedrock is of Pennsylvanian age and consists of layers of shale, coal, limestone, and sandstone in the eastern half of Scott County. These were laid down as sediments and were later buried, consolidated, tilted, and warped from the horizontal position. In the western half of the county along the Illinois River Valley the older Mississippian limestones form the bedrock surface.

Scott County lies wholly within the Illinois River Basin and drains to the southwest through Mauvaise Terre, Walnut, and Sandy Creeks.

Permeable sandy deposits in the major valleys are a hazard to reservoir development, but sites are abundant in the eastern two-thirds of the county. The results of 10 feasibility studies follow.

Site 1. A potential reservoir site exists on Eagle Run with the dam located about 1.5 miles northeast of Bluffs. No roads nor residences would be directly involved in the development. Three township roads and Illinois Route 100 provide good access to the reservoir area. Brush and timber cover the lake site indicating low property value. Logs of previous borings in the reservoir area indicate loess is 10 to 20 feet deep underlain by drift. The drift materials consist of the Illinoian Payson ground moraine, primarily till, which may be overlain by outwash from the Jacksonville moraine. There is no floodplain development at the dam site so that alluvium would not be a problem; however, the existence of outwash materials would create a situation similar to deep alluvium. Material suitable for the construction of an earth dam may be available in the more clayey loess or possibly in the underlying till. The site is considered probably feasible, pending verification by a complete program of test borings and material testing. This site should be developed at a low project cost.

Site 2. A small reservoir could be developed on an intermittent tributary of Mauvaise Terre Creek about

2 miles southwest of Chapin. No roads nor residences would be involved in the development, although township roads would be close to three sides of the lake. Cover in the lake area is timber. The stream drains part of the gently undulating Illinoian drift plain that is mantled by 10 to 15 feet of loess. Logs of previous borings indicate that drift is about 50 feet deep on the uplands. Bedrock outcrops nearby in Mauvaise Terre Creek and should be expected at stream bed depths near the dam. The abutments have moderately steep slopes and probably consist of bedrock at the base overlain by till and loess. A 3-foot layer of gravel was observed at the base of one abutment. Till on weathered loess should provide suitable borrow for an earth dam and is readily available. The site is considered probably feasible geologically, pending further investigation by test borings and material testing. This site should result in a low cost project.

Site 3. An attractive reservoir site exists on Walnut Creek with the dam located about 4 miles northeast of Winchester. The lake would extend some 2.5 miles upstream to within 1 mile of Lynnville. No roads would be inundated by the development. No residences would be directly involved in the development, but acquisition of several dwellings may be necessary to achieve shoreline control. Approximately half of the lake area is in timber and the remainder in pasture or brush. The watershed is long and narrow, and consists of a portion of the gently rolling Illinoian drift plain north of Winchester. The abutments have moderate slopes and probably consist of till with bedrock close to the base and a mantle of loess draping into the valley. The stream flows in a 6- to 8-foot notch composed of alluvial sand and silt. Depth of the alluvium was not determined. Material suitable for the construction of an earth dam may be available in the nearby weathered loess or underlying till. The site is considered probably feasible pending verification by test borings and materials testing.

Site 4. A potential reservoir site exists on Plum Creek with the dam site located about 5.5 miles northwest of Winchester. Depth is carried well upstream making a long useful shoreline. Township roads would be inundated in six locations. Only one residence would be inundated, but several near the shoreline would probably have to be acquired. Cover in the site consists of about half row crops and half timber, with timber concentrated in the fingers. Plum Creek is a tributary of Walnut Creek and drains part of the east bluff of the Illinois River Valley. The uplands are about 100 feet above the valley bottom which is probably very close to bedrock. The abutments have moderate slopes and are covered with loess underlain by till with bedrock at the base. The weathered loess or underlying till should provide a suitable and adequate source of borrow. This site should

result in a many-fingered reservoir at a moderate project cost.

Site 5. A many-fingered reservoir could be created by construction of a dam 1.5 miles downstream from the confluence of Sandy Creek and Brushy Fork, about 3 miles east of Winchester. Township roads would be inundated in six locations, but the existing roads would provide the basis of a good around-the-lake road system. The two major branches of this site would provide an exceptionally long wooded shoreline. Timber extends down the valley walls to the floodplain which is under cultivation. Only two residences would be inundated by this development, but several would probably be acquired for shoreline control and recreational developments. The watershed reaches over the deep loess-covered gently undulating Illinoian drift plain. Both of the major valleys are deeply entrenched, probably below the bedrock surface. The abutments have moderate slopes and are composed of bedrock at the base overlain by till. The bedrock and till are obscured by loess which drapes into the valleys. The stream flows in a 6-foot notch composed of valley silt and alluvium of an undetermined depth. The dam probably would be founded on bedrock, and a core wall keyed into bedrock. Material suitable for the construction of an earth dam may be available in the underlying clayey loess or till. The site is considered probably feasible geologically, pending adequate test borings and materials testing.

Sites 6 and 7. *Site 6* is on a tributary of Sandy Creek with the dam about 2.5 miles east-southeast of Win-

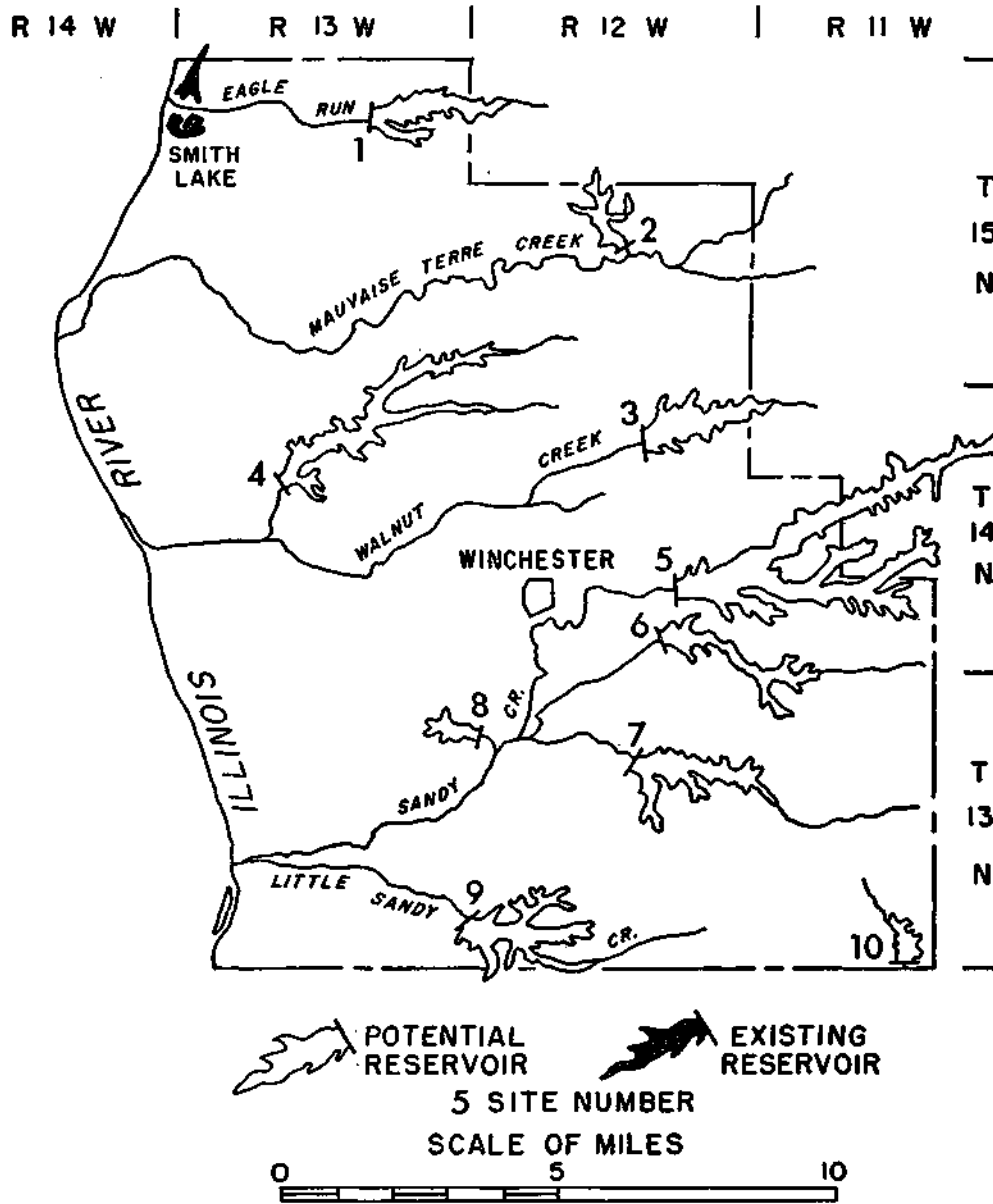
chester. *Site 7* is on Little Sandy Creek about 4 miles southeast of Winchester. The valley systems of both sites are of an advanced dendritic nature, deeply entrenched into the gently undulating Illinoian drift plain. Two township roads cross each site and would have to be relocated. There are no residences within the lake areas, but shoreline requirements would necessitate acquisition of a few dwellings. The valley of *site 7* is V-shaped and nearly all in timber. *Site 6* has a wide floodplain with considerable agricultural development. These sites also present similar geology. Bedrock outcroppings are common throughout both valleys and loess probably rests directly on the bedrock surface in most of the region. An exposure near dam *site 7* shows 10 feet of loess over 25 feet of siltstone and shale over 3 feet of coal over 8 feet of underclay to the stream bed. Areas may be located where till exists between the bedrock and loess in sufficient quantities to be used for borrow. Both sites are considered probably feasible, subject to a program of adequate test borings and material testing.

Site 8. A small reservoir could be developed on an intermittent tributary of Sandy Creek 3 miles south-southwest of Winchester. The watershed encompasses a portion of the Illinoian till plain and extends to the ridge line of the Illinois River bluffs. One township road would have to be relocated. Cover in the lake area consists of brush in the bottoms and timber on the valley walls. The abutments have moderate slopes. Loess drapes into the valley covering the underlying materials. Bedrock forms the stream bed at the dam site and prob-

Potential Reservoirs in Scott County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Eagle Run E 1/2 SE 1/4 3-15N-13W (Meredosia Quad)	540	134	2,546	800	3.7	0.8	57	650	283	6	1.84	1.8	1.6	1.2	0.8	1.6	0.9	0.7	0.4
2	Trib. Mauvaise Terre Creek NE 1/4 NW 1/4 22-15N-12W (Winchester Quad)	560	77	1,052	300	2.5	1.3	41	450	115	4	1.24	1.2	0.8	0.6	0.4	0.7	0.5	0.2	0.2
3	Walnut Creek NW 1/4 NW 1/4 11-14N-12W (Winchester Quad)	580	314	4,289	1,400	7.3	0.9	41	1,000	253	12	3.55	3.4	2.6	1.8	1.3	2.6	1.4	0.8	0.7
4	Plum Creek NE 1/4 NW 1/4 16-14N-13W (Griggsville Quad)	520	1,267	34,209	11,100	22.2	0.4	81	800	626	39	10.78	9.9	9.9	9.9	8.1	9.8	9.7	6.6	4.3
5	Sandy Creek NE 1/4 NE 1/4 26-14N-12W (Winchester Quad)	560	2,029	39,221	12,800	63.8	0.9	58	1,500	649	62	30.99	29.9	24.7	17.3	11.8	23.9	14.2	8.6	7.1
6	Trib. Sandy Creek NE 1/4 NW 1/4 35-14N-12W (Winchester Quad)	540	691	11,975	3,900	19.0	0.8	52	950	328	17	9.23	8.8	7.2	5.2	3.6	7.2	4.1	2.5	2.0
7	Little Sandy Creek SE 1/4 SE 1/4 10-13N-12W (Winchester Quad)	560	435	8,265	2,700	17.5	1.2	57	950	403	19	8.50	8.3	5.6	4.1	2.7	5.4	3.4	2.0	1.8
8	Trib. Sandy Creek SE 1/4 NW 1/4 7-13N-12W (Winchester Quad)	500	77	898	300	2.2	1.3	35	700	141	3	1.07	1.0	0.6	0.4	0.3	0.6	0.4	0.2	0.1
9	Little Sandy Creek NE 1/4 NW 1/4 31-13N-12W (Winchester Quad)	540	717	15,057	4,900	24.4	0.9	63	600	295	26	11.85	11.5	9.5	6.7	4.6	9.2	5.5	3.4	2.8
10	Marks Creek SW 1/4 SE 1/4 34-13N-11W (Winchester Quad)	620	154	1,796	600	3.1	0.9	35	600	128	7	1.51	1.4	1.1	0.7	0.5	1.1	0.6	0.3	0.3

SCON COUNTY



Existing Reservoirs in Scott County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Smith Lake	6-15N-13W (Mercedosia Quad)	Smith & House Lewis Pessina	0.78	500		3-6	175	700	228	16.8	Platt book

ably forms the lower 20 or more feet of the abutments. Till may be present between the bedrock and loess layer but could not be determined during a surficial examination. If till is not present, the underlying clayey loess could be used for borrow. The site is considered probably feasible geologically, pending adequate borings and materials testing. This site should develop at a low project cost.

Site 9. A potential reservoir site exists on Little Sandy Creek with the dam site 1 mile south of Glasgow. This reservoir would have a wide main pool and three tributary fingers. The only road crossing the site is an access road for three residences that would have to be acquired. Most of the floodplain is under cultivation, but the valley walls are heavily wooded. The drainage system shows an advanced dendritic pattern with moderately

steep walled valleys cutting through 50 to 100 feet of glacial drift and into the bedrock surface. Shaly siltstone is exposed in the stream bed and as much as 25 feet high on the valley walls. Tan loess rests on bedrock and occasionally drapes into the valley. Alluvium makes up most of the material in the flat floodplain area but is not expected to be deep. Material suitable for the construction of an earth dam is probably available in the underlying clayey loess. The site is considered probably feasible geologically, pending adequate test borings and materials testing. This site should develop at a moderate project cost.

Site 10. A small reservoir could be developed on Marks Creek with the dam located 2 miles southeast of Man-

chester. No roads nor residences would be involved. The narrow floodplain is in pasture, but hardwood timber covers the valley walls. The watershed includes the town of Manchester indicating a potential pollution problem. The abutments are moderately steep and consist of 15 to 20 feet of bedrock possibly overlain by till overlain by 10 to 15 feet of loess. The top 5 feet of bedrock is weathered and might be a source of leakage. There is a small quantity of alluvium in the valley bottom, but the dam would be founded on bedrock. The weathered loess nearby may provide a suitable source of borrow for an earth dam. The site is considered probably feasible geologically, pending adequate boring and materials testing. This site should develop at a moderate project cost.

STARK COUNTY

The bedrock surface of shale, sandstone, and limestone was covered with glacial material to depths of a hundred feet or more in Stark County. During the glacial epoch, ice sheets moved south from the northwest and northeast. The tremendous force exerted by the advancing ice leveled hills, gouged out basins, and transported the resulting debris for hundreds of miles. The Illinoian glacier covered all of Stark County. The till which the Illinoian deposited was leached and weathered until a soil developed. The Wisconsin glacier covered only the eastern part of the county. The ridge on which Bradford and Speer are located represents the terminal moraine of the Wisconsin glacier and marks the western limit of this glaciation. Wisconsin meltwaters deposited huge quantities of sediment close to the moraine, forming the outwash plain where Lombardville and Stark are located. Fine silts were deposited in the bottomlands and upon drying were blown to the adjacent

uplands. This wind-blown deposit, known as loess, is in excess of 10 feet thick over much of the Illinoian drift and from 3 to 5 feet thick over the Wisconsin deposits.

Nearly all of Stark County drains to the south through the Spoon River.

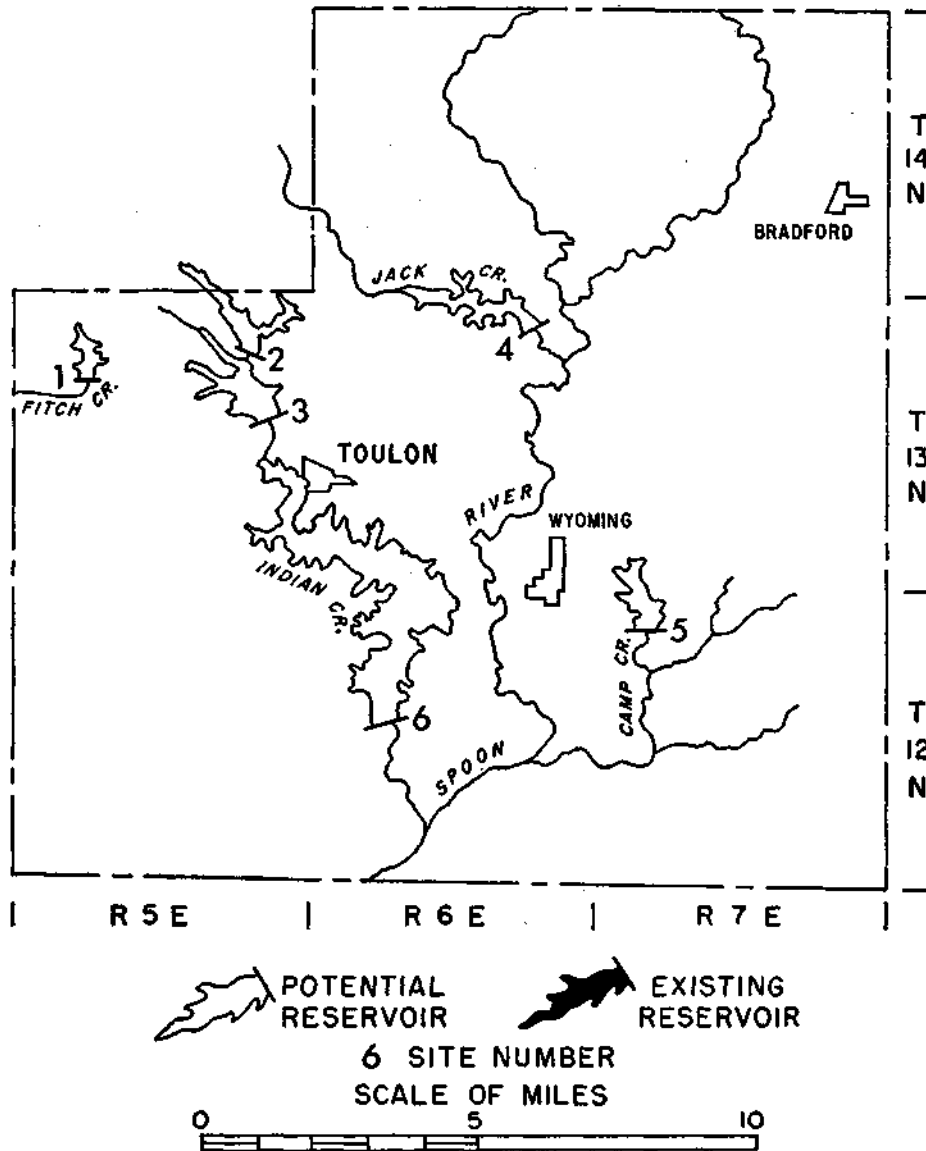
Several potential reservoir sites are available through the central portion of Stark County. The results of six feasibility studies follow.

Site 1. A potential reservoir site exists on Fitch Creek, a tributary of Walnut Creek, 1 mile northeast of LaFayette. The watershed is 3 miles by 1 mile and has gently rolling uplands and very gradual slopes into the valley. No residences, buildings, utilities, nor roads would be involved. The entire area is in cultivation except for the stream banks. The reservoir area is accessible by gravel township roads. The channel is about 8 feet deep in an alluvial plain approximately 150 feet wide. The stream

Potential Reservoirs in Stark County

Site	Waterway location	Spillway elevation (ft)	Fool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Fitch Creek SE ¼ SW ¼ 8-13N-5E (Kewanee Quad)	770	100	670	200	3.3	2.1	20	600	62	3	1.26	1.0	0.7	0.5	0.5	0.5	0.3	0.3	0.2
2	Indian Creek SW ¼ NE ¼ 11-13N-5E (Kewanee Quad)	720	435	4,350	1,400	28.1	2.3	30	650	106	8	10.76	8.6	6.1	4.8	4.5	4.8	3.7	2.9	2.7
3	Indian Creek SW ¼ SW ¼ 13-13N-5E (Kewanee Quad)	720	1,140	17,500	5,700	36.8	0.9	45	1,700	557	17	14.09	13.6	12.1	10.9	10.3	12.4	8.3	6.3	5.9
4	Jack Creek Cir. S ½ 2-13N-6E (Kewanee Quad)	710	570	8,360	2,700	15.6	0.8	44	900	264	14	5.97	5.7	5.4	4.8	4.5	5.4	3.7	2.9	2.6
5	Camp Creek SE cor. 6-12N-7E (Bradford Quad)	680	240	2,160	700	4.0	0.8	27	2,000	292	7	1.53	1.4	1.3	1.2	1.1	1.3	0.8	0.6	0.5
6	Indian Creek Cir. SE ¼ 17-12N-6E (Kewanee Quad)	680	2,770	53,500	17,400	64.4	0.5	58	1,700	736	29	24.65	21.7	21.7	21.7	21.7	22.9	18.7	17.1	15.6

STARK COUNTY



Existing Reservoirs in Stark County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Elmira	29-14N-6E (Kewanee Quad)	Wm. Ewan					10.9				
Stonefort Lake	13-13N-6E (Kewanee Quad)	Stonefort Coal Co.					9.0				Strip mine
Armstrong Lake	4-13N-6E (Kewanee Quad)	A. E. Armstrong	0.52	335	19.6	14	8.2	42.2	13.7	1.52	

bed and floodplain consist of silt. The valley walls have very gentle slopes and consist of till overlain by tan loessial silt. No bedrock is exposed at the dam site. Suitable material is available for construction of an earth dam. The site is probably feasible, and should result in a good small reservoir at a moderately low project cost.

Site 2. A potential reservoir site exists on Indian Creek 2.5 miles north and 1.5 miles west of Toulon. The bottomland of the reservoir area is highly developed for agriculture. An east-west township road crossing the upper third of the reservoir area, and a north-south township road along the east side of the reservoir area

would have to be raised. An east-west township road crossing the center of the reservoir would have to be relocated. The stream bed and lower part of the floodplain consist of silt and sand with small amounts of gravel. The upper portion of the floodplain consists of well stratified alluvial silt. The valley walls consist of pinkish till overlain by loessial silt. Material is available for the construction of an earth dam. This should make a good reservoir at a moderate project cost.

Site 3. A potential reservoir site exists on Indian Creek 1 mile west and 1 mile north of Toulon. This dam site is 1.5 miles downstream from *site 2*. The reservoir area bottomland is highly developed for agricultural purposes. No residences nor obstructions are known to exist in the reservoir area. The township road along the western side of the reservoir area would have to be partially relocated, and portions crossing the tributaries would have to be raised. The stream bed and floodplain consist of silt with a little gravel. The valley walls have gentle slopes and consist of pinkish tan till overlain by loessial silt. No bedrock is exposed. Material suitable for the construction of an earth dam is available. The site is probably feasible, and should make a good moderately large reservoir at a moderate project cost.

Site 4. A potential reservoir site exists on Jack Creek, a tributary of the Spoon River, 5 miles north and 0.5 mile west of Wyoming. The bottomland of the reservoir area is primarily in clean tilled crops. One residence and associated outbuildings appear to be in the reservoir area. A twin towered high line crosses the reservoir in a north-south line, at right angles to the reservoir area. A two-lane blacktop road crossing the reservoir would have to be abandoned, but a two-lane gravel township road in the western tip of the area could be raised. The stream bed and floodplain are at least 10 feet thick, consisting of sand and silt with a small amount of gravel. The valley walls have gentle slopes and consist of pink till with deposits of sand and gravel, underlain at a shallow depth by bedrock formations of Pennsylvanian age. Material suitable for the construction of an earth dam is available. Feasibility of the dam site is questionable, subject to further investigation of the occurrence and distribution of gravel deposits which may be sufficiently extensive to allow excessive leakage from the

reservoir. This site should make a good reservoir at a moderate project cost.

Site 5. A potential reservoir site exists on Camp Creek, a tributary of Spoon River, 2 miles east and 1 mile south of Wyoming. The entire bottomland is in clean tilled crops. A two-lane gravel township road crossing the upper third of the reservoir would have to be raised. The channel is about 4 feet wide and 9 feet deep in a floodplain about 500 to 600 feet wide. The stream banks are grassed over and most of the area is covered with vegetation. The stream bed and floodplain consist largely of gray silt overlain by loessial silt. The valley walls have gentle slopes and deep soils composed of either glacial till or glacial outwash, or both, mantled by loessial silt. Material suitable for the construction of an earth dam is available. The site is probably feasible, and should result in a good reservoir. Land acquisition and construction costs would make this a moderately high cost project.

Site 6. A potential reservoir site exists on Indian Creek 5 miles south and 1.5 miles east of Toulon. This is the largest potential site on Indian Creek. Nearly all of the bottomland in the reservoir area is under cultivation. There are several residences very near the proposed storage area at this elevation, and several outbuildings are in the pool area. Illinois Route 17 west from Toulon appears to be above the water line. Two north-south highways south of Toulon and an east-west two-lane oiled township road cross the reservoir area and would have to be abandoned. Local power and telephone lines are the only known utilities. The stream bed and floodplain are composed of sand and silt. The slope of the east valley wall is moderate and that of the west valley wall is very gentle. Both valley walls are composed of pinkish tan till overlain by tan silt containing some clay. No bedrock is exposed at the dam site but silty sandstone and shale formations crop out not far from the dam site and may underlie the valley at a shallow depth. Suitable material for the construction of an earth dam is available. There could be a problem of some shallow waters in the headwaters. The dam site is probably feasible, subject to verification by test borings. This site should make a good reservoir at a moderately high project cost.

TAZEWELL COUNTY

Two great ice sheets covered Tazewell County during the glacial period. The Illinoian leveled ridges and filled the valleys with a deposit of debris known as drift. The Wisconsinan glacier covered the eastern four-fifths of Tazewell County, depositing drift material to a depth of 100 feet or more. The Shelbyville moraine constitutes the western limit of glaciation. The Bloomington moraine crosses the northeastern part of the county and joins the Shelbyville moraine where they cross the Illinois River. Loessial material deposited on the Wisconsinan drift forms the soil of the uplands. The southwestern part of the county, west of the terminal moraine, is a large gravel terrace, evidently deposited by the flooded Mackinaw and Illinois Rivers.

The entire county lies in the Illinois River Basin and is drained largely through Farm Creek and the Mackinaw River. Small portions in the southeast are drained by Sugar Creek into the Sangamon River.

The bedrock surface in Tazewell County consists entirely of Pennsylvanian strata composed of layers of shale, limestone, siltstone, coal, and locally developed sandstones. The bedrock surface in the southern half of the county is covered with over 200 feet of permeable sand and gravel.

The flat lowlands in the southwestern third of the county are not suitable for reservoir development; however, small sites are available in the remainder of the county. The results of seven feasibility studies follow.

Site 4. A dam on a tributary of Mud Creek would create a 2-mile long reservoir about 4 miles northeast of Tremont. The tributary drains part of the front slope of the Bloomington moraine. The reservoir area is half pasture and half brush with light timber. Two two-lane blacktop roads crossing the reservoir area would have to be raised or abandoned. The Pennsylvania Railroad crosses the headwaters on a timber trestle and might need slight protection but no grade change. The New York Central Railroad has two concrete arches that appear adequate although the fill might need some stabilization. The upland areas have relief of about 10 to 20 feet. The stream flows in a 6-foot notch on a narrow flat floodplain. The steep sloped abutments are composed of till overlain with loess. Fifteen to 20 feet of chocolate-brown till is exposed on the left abutment. The valley walls are moderately steep and consist of 5 to 6 feet of buff colored loess overlying 1 or 2 feet of sand and gravel which is underlain by till. Material suitable for the construction of an earth dam is available in the nearby till abutments and valley walls. Acquisition, relocation, and protection costs would tend to make this site a moderately high cost project.

Site 5. A dam across Alloway Creek 3.5 miles northeast of Mackinaw would create an attractive reservoir

about 1.5 miles long. Light timber surrounds most of the lake and extends down the valley walls to the floodplain. About half of the floodplain area is in row crop development and the remainder in brush and light timber. A gravel road across the upper reaches could be raised and a road near the dam site placed over the structure. No residences would be directly involved, but one may have to be acquired for shoreline control. The valley system displays a moderately well developed dendritic pattern and is deeply entrenched into the loess-covered front slope of the Bloomington moraine. The lake site is located over an ancient bedrock valley and may be underlain by as much as 400 feet of glacial material. The abutments have steep slopes and consist of 4 to 6 feet of loess over chocolate-brown clayey till. Fifteen to 25 feet of coarse sand and gravel are exposed in a projection on the right abutment. The extent of this material might be sufficient to cause an upstream relocation of the dam site. Sufficient clayey till should be available for construction of an earth dam. The site is considered probably feasible geologically, pending a complete program of test borings and materials testing.

Site 6. A dam across a small tributary of Lost Creek would create a fairly deep reservoir 1.75 miles long. This lake would be located 4 miles southeast of Pekin and would be easily accessible by Illinois Route 9. The reservoir area is predominantly pasture but has a small portion in clean tilled crops. A township road that parallels the eastern shore of the site would have to be raised in two locations. No residences would be involved in the development, but two high tension lines crossing the upper third of the site might need protection. Logs of previous borings indicate that 100 to 120 feet of glacial drift, primarily till, overlies bedrock in this area and is capped by about 10 feet of loess. The stream flows in a 6- to 8-foot notch composed of silt and sandy alluvium. The abutments have moderate slopes and are covered by vegetation and loess that drape over the valley sides hiding the underlying till. Weathered loess and possibly the underlying till would be suitable for construction of an earth dam. The site is considered probably feasible, subject to verification by an adequate program of test borings and materials testing. This site should result in a good reservoir at a moderate project cost.

Site 7. A dam across Lost Creek, 5 miles southeast of Pekin, would create a deep lake about 2 miles long. Lost Creek, a tributary of the Illinois River, drains a portion of the bluffs along the eastern slope of the Illinois River Valley. The reservoir area is primarily open land under cultivation. Brush and timber cover most of the valley walls providing good potential for recreational facilities. A farm residence with its associated outbuildings and

the township road on which it is located would be inundated. Illinois Route 9 would provide good access to this site from Pekin. Logs of previous borings indicate that the glacial material, primarily till, is as much as 175 feet deep. The stream channel is about 4 feet deep and is composed of sand and silt. Both abutments have moderately steep slopes and are composed of silty till, 20 to 25 feet thick, mantled by 15 feet of loess. The dam would be founded on glacial till and constructed of similar material. The site is considered probably feasible, pending verification by an adequate program of test borings and materials testing. This site should develop at a moderately high project cost.

Site 8. A dam across Dillon Creek, about 2 miles upstream from its confluence with the Mackinaw River, would create a reservoir about 3 miles long. Dillon Creek drains part of the front slope of the Shelbyville-LeRoy moraine. Three two-lane blacktop road crossings and one farm residence would be inundated. Cover in the lake area includes clean tilled cultivation in the bottomlands and pasture with brush and light timber on the valley walls. Shallow water in the upper reaches and residences near the proposed shoreline could create a problem. Logs of a previous boring in this area indicate that coarse gravel is overlain by 100 feet of fine sand overlain by 50 to 60 feet of blue clay, probably till, capped by 10 feet of loess. Elevation of the layer of fine sand in the lake bed must be determined to establish the degree of probable leakage from the reservoir. Till observed in the valley walls would be available for construction of an earth dam and for blanketing if the underlying sands are exposed. The site is considered probably feasible

geologically, pending verification by an adequate program of test borings and materials testing. Road relocations and land values would make this site a moderately high cost project.

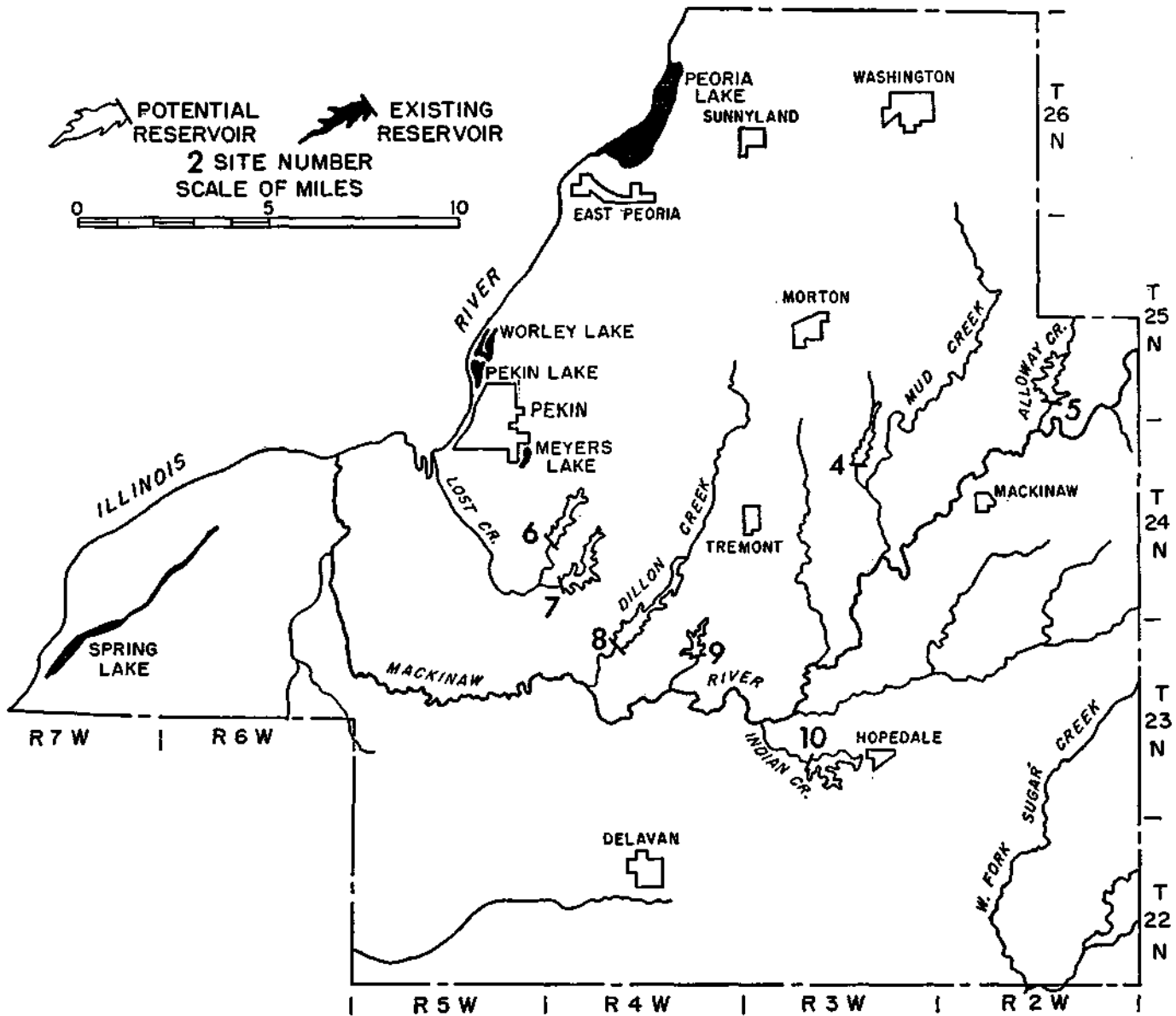
Site 9. A small reservoir could be developed on an intermittent tributary of the Mackinaw River 1 mile southeast of Dillon. Severe sheet and gully erosion in the watershed of this site could make the sedimentation rate higher than what might be considered normal. Cover in the reservoir area consists of pasture with scattered timber and brush. Good township roads give access to the site. No roads nor residences would be inundated. The stream drains a part of the Shelbyville-LeRoy moraine east of Dillon where upland relief of 20 to 30 feet is common. Previous borings indicate that 240 feet of drift, primarily till, overlies the bedrock surface. There is a possibility that porous sand and gravel form the lower portions of the drift. If these deposits are exposed in the lake bed or dam excavation, special methods such as blanketing with till would have to be used. Sufficient till for construction of an earth dam should be readily available. The site is considered probably feasible, pending verification by a complete geologic investigation. This site should result in a low cost project.

Site 10. A narrow winding reservoir could be developed by construction of a dam on Indian Creek 2 miles west of Hopedale. The lake would have three branches creating a relatively long shoreline. No roads would be inundated. Illinois Route 122 is adjacent to the site on the north, Illinois Route 121 is very close to the dam site and westernmost branch, and a township road lies along

Potential Reservoirs in Tazewell County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
4	Trib. Mud Creek Ctr. N ½ 10-24N-3W (Mackinaw Quad)	650	173	2,305	800	9.0	1.7	40	500	119	5	3.60	3.1	2.1	1.7	1.4	1.7	1.3	0.9	0.8
5	Alloway Creek SE ¼ NW ¼ 34-25N-2W (Mackinaw Quad)	650	282	4,230	1,400	12.3	1.3	45	1,000	310	10	4.92	4.8	3.5	2.7	2.5	2.9	2.1	1.5	1.3
6	Trib. Lost Creek SW ¼ SW ¼ 19-24N-4W (Peoria Quad)	600	166	1,990	600	3.3	0.7	36	800	172	5	1.32	1.2	1.1	1.0	0.9	1.2	0.7	0.5	0.4
7	Lost Creek SE ¼ SW ¼ 30-24N-4W (Delavan Quad)	600	390	7,410	2,400	6.8	0.4	57	900	395	9	2.72	2.5	2.4	2.6	2.5	2.5	2.2	1.9	1.6
8	Dillon Creek NW ¼ SW ¼ 4-23N-4W (Delavan Quad)	590	416	7,345	2,400	34.3	2.1	53	650	271	13	13.72	10.5	7.5	5.8	5.0	6.1	5.0	3.4	3.0
9	Trib. Mackinaw River SE ¼ SW ¼ 2-23N-4W (Delavan Quad)	590	96	1,345	400	3.4	1.1	42	400	109	5	1.36	1.3	1.0	0.9	0.7	0.9	0.6	0.4	0.4
10	Indian Creek SW ¼ NW ¼ 28-23N-3W (Minier Quad)	610	192	2,750	900	11.0	1.8	43	800	225	10	4.40	3.7	2.6	2.0	1.7	2.0	1.7	1.1	1.0

TAZEWELL COUNTY



the southern extremity. Cover in the lake area consists of about two-thirds timber and the rest pasture. Shore-line control requirements might have to be relaxed in order to avoid acquisition of several residences along the state routes. Hopedale lies within the watershed area and could create a pollution problem. It might be necessary to pipe sewage effluent downstream. Logs of previous borings indicate that deep sands and gravels that could cause serious leakage are well sealed by overlying

clay and till. The abutments have moderate slopes and consist of till overlain by 8 to 10 feet of loess. The depth of alluvial sand and gravel was not determined but is not expected to be great. Material suitable for the construction of an earth dam is probably available in the underlying till. The site is considered probably feasible, subject to verification by an adequate program of test borings. This site should develop at a moderately high project cost.

Existing Reservoirs in Tazewell County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Spring Lake	26-25N-5W (Peoria Quad)	McGrath Sand & Gravel Co.					40.0				Gravel pit
Sewell Lake	20-30-24N-6W 2-3-9-10-24N-7W (Manito Quad)	State of Ill.									
Meyers Lake	1-12-24N-5W (Peoria Quad)	Lake Arlan Assn.					75.6				
Twin Lakes	29-25N-5W (Peoria Quad)						16.0				
Worley Lake	22-23-25N-5W (Peoria Quad)	Pekin Rod & Gun Cb.					240.0				
Pekin Lake	27-25N-5W (Peoria Quad)						133.0				
Tazewell Co. Farm	11-24N-4W (Peoria Quad)	Tazewell Co.		80	16	11	6.0	29	9.58		
Pleasure Lake	2-24N-5W (Peoria Quad)						12.0				Two lakes
Horseshoe Lake	26-24N-6W (Delavan Quad)	C. E. Van Ostrand					16.0				
Peoria Lake	3-10-11-13-22-23-27- 28-26N-4W (Peoria Quad)	Public					5,700.0				
Wesley Slough	6-25N-4W (Peoria Quad)						77.6				
Mineral Springs Park Lake	2-24N-5W (Peoria Quad)	Pekin					7.1				
Farm Creek Project	31-26N-3W (Peoria East Quad)	Corps of Engrs	26.5	16,960	80		385.0	11,300	3,680	8.0	Flood control Dry Lake
Mackinaw Valley Park Lake	19-24N-2W (Mackinaw Quad)						11.8				
Bastille							19.6				
Lucken Pond	30-25N-4W (Peoria Quad)		2.5	1,600			60.0				
West Lake							10.5				
Tazewell Co. Nursing Home Lake	(Peoria Quad)										
Lock Lohman Lake							7.0				
Briarwood Lake							8.0				
Caterpillar Pond	30-26N-4W (Peoria Quad)						9.6	60	19.5		Cat. Eng. Dept.
Minier Spts. Cb. Lake	16-22N-2W (Minier Quad)						6.0				
Slim Lake							73.8				
Kennel Lake	2-23N-3W (Mackinaw Quad)	Morton Spts Cb.					6.6				
Lake-of-the-Woods	27-25N-5W (Peoria Quad)						107.7				

VERMILION COUNTY

The bedrock surface in Vermilion County is of Pennsylvanian age and consists of shale underlain by limestone, siltstone, coal, and sandstone. Coal deposits have been extensively strip mined in the county. The most significant topographic features of the bedrock surface are the Danville bedrock valley which lies north to south through the center of the county and the Pesotum bedrock valley in the southwestern corner.

Although bedrock is exposed in a few areas, drift thicknesses vary from about 60 to 120 feet in the south and from 80 to 200 feet in the north. The drift is composed of material deposited by the Kansan, Illinoian, and Wisconsinan glaciers. Several morainal ridges occur in the county including two branches of the Champaign moraine that cross south of the Salt Fork, the outer Bloomington moraine across the center of the county, and the Paxton and Chatsworth moraines which lie across the northern portion of the county. Nearly all of the soils have been derived from glacial till, and wind-blown materials are almost negligible.

Drainage in the county is generally south and east by the Vermilion, Little Vermilion, Salt Fork, and North Fork Rivers.

The topography of Vermilion County is only moderately well suited to reservoir development. The results of seven feasibility studies follow.

Site 2. A large reservoir could be developed on the Salt Fork 2 miles south of Oakwood. The dam could be located about 3 miles downstream from the confluence with Stony Creek. The valley has steep walls and is irregular in both direction and shape. Silting in the shallow upper reaches should be expected and a reclamation program planned. Potential sites of this size are rare in this portion of the state. Development of the site would involve acquisition of at least six residences. A two-lane blacktop road would probably be relocated over the structure, two gravel roads could be raised, and four others abandoned. Interstate Route 74 and T.J. S. Route 150 provide good access to the area. The wider portions of the floodplain are under cultivation, but there is considerable timber in the narrows and on the valley walls. At the dam site the stream is bedded on a coarse limestone conglomerate overlain by 30 to 40 feet of sandstone, limestone, and siltstone overlain by 6 to 8 feet of weathered shale. Jointing is present in the more massive Pennsylvanian beds, but it is not a prominent feature. No leakage problems were evident either through the joint system or at the surface of the bedrock and glacial material contact. The unconsolidated overlay consists of an irregular thickness of clayey glacial till with loess covering the uplands and more gentle slopes. Sufficient quantities of till should be available on the nearby uplands for construction of the earth fill. The probable

existence of coal reserves in the area might be an economic as well as a geologic factor in the development of this site. A surficial examination indicates that the site is probably feasible geologically, subject to verification by a complete program of test borings and materials testing. This site should develop at a high project cost.

Site 6. A small deep reservoir could be developed on a tributary of North Fork Vermilion River with the dam located about 0.25 mile north of the Danville Country Club. No roads nor residences would be involved. The reservoir area is idle and has brush and timber throughout. Normal backwater from Lake Vermilion reaches within 0.25 mile of the dam site. Logs of previous borings in this area indicate that the bedrock surface lies 50 to 60 feet below the level of the creek, and that the intermediate material is primarily clayey glacial till. The valley walls are composed of a silty till. The depth of sandy alluvium was not determined but is not expected to be excessive. Geologic conditions appear favorable; however, the existence of coal reserves in this area might be an economic factor in the final determination of feasibility. This site should result in a moderate project cost.

Site 8. A potential reservoir site exists on Yankee Branch about 4 miles southeast of Georgetown. The lake would have two branches, each about 1 mile long. The watershed drains very gently rolling uplands on the back slope of the Champaign moraine, and contains a narrow moderately steep walled valley with little or no floodplain development. Township roads and several residences lie very close to the proposed lake level in three different locations. A slight reduction in spillway elevation would alleviate relocation problems. Cover in the lake area consists of pasture with scattered timber. No serious geologic problems were encountered during a surficial geologic investigation. The abutments appear to be composed of silty clayey till over Pennsylvanian bedrock which is exposed at stream level. Logs of previous borings indicate a pervious zone of sands and gravel at the till-bedrock contact, but this was not apparent at the dam site. The local glacial till occurs in sufficient quantity for construction of an earth dam. This site should develop at a low project cost.

Site 9. A small potential lake site exists on a tributary of the Little Vermilion River 2 miles west of Olivet. No roads nor residences would be involved. The lower half of the lake area is in pasture with scattered timber, and the remainder is in heavy timber. The watershed reaches the city of Ridge Farm, has gently rolling uplands, and includes a moderately steep walled valley with a flat narrow floodplain. A surficial examination indicates that geologic conditions are favorable. The bedrock surface

is believed to be very close to creek bed level. The abutments and valley walls are composed of a silty clayey till which would provide adequate borrow for construction of an earth dam. The depth and nature of the alluvium and permeability of the bedrock-till contact would have to be explored by future borings. This site should develop at a low project cost.

Site 10. A small reservoir could be developed on Dillon Branch about 2.5 miles southeast of Sidell. The watershed includes a portion of the backslope of the middle

Champaign moraine, although the valley is entrenched in nearly level till plain. The reservoir area near the dam is in brush and the remainder is in brush and timber. No roads nor residences would be involved in the development, although one residence on a road just below the dam site might have to be acquired. Preliminary examination indicates that geologic conditions are favorable. Future borings would be required to determine foundation conditions, best source of borrow, and permeability of the bedrock-till contact. The abutments are composed

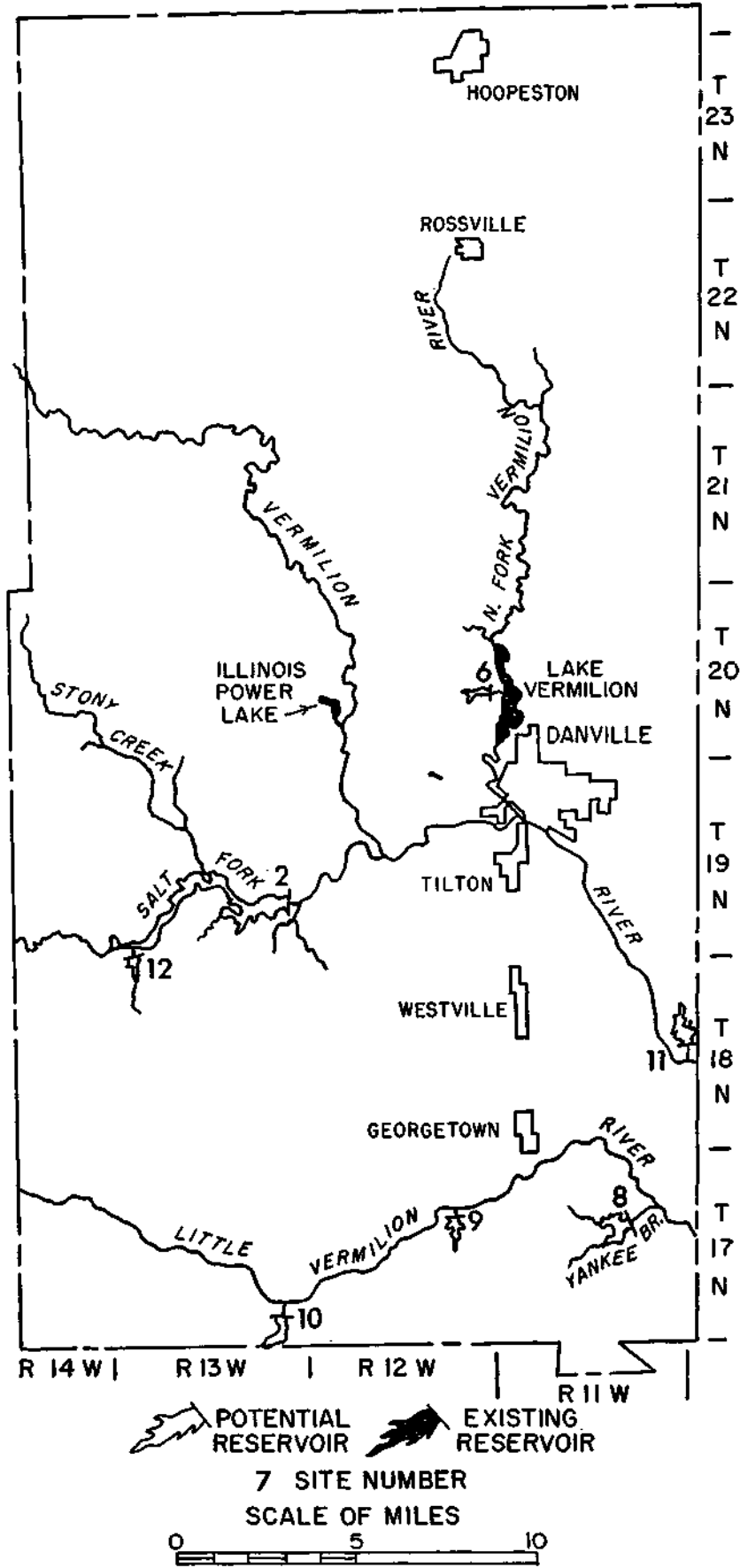
Potential Reservoirs in Vermilion County

Site	Waterway location	Spill-way elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
2	Salt Fork SE 1/4 NW 1/4 25-19N-13W (Fithian Quad)	620	2,500	42,500	13,900	500.0	6.0	51	850	316	42	236.10	84.7	71.7	56.3	48.7	52.6	41.3	31.7	27.4
6	Trib. N. Fk. Vermilion River NE 1/4 SW 1/4 19-20N-11W (Danville NW Quad)	630	58	890	300	2.4	1.4	46	850	242	3	1.12	1.1	0.8	0.6	0.5	0.6	0.5	0.3	0.2
8	Yankee Branch NW 1/4 NW 1/4 14-17N-11W (Ridge Farm Quad)	640	262	3,668	1,200	10.6	1.5	42	850	248	9	4.97	4.7	3.2	2.4	2.2	2.5	1.9	1.4	1.2
9	Trib. Little Vermilion River Ctr. SE 1/4 11-17N-12W (Ridge Farm Quad)	640	77	540	200	4.0	3.9	21	450	50	3	1.87	0.8	0.7	0.5	0.4	0.4	0.3	0.2	0.2
10	Dillon Branch NW 1/4 NW 1/4 36-17N-13W (Newman Quad)	680	58	540	200	2.5	2.4	28	350	48	3	1.17	0.8	0.6	0.4	0.4	0.4	0.3	0.2	0.2
11	White Branch NW 1/4 SW 1/4 18-18N-10W (Danville SE Quad)	580	83	1,190	400	2.4	1.0	43	850	249	6	1.14	1.0	0.9	0.7	0.6	0.8	0.5	0.4	0.3
12	Trib. Salt Fork SW 1/4 NE 1/4 31-19N-13W (Fithian Quad)	640	55	623	200	2.3	1.9	34	600	119	2	1.08	0.8	0.6	0.5	0.4	0.4	0.4	0.2	0.2

Existing Reservoirs in Vermilion County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Vermilion	18-19-30-31-20N-12W, 20-29-20N-11W (Danville Quad)	Interstate Water Co.	267.0	170,000			617.0				
Shangri-La Lake	16-19N-14W (Fithian Quad)	Shangri-La Cb.					42.2				
Incline Lake	17-17N-13W (Danville Quad)	State of Ill.					11.4				
Ill. Power Co. Lake	29-20N-12W (Danville Quad)	Ill. Power Co.	1.4	900			55.0				
Fairview Spts. Cb.	2-19N-12W (Danville Quad)	Fairview Collieries					20.0				
Georgetown Spts. Cb.	12-17N-11W (Ridge Farm Quad)	Georgetown Water Co.	27.0	17,280			35.0				
Clear Lake	5-19N-12W (Danville Quad)	State of Ill.					22.5				Kickapoo
Long Lake	5-19N-12W (Danville Quad)	State of Ill.					29.7				Kickapoo
Inland Sea	5-19N-12W (Danville Quad)	State of Ill.					11.7				Kickapoo
Highway Pond	17-19N-12W (Danville Quad)	State of Ill.					16.1				Kickapoo
High Lake	17-19N-12W (Danville Quad)	State of Ill.					8.6				Kickapoo
Donut Lake	17-19N-12W (Danville Quad)	State of Ill.					6.1				Kickapoo
Kickapoo #6 Pond	17-19N-12W (Danville Quad)	State of Ill.					11.2				Kickapoo
Pollywog Lakes	16-19N-14W (Fithian Quad)	Pollywog Assn.					10.0				
Fairmount Club	2-18N-13W (Fithian Quad)	Material Service Corp.					21.0				

VERMILION COUNTY



of till, but it is silty and sandy and might require special placement techniques if used in the earth fill. This site should result in a low cost project.

Site 11. A small deep reservoir site exists on White Branch near the Indiana border. The watershed borders the Vermilion River bluffs and drains rolling uplands behind the Champaign moraine. The valley is about 60 feet deep with steep walls and a narrow flat floodplain. Cover in the lake area consists of pasture with scattered timber on the bottoms and timber on the valley walls. The steep gradient of the stream would require a rather high dam to achieve sufficient storage. No roads nor residences would be involved in the site. Geologic conditions appear to be favorable for reservoir development in this area. The dam would probably be founded on thin bedded silty Pennsylvanian shales which are visible in the lower 20 feet of the right abutment. The shale is overlain by clayey glacial till with some evidence of a spring line at the contact of these materials. This would probably not create serious leakage in the reservoir area but should be cut off at the dam site. The

glacial till in the area should provide adequate borrow for construction of an earth dam. This site should develop at a low project cost.

Site 12. A small lake could be developed on an intermittent tributary of the Salt Fork River about 2 miles northwest of Fairmount. The watershed exhibits rolling to nearly flat uplands and a deeply entrenched V-shaped valley. One residence near the right abutment might have to be acquired. One township road parallels the site and would provide good access. Cover in the lake area is mostly scattered timber. Known coal reserves in this area might be an economic factor in this development. Geologic conditions appear to be favorable. The stream bed and the lower abutments are composed of thin bedded siltstone, limestone, and shale. Jointing is present in the more massive sections of the bedrock but is not a prominent feature. The bedrock is overlain by glacial till which would be suitable and occurs in sufficient quantity for the earth fill. This site should result in a low cost project.

WARREN COUNTY

Warren County was completely covered by the Nebraskan, Kansan, and Illinoian glaciers. The tremendous forces exerted by these glaciers gouged out basins, leveled hills, and filled valleys. The Illinoian glacier left a broad, relatively level till plain which subsequently eroded leaving the present surface topography. The Wisconsinan glacier did not reach Warren County, but immense quantities of meltwater carried clay, silt, sand, and often gravel over the flat lands and down the stream channels. Much of the silt was deposited on the broad bottomlands of the Illinois and Mississippi Rivers, picked up by the wind, and blown onto the uplands burying the weathered till and forming a new deposit of uniformly textured material called loess. The loess varies in thickness from 12 feet in the northwest to about 9 feet in the southeast. Leached Illinoian till is exposed on slopes where erosion has been active. Much of the northwestern and southeastern portions of Warren County are so strongly dissected that little of the original flat plain remains.

The northwestern portion of the county drains to the west through Henderson and Cedar Creeks. The southeastern portion is drained by Cedar and Swan Creeks and their tributaries. The flat land areas in the central and southwestern portion are provided with artificial drainage for the removal of excess water.

The bedrock surface of Warren County is composed of two distinct series of rock. Mississippian formations consisting of deep limestone form the surface in the bedrock

valleys of the northwestern quarter of the county. The remainder of the county is overlain by Pennsylvanian formations that consist of layers of shale, limestone, coal, and locally developed sandstones.

The topography of the central portion of Warren County has too little relief for the development of reservoir sites; however, sites are available in both the northern and the southern portions. The results of 11 feasibility studies follow.

Site 1. A potential reservoir site is available on Johns Creek about 6 miles northwest of Monmouth. Cover in the reservoir area consists of about half timber and half pasture. The 4 by 1 mile watershed is divided by two drainageways of about equal development. No residences would be involved, but one dirt township road would be inundated. Excellent access to the site is provided by east-west roads from Illinois Route 135. The site is classified as possibly feasible geologically, but future borings would be required to explore the limestone that crops out in the vicinity of the dam. Suitable material for a dam might have to be transported a short distance from the eastern uplands. This site should develop at a low project cost.

Site 2. A potential reservoir site is available on Davids Creek about 5 miles northwest of Monmouth. The lake area cover consists of about half timber and half pasture.

Township roads surrounding the site provide excellent access but would have to be raised in two locations. Mississippian age limestone forms the lower part of the valley walls and is overlain in the floodplain area by sand, silt, and some limestone rubble. The upper portion of the valley walls consists of till overlain by loess and would provide an excellent material for earth dam construction. The dam site is classified as possibly feasible, pending future test borings to determine the nature and possible presence of solution channels in the limestone bedrock. This site should result in a low cost project.

Site 3. A potential reservoir site is available on a tributary of Cedar Creek 2 miles north and a mile west of Monmouth. The western half of the city of Monmouth lies within the 5 by 1.5 mile watershed and could provide drainage and pollution problems. About a third of the lake area is free from timber and in pasture. One east-west dirt road crossing the site could be abandoned. East-west township roads from U. S. Route 67 would provide access to the site. Limestone of Mississippian age forms the lower portion of the valley walls and is overlain in the floodplain by an unknown depth of silt, sand, and clay with minor amounts of rock and gravel. The site is classified as probably feasible, pending future test borings to determine the depth to and possible presence of solution channels in the limestone. This site should develop at a low project cost.

Site 4. A potential reservoir site is available on Talbot Creek about 4 miles northeast of Monmouth. Most of the lake area is in grassland but there is some light timber along the stream banks and valley walls. Two north-south gravel roads crossing the site could be abandoned and a third road raised. The parallel road system would give excellent access to the site. Land acquisitions and road relocations do not appear to present any serious problems. Pennsylvanian limestone overlying Mississippian limestone forms the lower part of the valley walls, and is overlain by an unknown depth of silt and sand in the floodplain area. The upper portion of the valley walls and uplands is silty but would provide suitable material for an earth dam. The site is classified as probably feasible, but extensive test borings would be required to determine the nature of bedrock. This site should result in a low cost project.

Site 5. A many-fingered reservoir could be developed on a tributary of Henderson Creek about 6 miles northwest of Galesburg. The watershed is compact, well drained, and about 3 miles in diameter. The lake area is in pasture, scattered timber in the lower reaches, and heavy brush and timber in the upper reaches. No residences would be involved in the development. A four-way gravel intersection and a north-south gravel road would have to be raised. The valley is V-shaped at the

dam site, and is composed of silty till with minor amounts of gravel. The dam site is considered geologically feasible, and suitable material for construction of an earth dam is available. This site should result in a good reservoir at a moderate project cost.

Site 6. A reservoir could be developed on Cedar Fork about 3 miles northwest of Abingdon on the Warren-Knox County line. The reservoir area is in pasture and the stream banks and valley walls in light timber. No residences would be involved but an east-west township road would have to be relocated across the structure. The valley walls are composed of till containing a minor amount of gravel and pebbles overlain by loessial silt, and the alluvial plain is composed of silt. The dam site is considered probably feasible geologically.

Site 9. A large reservoir could be created by construction of a dam on Cedar Creek about 8 miles south and 5 miles east of Monmouth. The floodplain is in pasture with some scattered timber, and the fingers and valley walls are in timber. The lake has several well developed fingers providing a relatively long shoreline with good hardwoods in many of the areas for recreational development. Township roads would be inundated in five locations. One residence would have to be acquired and another would need a new access road. This site is classified as probably feasible geologically. Although no bedrock is exposed in the lake area, Pennsylvanian age limestone is known to underlie the valley bottom and may comprise the lower part of the valley walls. The valley walls and uplands are composed of till providing an excellent source of material for construction of an earth dam. This site should result in a good recreational development at a moderate project cost.

Site 11. A large reservoir could be developed on Swan Creek with the dam located 1 mile northwest of Avon. The watershed is too large for the estimated capacity of this site. An increase in water surface elevation, which is limited by very gentle slopes on the northern shore, would be an improvement. Three residences and a large pond would be inundated, and several other residences and a cemetery would require new access roads. A two-lane blacktop road would have to be raised and three gravel roads either relocated or abandoned. The lake area is under row crop production. There are a few timbered areas on the surrounding uplands that would make good recreational developments. Pennsylvanian age bedrock forms the core of the abutments and underlies the floodplain at an undetermined depth. The rock is overlain by glacial till overlain by loess on the uplands and higher gentler slopes. A sufficient quantity of till is probably available from nearby deposits to provide borrow for the earth dam. A complete program of test borings and materials testing would be required to determine

foundation conditions, best source of borrow, and the depth and nature of the alluvium. This site should develop at a high project cost.

Site 12. A good reservoir site is available on Little Swan Creek about 9 miles southeast of Roseville. Two dirt township roads crossing the site could be abandoned.

No residences nor other obstructions would be involved in the development. Half of the lake area is under cultivation, and the remainder is in brush and pasture with scattered timber. Strata of Pennsylvanian age underlie the lake area at an unknown depth. The floodplain consists of sand and silt, and the valley walls are till overlain by loessial silt. Material suitable for an earth dam is

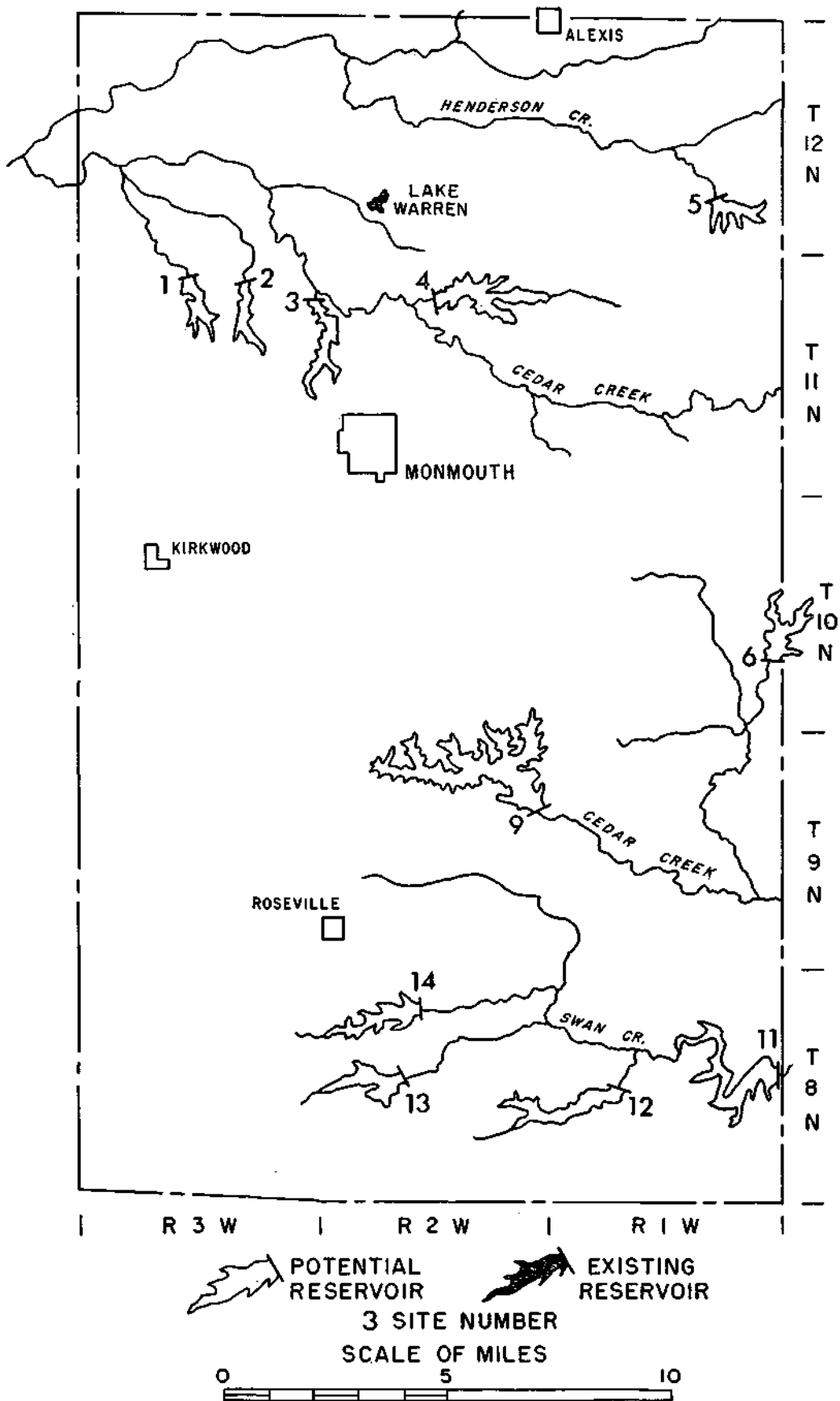
Potential Reservoirs in Warren County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual run-off (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
1	Johns Creek NW ¼ SE¼ 4-11N-3W (Monmouth Quad)	700	179	3,161	1,000	5.3	0.8	53	550	202	9	2.15	2.1	2.0	1.8	1.7	2.0	1.5	1.3	1.1
2	Davids Creek SW ¼ SW ¼ 2-11N-3W (Monmouth Quad)	700	160	2,026	700	8.5	1.9	38	700	160	7	3.45	3.1	2.3	1.9	1.8	2.0	1.6	1.1	1.1
3	Trib. Cedar Creek NE ¼ SW ¼ 7-11N-2W (Monmouth Quad)	680	102	1,462	500	6.3	1.9	43	700	196	5	2.56	2.3	1.7	1.4	1.3	1.5	1.2	0.9	0.8
4	Talbot Creek NE ¼ NE ¼ 9-11N-2W (Monmouth Quad)	700	493	7,395	2,400	13.7	0.8	45	750	217	11	5.56	5.3	4.9	4.4	4.2	5.0	3.6	3.3	2.7
5	Trib. Henderson Creek N ¼ SW ¼ 26-12N-1W (Galesburg Quad)	720	224	3,732	1,200	4.6	0.5	50	450	146	8	1.71	1.5	1.5	1.5	1.5	1.5	1.2	1.1	1.0
6	Cedar Fork NW ¼ NE ¼ 25-10N-1W (Galesburg Quad)	680	243	2,590	800	11.4	1.9	32	700	127	9	4.36	3.9	2.7	2.2	2.0	2.2	1.8	1.2	1.1
9	Cedar Creek S line 12-9N-2W (Monmouth Quad)	690	1,146	19,482	6,300	31.5	0.7	51	1,200	441	38	12.06	11.5	11.2	10.4	9.8	11.4	7.9	7.5	6.0
11	Swan Creek SE ¼ SE ¼ 13-8N-1W (Avon Quad)	610	954	13,356	4,400	102.3	3.3	42	900	239	18	39.16	24.3	19.3	14.5	13.6	14.0	11.3	9.2	8.6
12	Little Swan Creek NE ¼ NE ¼ 20-8N-1W (Good Hope Quad)	660	390	5,460	1,800	8.5	0.7	42	900	250	11	3.25	3.0	2.9	2.8	2.6	3.0	2.2	2.0	1.5
13	Swan Creek SE ¼ SW ¼ 16-8N-2W (Good Hope Quad)	720	243	3,645	1,200	12.1	1.4	45	700	213	9	4.63	4.5	3.4	3.0	2.7	2.9	2.2	1.6	1.5
14	Big Nigger Creek SE ¼ NW ¼ 9-8N-2W (Good Hope Quad)	720	205	2,323	800	9.6	1.8	34	900	185	9	3.68	3.3	2.4	1.9	1.8	1.9	1.6	1.1	0.9

Existing Reservoirs in Warren County

Reservoir name	Legal description	Owner	Watershed area		Height of dam (ft)	Depth of water at dam (ft)	Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)				(ac-ft)	(mg)	(in)	
Lake Warren	29-12N-2W (Alexis Quad)	Hickory Grove Lake Co.	0.62	400	25.0	20	70.0				Soil Cons. Serv.
Monmouth Citizens Lake	30-11N-2W (Monmouth Quad)	Citizens Lake Assn.	0.78	500	20.0	15	12.6				Soil Cons. Serv.
CB&Q Monmouth Pond	30-11N-2W (Monmouth Quad)						8.5				Soil Cons. Serv.
Clyde Young Lake	6-10N-3W (Oquawka Quad)	Izaak Walton League	1.00	640	25.0	17	10.5				Soil Cons. Serv.
CB&Q Kirkwood Pond	18-10N-3W (Oquawka Quad)	Kendall Gibson	1.22	780	19.0	10	13.8	55.9			Soil Cons. Serv.
Glenn & Mabel Glass Lake	22-12N-1W (Woodhull Quad)	Glenn & Mabel Glass	0.31	200	12.0	9	10.0				Soil Cons. Serv.
Izaak Walton Lake	6-10N-3W (Oquawka Quad)										
Mrs. Herbert Wilkins Lake	16-8N-1W (Good Hope Quad)	Mrs. H. Wilkins	0.33	214	20.0	14	4.9	34.4	11.2	1.95	Soil Cons. Serv.
	30-9N-1W (Good Hope Quad)	Morton & C. Pratt	0.12	80	21.6	16	7.8	47.1	15.3	7.36	
	14-8N-1W (Avon Quad)	H. Wilkins	0.36	230	23.5	17	8.5	44.8	14.6	2.33	
Clyde Lang Lake	9-8N-3W (Good Hope Quad)	Emma Lang	0.47	300	16.1	12	5.3	18.0	5.9	0.72	
Lec Thompson Lake	20-12N-2W (Alexis Quad)	L. Thompson Est.	0.39	250	21.1	15	5.2	29.1	9.5	1.40	

WARREN COUNTY



available. The site is considered probably feasible geologically, and should result in a low cost project.

Site 13. A reservoir could be developed on the upper reaches of Swan Creek about a mile northeast of the town of Swan Creek. The lake area is in timber with patches of pasture. Two north-south township roads cross the site; one road is dirt and could be abandoned and the other could be raised. The Chicago, Burlington, and Quincy Railroad crossing a finger of the site would be unaffected. Strata of Pennsylvanian age are overlain in the floodplain area by an unknown depth of silt and rocks up to cobble size. Suitable material for an earth dam is available from the valley walls which are composed of till with a considerable amount of gravel in the

uplands. The site is considered possibly feasible geologically. This site should result in a moderate cost project.

Site 14. A potential reservoir site is available on Big Nigger Creek about 3 miles southeast of Roseville. The Chicago, Burlington, and Quincy Railroad crossing a finger of the site does not appear to present a problem. One dirt township road crossing the site could easily be abandoned. Most of the lake area is in scattered timber. The valley walls are till overlain by 15 feet or more of loessial silt in the uplands and underlain by Pennsylvanian age bedrock. The floodplain consists primarily of sand and silt to an unknown depth. The site is classified as probably feasible geologically, and suitable material for an earth dam is available. This site should develop at a moderately low project cost.

WOODFORD COUNTY

The Illinoian and Wisconsinan glaciers completely covered Woodford County. The Illinoian had an important role in leveling the preglacial hills and filling the preglacial valleys. Till depths of 125 to 150 feet over most of the county have been recorded by well borings. The glacial debris deposited by the Illinoian was buried by till of the more recent Wisconsinan ice sheet. Still later the western and southern portions of the county were covered by loess. The depth and extent of loess can be correlated to the width of the Illinois River. The eastward extension of the loess in the southern part of the county can be associated with the Mackinaw River bottom and the extensive terraces in southern Tazewell and northern Mason Counties. Erosion accounts for the rolling topography and the steep slopes near the Illinois River bluff and along the Mackinaw River channel.

The western fourth of the county drains directly to the Illinois River, and a small portion in the north drains to the Vermilion River. Most of the county is drained to the southwest by the Mackinaw River and its tributaries.

The topography of Woodford County is generally favorable for reservoir development, but deep sand deposits in the western half of the county eliminate many otherwise good sites. The results of 12 feasibility studies follow.

Site 4. This site is typical of several available sites originally studied in northwestern Woodford County. This portion of the county is underlain by the deep bedrock valley of the ancient Mississippi River and is filled with Sankoty sand and gravel to about 520 feet mean sea level (msl). The Sankoty sand and gravel deposit is overlain by glacial till with some intercalated lenses and layers of pervious material. Since the bottom of this

reservoir would be at elevation 480 msl, it would be almost impossible to effectively seal off excessive leakage through the highly permeable Sankoty layer. This site and others in the area are considered probably not feasible geologically.

The dam at *site 4* would be located on Partridge Creek about 6 miles northwest of Metamora. A rather long dam would be required to span the wide flat floodplain and join the steep abutments. The top 40 feet of the abutments is till which would provide borrow for construction of an earth dam, but the lower 30 to 40 feet is sand and gravel. Two township roads crossing the site and five residences with associated outbuildings would have to be acquired. Parallel township roads would provide a good access road system. The watershed consists of a well developed dendritic system entrenched into the Normal moraine. If leakage were not a problem, this would be a moderately high cost development.

Site 6. A dam across the upper reaches of Partridge Creek would create a small reservoir about 3 miles northwest of Metamora. No roads nor residences would be involved in the development. Cover in the site is about a third under cultivation and the rest in light timber and brush. The watershed consists of rolling uplands incised by a well developed dendritic pattern of valleys. Good access to the site is provided by a township road that parallels the site on the northeast. Geologic conditions are similar to those discussed in *site 4*, but there is a layer of till between the lake bed bottom and the Sankoty sand at this location. Although this site is considered probably not feasible geologically, there is a good possibility that leakage could be controlled. A program of test borings would be required to establish the perme-

ability of the till layer. Sufficient till should be available for use as borrow for construction of an earth dam. This site should develop at a moderate project cost.

Site 7. A two-fingered reservoir could be developed on a tributary of Panther Creek 4 miles southeast of Benson. The valley walls slope gently from the creek banks to the uplands. The entire area is free from timber, and is under cultivation or in pasture. An all-weather township road would have to be raised in two locations, and a farm residence with associated out-buildings would have to be acquired. The watershed covers a portion of the front slope of the outer Cropsey moraine and consists of gently rolling loess-covered cultivated fields. Logs of previous borings indicate that the uplands are underlain by till, and that the stream valleys are underlain by varying depths of porous sand and gravel. Exposures of sand and gravel during excavation and in the lake bed should be blanketed with clay or clay till. Sufficient material for construction of an earth dam should be readily available from till deposits in the valley walls. The site is considered probably feasible, pending an adequate program of test borings and materials testing. This site should develop at a moderate project cost.

Site 8. A reservoir could be developed on the West Branch Panther Creek. The water surface would reach upstream to within 0.5 mile of Roanoke, but the dam would be located about 5 miles to the southeast. A two-lane blacktop road crosses the site in two locations, and gravel roads cross in seven locations. A steel tower transmission line would probably need improvement. Three farm residences would be inundated, and as many as 10 residences might have to be acquired to control the shoreline. Cover in the site consists mainly of pasture containing scattered timber. The watershed consists of a portion of the gently rolling front slope of the Cropsey moraine. Logs of previous borings indicate that 10 feet of loess is underlain by at least 100 feet of glacial material, primarily till. The abutments have moderate slopes and consist of gravelly clay till mantled by 2 to 4 feet of loess. The floodplain is broad and flat and is developed in alluvial silt of undetermined depth. The nearby till seems to be suitable for construction of an earth dam. The site is considered probably feasible geologically, pending adequate test borings and materials testing. This site should result in a high project cost.

Site 11. A large reservoir could be developed on Walnut Creek by construction of a dam about 5 miles south-southeast of Eureka. The Toledo, Peoria, and Western Railroad fill and the Eureka Reservoir dam would both be in backwater and would require stabilization. U. S. Route 24 and Illinois Route 117 would have to be raised, and improvement or abandonment of township roads in

seven locations would be required. A steel tower transmission line and many local utilities also cross the site. Three residences and the Eureka water plant would be inundated, and several residences near the shoreline would have to be acquired. Although there are some timbered areas on the valley walls, the floodplain is under cultivation. Part of the Walnut Creek watershed lies on the front slope of the Normal moraine and the rest on the gently rolling Bloomington till plain. Previous borings near Eureka indicate that glacial material, primarily till, overlies the bedrock surface and that about 10 feet of loess caps the uplands. The stream flows in a 5-foot notch of floodplain alluvium of undetermined depth. The floodplain is broad and flat, although old stream meanderings have formed steep sides and terraces. The abutments have steep slopes composed of medium brown silty till capped by 4 to 6 feet of loess. The till available from the valley walls should provide an adequate source of borrow for construction of an earth dam. The site is considered probably feasible, pending verification by test borings and materials testings. This site should develop at a moderately high project cost.

Site 12. A major reservoir could be developed by constructing a dam at the confluence of Panther Creek and Mackinaw River about 6 miles southeast of Eureka. The Panther Creek branch would extend some 12 miles to the northeast reaching within 4 miles of Roanoke on one finger and north of Panola on another. The Mackinaw River branch would reach about 17 miles east to within 6 miles of Lexington. Other towns within 5 or 6 miles of the lake would be Benson, Gridley, El Paso, Secor, Hudson, Kappa, and Carlock. Major inundations would be: the Toledo, Peoria, and Western Railroad and U. S. Route 24 near Secor; and the Illinois Central Railroad and U. S. Route 51 near Kappa. There are approximately 10 township roads crossing the main branches and numerous tributary inundations. About 12 residences would be inundated and several more would be close to the proposed lake level. For the most part, timber is restricted to poorly drained bottom areas and valley walls. The bottoms are generally open and under cultivation. The watershed encompasses parts of the outer Cropsey moraine and the Normal till plain. The gently rolling, loess-covered uplands have relief of 20 to 30 feet and are primarily under cultivation. Logs of previous borings indicate that glacial material, primarily till, overlies bedrock. An exposure 0.5 mile downstream from the dam site revealed layers of Wisconsin sand, silt, and till about 16 feet thick over 40 feet of hard, blue gray Illinoian till. The abutments are probably similarly constructed and capped by 4 to 6 feet of loess. At the dam site both streams flow in 6- to 10-foot notches in a silty alluvial floodplain of undetermined depth. The nearby till should provide sufficient borrow for dam construc-

tion. The site is considered probably feasible geologically, pending verification by test borings and materials testing. This site should result in a moderately high cost project.

Site 13. A reservoir could be developed by constructing a dam on Panther Creek 0.5 mile upstream from its confluence with the Mackinaw River and 6 miles southwest of Secor. This site should be considered as an alternate to *site 12*. Many relocations would be involved in the development. The Toledo, Peoria, and Western Railroad and the U. S. Route 24 crossing near Secor would have to be rebuilt. High pressure gas lines and power transmission lines cross the reservoir area, and at least six farm residences and associated outbuildings would be inundated. Twelve township roads would have to be improved or abandoned. The wider portions of the floodplain are in pasture or row crop development, and about a fourth of the area is in brush or timber. The watershed includes parts of the outer Cropsey moraine and the Normal till plain. The gently rolling loess-covered uplands have relief of 20 to 30 feet and are primarily under cultivation. Logs of previous borings indicate that glacial material, primarily till, overlies the bedrock. An exposure 1 mile downstream from the dam site revealed layers of Wisconsin sand, silt, and till about 16 feet

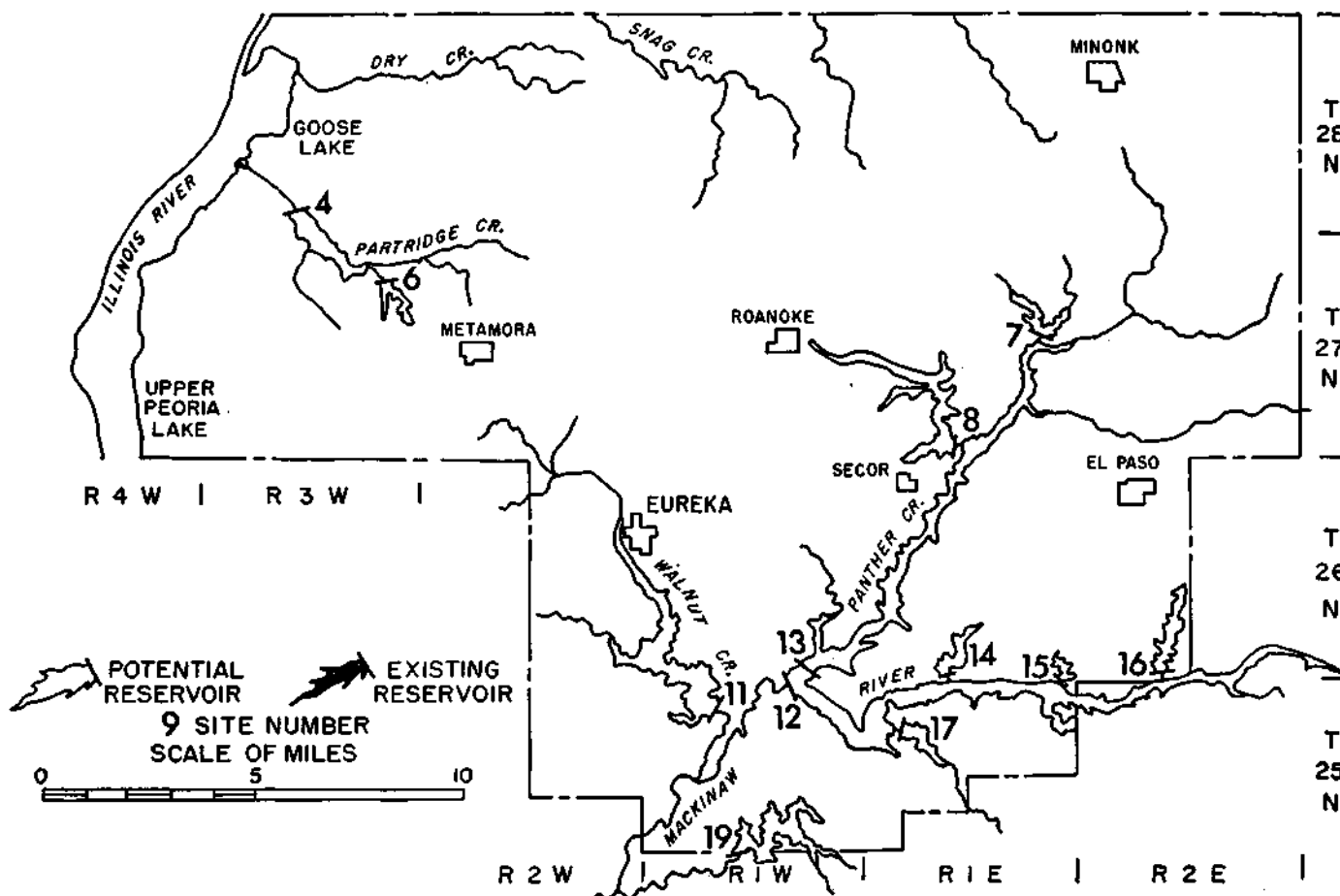
thick over 40 feet of hard, blue gray Illinoian till. The abutments are probably similarly constructed and capped by 4 to 6 feet of loess. At the dam site the stream flows in a 6-foot notch in a silty alluvial floodplain of undetermined depth. The nearby till should provide sufficient borrow for dam construction. The site is considered probably feasible geologically, pending verification by test borings and materials testing.

Site 14. A reservoir could be developed on an unnamed tributary of the Mackinaw River 5 miles west of Kappa. Cover in the lake area consists of pasture with scattered timber. The valley walls are moderately steep, and the floodplain is narrow and irregular. A small chapel and cemetery near the proposed water level would have to be protected, and two township roads would have to be raised. The stream drains a part of the gently rolling topography of the Normal moraine. Surficial soil is developed in loess which mantles the area. Logs of nearby borings indicate that as much as 200 to 250 feet of glacial material, primarily till, overlies the bedrock surface. Exposures near the abutments indicate that the underlying material is a reddish brown till. This till would probably form the foundation at relatively shallow depths and also be used as borrow for construction of the fill. The site is considered probably feasible geologically,

Potential Reservoirs in Woodford County

Site	Waterway location	Spillway elevation (ft)	Pool area (acres)	Storage (ac-ft)	Storage (mg)	Watershed (sq mi)	Times filled per year	Depth at dam (ft)	Length of dam (ft)	Earth fill (cu yd)	Shoreline (mi)	Mean annual runoff (mgd)	Net yield (mgd) for given recurrence intervals							
													Full capacity				Half capacity			
													5 Yr	10 Yr	25 Yr	40 Yr	5 Yr	10 Yr	25 Yr	40 Yr
4	Partridge Creek Ctr. N ¼ 33-28N-3W (Metamora Quad)	560	774	20,380	6,600	26.2	0.5	79	2,450	1,981	12	8.68	8.3	8.0	7.9	7.6	8.2	6.3	4.5	4.5
6	Partridge Creek NE ¼ NE ¼ 11-27N-3W (Metamora Quad)	650	134	3,035	1,000	3.3	0.4	68	850	491	6	1.09	0.9	0.9	0.9	0.9	1.0	0.8	0.7	0.6
7	Trib. Panther Creek NE ¼ SE ¼ 14-27N-1E (Minonk Quad)	700	250	2,250	700	10.5	2.1	27	850	123	8	4.26	2.7	1.7	1.3	1.1	1.3	0.9	0.5	0.4
8	W. Br. Panther Creek NW ¼ SE ¼ 33-27N-1E (Minonk Quad)	700	1,075	11,105	3,600	60.4	2.5	31	1,000	185	29	24.50	13.7	9.1	6.4	5.5	6.6	5.0	2.8	2.1
11	Walnut Creek NE ¼ SE ¼ 5-25N-1W (Danvers Quad)	700	1,574	34,090	11,100	71.8	0.9	65	1,900	1,037	38	28.72	28.2	21.7	18.2	16.4	19.8	12.6	9.1	8.1
12	Mackinaw R. & Panther Creek NE Cor. 3-25N-1W (Danvers Quad)	680	7,821	135,540	44,200	685.4	2.3	52	1,900	766	155	274.14	170.0	114.4	84.2	75.3	86.8	64.4	45.6	36.6
13	Panther Creek Ctr. SW ¼ 35-26N-1W (Danvers Quad)	680	3,251	55,270	18,000	130.9	1.1	51	2,250	922	72	52.36	51.1	36.0	28.6	26.9	30.6	20.4	13.8	11.9
14	Trib. Mackinaw River NW ¼ SW ¼ 33-26N-1E (Danvers Quad)	710	166	2,545	800	6.5	1.1	46	650	201	6	2.60	2.5	1.7	1.3	1.2	1.2	0.8	0.5	0.4
15	Trib. Mackinaw River SE ¼ SW ¼ 35-26N-1E (Danvers Quad)	700	90	1,350	400	2.4	0.8	45	400	112	4	0.96	0.9	0.8	0.7	0.6	0.8	0.4	0.3	0.2
16	Wolf Creek SE ¼ SW ¼ 33-26N-2E (Danvers and Normal Quads)	700	307	4,195	1,400	19.5	2.1	41	650	168	11	7.80	5.1	3.4	2.5	2.3	2.6	1.9	1.2	1.0
17	Denman Creek NE ¼ NE ¼ 7-25N-1E (Danvers Quad)	700	307	5,420	1,800	11.4	0.9	53	1,400	550	5	4.56	4.4	3.4	2.9	2.6	3.0	1.9	1.4	1.2
19	Rock Creek NE ¼ NE ¼ 28-25N-1W (Danvers Quad)	720	525	7,525	2,500	27.9	1.7	43	1,100	332		11.16	9.0	5.7	4.3	3.9	4.4	3.0	2.1	1.7

WOODFORD COUNTY



Existing Reservoirs in Woodford County

Reservoir name	Legal description	Owner	Watershed area		Depth of water at dam		Pool area (acres)	Storage capacity			Remarks and data source
			(sq mi)	(acres)	(ft)	(ft)		(ac-ft)	(mg)	(in)	
Eureka Res.	13-26N-2W (Mackinaw Quad)	Eureka	2.66	1,700			36.0	307	100.0	2.16	Engr. plans
Goose Lake	8-9-17-19-20-28N-3W (Metamora Quad)	Fed. Gov't					3,000.0				River backwaters; photos
Douglas Lake	4-28N-3W (Metamora Quad)	Fed. Gov't					640.0				River backwaters; photos
Barewell Lakes	14-27N-3W (Metamora Quad)	Izaak Walton League	0.26	170	35	27	11.0	120	39.1	8.65	Owner and contractor
	20-25N-1E (Danvers Quad)	Barewell Lake Assn.	0.17	110	35	28	9.2	72	23.4	7.94	Owner and contractor
	10-26N-2W (Mackinaw Quad)	Dr. Lillian Rich	0.13	84	19	17	9.0	60	19.5	8.65	Engr. plans

pending verification by adequate test borings and materials testing. This site should develop at a moderate project cost.

Site 15. A small reservoir could be developed in a V-shaped tributary of the Mackinaw River about 2.5 miles west of Kappa. No roads, residences, nor utilities would be involved in this development. Cover in the reservoir area consists of light timber and brush. The stream drains a part of the gently rolling topography

between the Normal and outer Cropsey moraines. Glacial drift, primarily till, approximately 200 to 250 feet thick overlies the bedrock surface. The abutments have steep slopes and are composed of a medium brown till. A small gravel pit near the left abutment is probably a local deposit, but this would have to be investigated by borings. The valley has a youthful configuration indicating that the alluvium is not deep and a till foundation would be encountered at a shallow depth. The site is considered probably feasible, pending verification by test

borings and materials testing. This site should develop at a moderately low project cost.

Site 16. A reservoir could be developed on Wolf Creek with the dam located 1 mile southeast of Kappa. A golf course and clubhouse would have to be acquired, and two township roads, one with a new concrete bridge, would be inundated. Access to the site from Kappa via U. S. Route 51 is excellent. The reservoir area is open land consisting mostly of pasture with some cultivated areas. The spillway level might have to be adjusted downward to avoid shallow water near residences in the upper reaches. Wolf Creek drains a part of the area in front of the outer Cropsey moraine which has a gently rolling topography mantled by about 4 feet of loess. About 150 feet of clay and tills overlies permeable deeper layers. The stream channel is a 4- to 6-foot notch composed of silt and alluvium in a floodplain about 700 feet wide. The abutments have steep slopes and consist primarily of brown clay till capped by 15 to 20 feet of dark brown clayey till and 2 feet of loess. This site is considered probably feasible, subject to verification by future test borings and materials testing. Relocations and acquisitions would make this site a high cost project.

Site 17. A dam across Denman Creek, 4.5 miles north of Carlock, would create an attractive though somewhat isolated reservoir. The wider portions of the floodplain at this site are under cultivation, but the valley walls are timbered. One township road crossing the site would probably be relocated 0.5 mile south. No residences would be involved in the development. Denman Creek drains a part of the backslope of the Normal moraine which has gently rolling loess-covered uplands with relief of 20 to

30 feet. Logs of previous borings indicate that 200 feet of glacial material, primarily till, overlies the bedrock surface. The abutments have moderate slopes and are composed of gravelly brown till as indicated by nearby exposures. The valley has the configuration of early maturity which is expressed by the well developed floodplain. Depth of the alluvium is not expected to be excessive, and till would probably form the foundation and construction material for the dam. The site is considered probably feasible geologically, pending adequate test borings and materials testing.

Site 19. A dam across Rock Creek, 1.5 miles southwest of Congerville, would create an attractive reservoir with many fingers and coves. The New York, Chicago, and St. Louis Railroad crossing might need slight improvement. The existing township roads would provide the basis for an excellent access road system, but would be inundated in five locations. One residence would be inundated and possibly two others should be acquired for shoreline control. Rock Creek is a tributary to the Mackinaw River, and the watershed contains part of the area between the Normal and Bloomington moraines near Congerville. A previous boring in the area indicates that about 90 feet of clay overlies a hard sandy layer. The abutments have steep to moderate slopes and probably consist of till capped by loess. The stream flows in a shallow notch composed of loess and alluvium of an undetermined depth. The nearby till is probably suitable for the construction of an earth dam. The site is considered probably feasible, pending verification by adequate test borings and materials testing. Land acquisition and relocations could make this a moderately high cost project.