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LAKESIDE HOMES AROUND TUTTLE CREEK
RESERVOIR: AN ELEMENT IN THE LOCAL SETTLEMENT FABRIC

A Thesis

Presented to the

Department of Geography

and the

Faculty of the Graduate College

University of Nebraska at Omaha

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Gary Lee Henton

April 1974

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Accepted for the faculty of The Graduate College
of the University of Nebraska at Omaha in partial fulfillment
of the requirements for the degree Master of Arts.

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INTRODUCTION

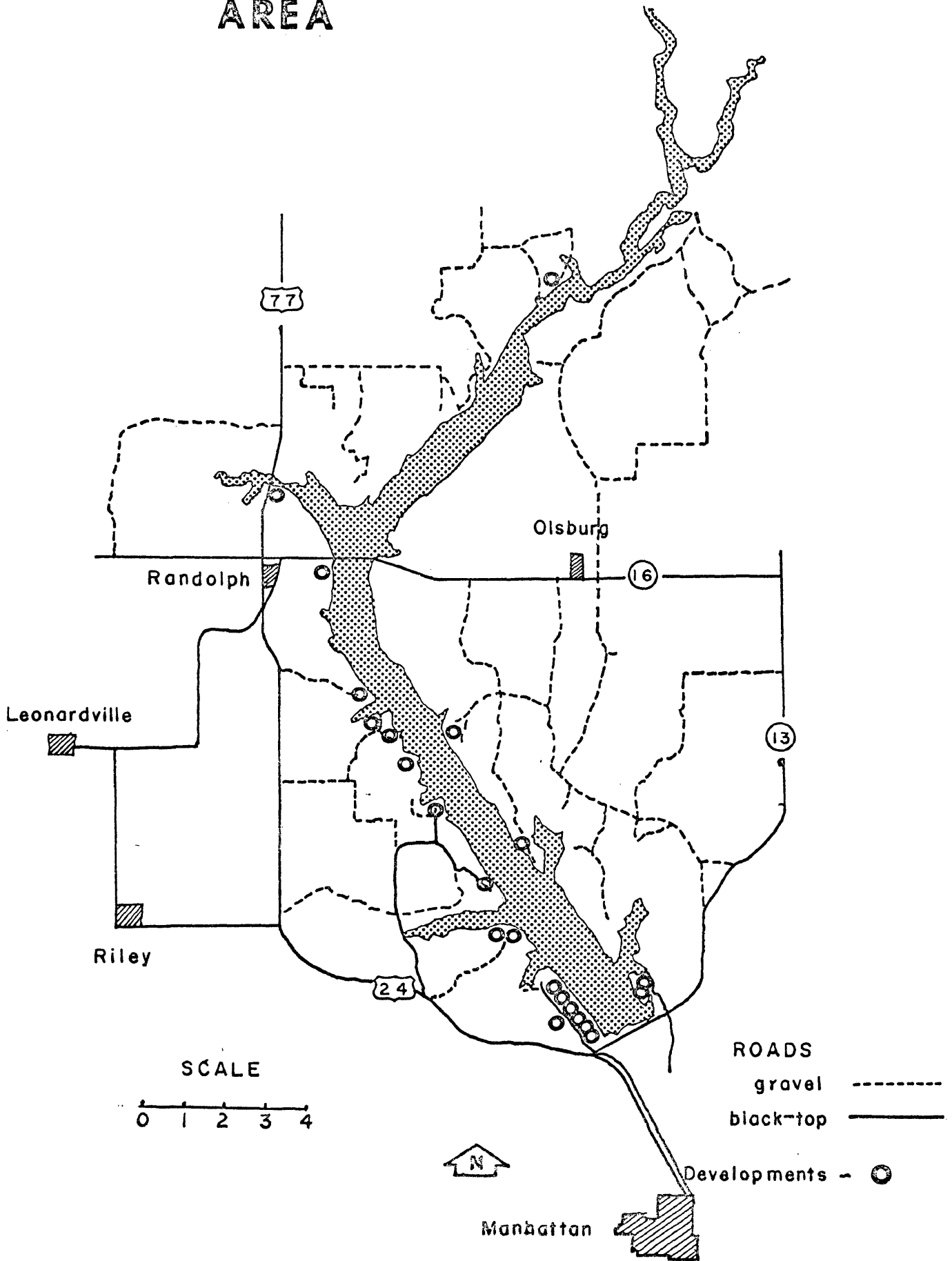
The construction of several large reservoirs in the Midwest has brought about the growth of innumerable ancillary developments. The increased number of new homes, located adjacent to the reservoirs represents a growing component of our settlement fabric. Geographers have done studies on recreational developments, (Wolfe, Roy L., "Summer Cottages in Ontario,"¹ Howes, Robert M., "Recreational Opportunities Arising from Reservoir Construction,"²) but little published investigation has been done in the Kansas or Nebraska area. How important are the lakeshore homes now, and what part will they play in future housing? Who are the people currently occupying these structures? Where do they come from? These and others form relevant questions. This investigation will hopefully bring into sharper focus the role of the lake home development in this one area in Kansas, and perhaps be indicative of what to expect in similar situations in other areas.

This study is focused on Tuttle Creek Reservoir near Manhattan, Kansas, (Map 1). Construction on Tuttle Creek Dam started in 1952 after the large flood of 1951. The reservoir has been operational

¹Wolfe, Roy L., "Summer Cottagers in Ontario," Economic Geography, Volume 27, 1951, p. 10-32.

²Howes, Robert M., "Recreational Opportunities Arising from Reservoir Construction," Annals of the Association of American Geographers, Volume 29, 1939, p. 76.

STUDY AREA



for nearly ten years and most of the home construction has occurred in the past decade. Thus the time period is sufficiently long for some valid conclusions. Many of these houses are permanent homes with year round occupancy; yet a number are resort or summer homes. The type of house ranges from the elaborate requiring a large investment of many thousands of dollars, to the small involving minimal construction costs. The floodplain of the river is almost completely inundated by water, therefore, most of the houses are situated overlooking the river bluff.

Purpose

The construction of a large reservoir in any community necessitates changes within that community. Frequently one of these resulting changes is the construction of lake front homes. The development of lake front homes is the main thrust or problem of this study. Hopefully, this study will allow fuller understanding of lake home developments. The study will try to answer the following questions to promote more complete understanding of lake-side housing as one component of the overall settlement fabric.

1. From where do the owners and occupants of the resort homes come? Are they from the surrounding locality or are they from a large urban area a considerable distance from the reservoir?
2. How often is the home used? Is the home a permanent year round residence or a weekend cabin? How many weekends per year is the cabin used, or is it in use the entire summer?
3. What is the income and occupation of the owners? What type of person is buying and living in lake front developments?

4. What type of homes are being constructed? Are they of minimal investment or are they luxury homes with a large investment? What is the value of the homes?
5. What type of facilities do the developments offer? Why was a particular development chosen?
6. Why was Tuttle Creek Reservoir chosen for the site of the home construction?
7. What part does the lake site homes play in the total settlement pattern of the area?

Through careful observation, the use of a questionnaire, and personal interviews and contacts answers to the above questions hopefully will be found. The results should provide more complete knowledge of lake front home developments.

Methodology

A large part of the research for this paper was field work in the form of interviews and direct field observations. All of the real estate developments were investigated to try and determine the facilities each development offers. Twenty-two real estate developments exist presently; however, fourteen of these developments contain all but twelve of the lake-side houses. Some of the private owners within the development areas were interviewed, and a questionnaire was used to cover all the home owners. The number of homes is continually increasing with several houses under construction at the present time. The total number of houses is currently in the vicinity of 225, and all of the homeowners were contacted in the form of an interview or a questionnaire (Appendix A).

County records relating to ownership and value were intensively researched. Library research was used for background material, and

numerous governmental and local publications were helpful. Numerous maps are used in the study to explain and locate certain phenomena. Photographs are used to depict the physical and cultural features within the area. Various sampling and statistical procedures are used to generate and utilize data.

Study Area

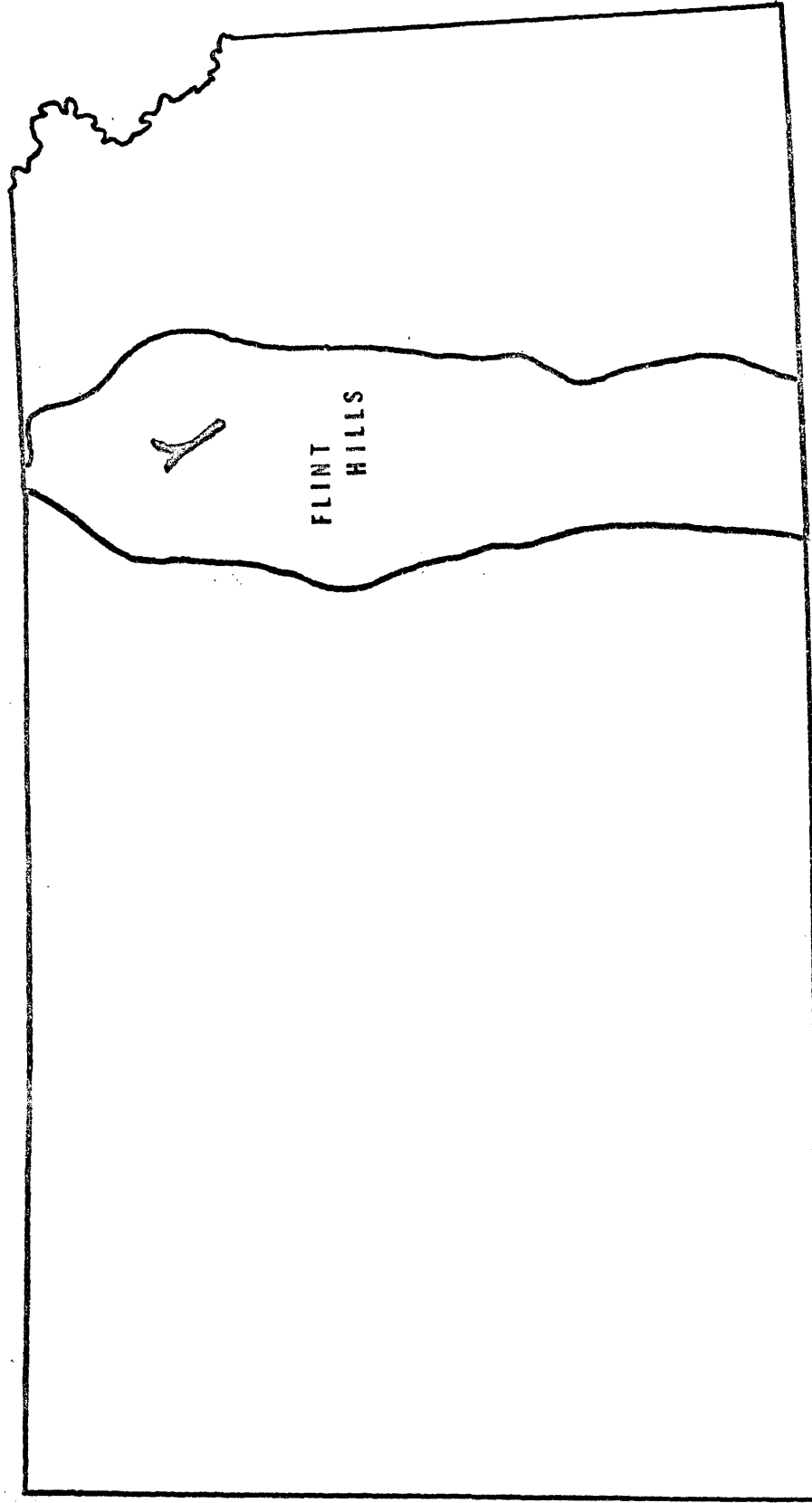
Tuttle Creek Reservoir is located on the Big Blue River which runs through the Flint Hills area at the point of the reservoir (Map 2). The hills are covered mainly with native blue-stem grasses and scattered with juniper or red cedar trees (Plate I). The low areas and the stream cuts are woodland. Elm, cottonwood, and oak trees are the dominant species of trees.

Houses built on these hills have a magnificent view of the lake, but they are generally located a considerable distance from the water's edge. This distance from the lake varies from a few hundred feet to nearly a mile, because the Corp of Engineers controls a collar of land around the lake for flood water protection.

The reservoir is located about a two and one-half hour drive from the Kansas City area; or approximately 120 miles. Lincoln, Nebraska is a similar distance from the lake. Topeka is located only 65 miles from the reservoir, and Omaha is within a three hour drive of the northern end of the lake. These four large urban areas are within a relatively short driving distance of the reservoir (Map 3).

Small towns surround the lake with Riley located eight miles

LOCATION WITHIN THE FLINT HILLS



Source: HUBER SELF
GEOGRAPHY OF KANSAS
SYLLABUS AND ATLAS

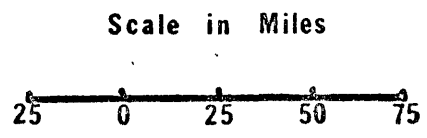
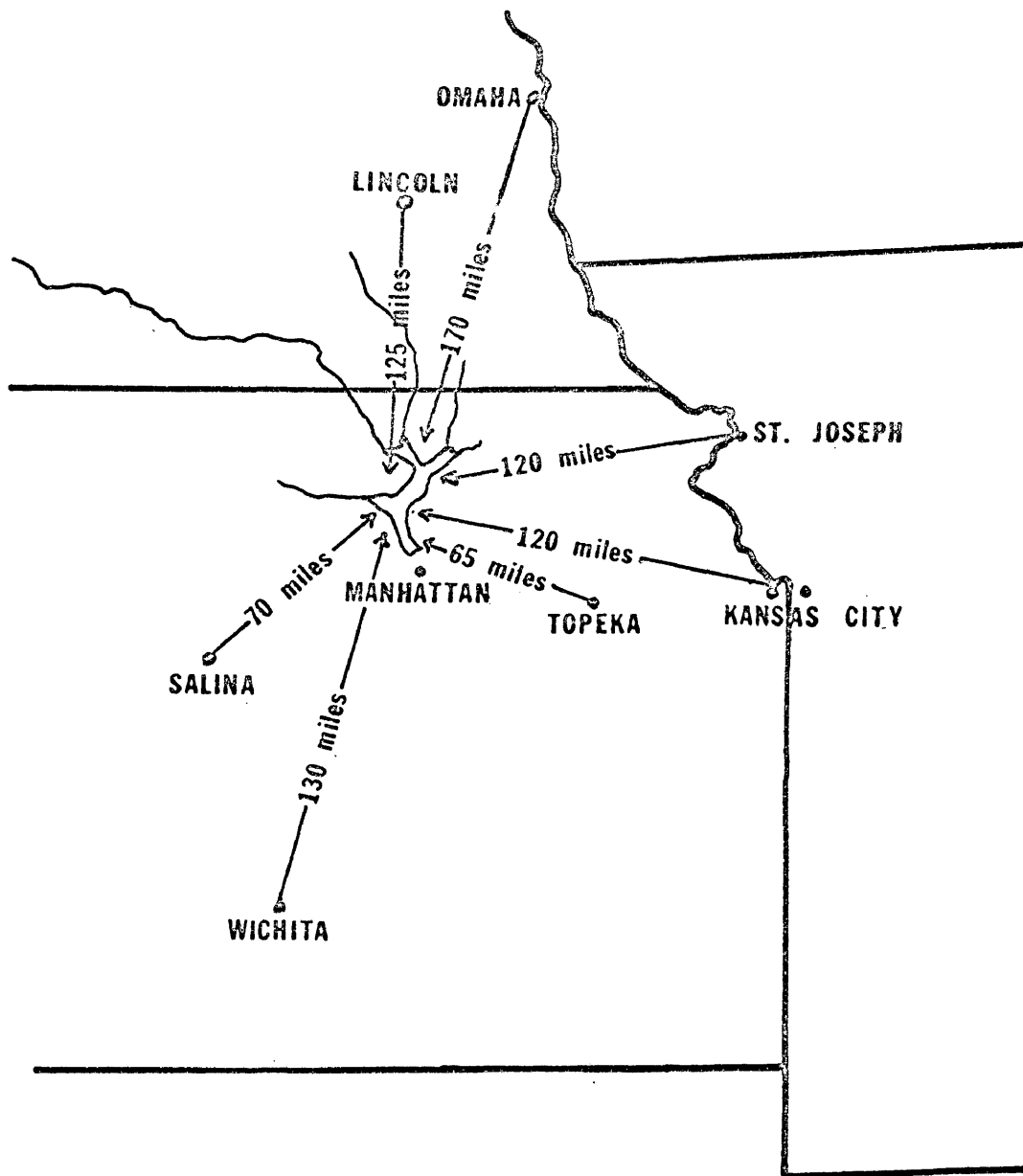
MAP 2

PLATE I



Flint hills vegetation consists mainly of native bluestem grasses. Red cedar is most common on the uplands with deciduous trees lining valley breaks.

SURROUNDING URBAN AREAS



Corps of Engineers

MAP 3

west of the Stockdale area of the lake (Map 4). Randolph has been relocated a mile west of the lake near the Fancy Creek area after being forced to relocate because of the lake construction. Olsburg is located seven miles east of the reservoir directly across from Randolph. These two small communities are connected by the longest bridge in Kansas which spans the lake on highway 16. Manhattan is located five miles south of the dam on highways 24 and 13 (Map 4). These cities and towns represent the main areas supporting and contributing to the development around Tuttle Creek Reservoir.

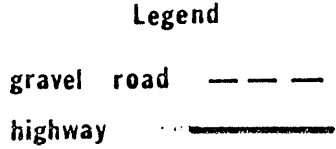
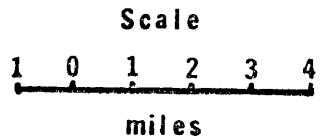
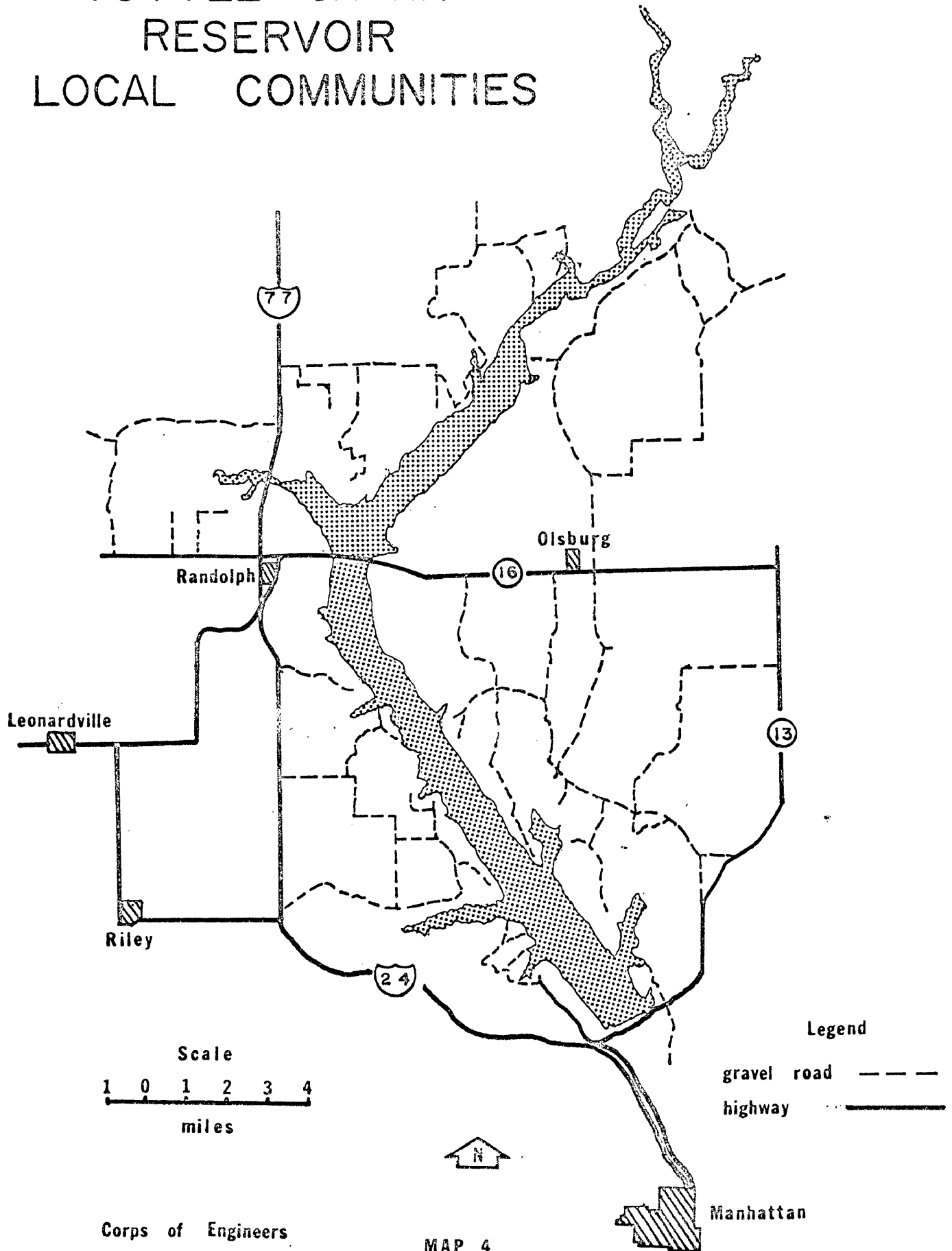
Previous Literature on the Area

Previous studies in the Tuttle Creek area include a Ph.D. dissertation at the University of Kansas in 1962 by Robert Webb. This dissertation was primarily concerned with the break-up of the farming operations in the Blue Valley caused by the construction of the reservoir, as the title indicates, Relationships Between Agricultural Lowlands and Uplands in a Portion of the Big Blue Valley Region of Kansas.³ A master's thesis at Kansas State University on Tuttle Creek Reservoir was also done by David Gattorna, Some Land Use Impacts in a Portion of the Immediate Area of Tuttle Creek Reservoir, Kansas.⁴ This thesis' main concern was with the land use changes. Other studies outside geography have been done.

³Webb, Robert, "Relationships Between Agricultural Lowlands and Uplands in a Portion of the Big Blue Valley of Kansas." (unpublished dissertation, University of Kansas, 1962).

⁴Gattorna, David, "Some Land Use Impacts in a Portion of the Immediate Area of Tuttle Creek Reservoir, Kansas." (unpublished MA thesis, Kansas State University, 1969).

TUTTLE CREEK RESERVOIR LOCAL COMMUNITIES



A Ph.D. dissertation in economics was completed by Paul Barkley, The Economic Effects of Reservoir Development on Individual Farms Lying Partially Within the Site,⁵ and a master's report on Replacement Problems Including Land Prices Affecting Land Owners Displaced by Reservoirs,⁶ was done by Vernon Geissler in the economics field.

⁵Barkley, Paul, "The Economic Effects of Reservoir Development on Individual Farms Lying Partially Within the Site." (unpublished dissertation, Kansas State University, 1963).

⁶Geissler, Vernon, "Replacement Problems Including Land Prices Affecting Land Owners Displaced by Reservoirs." (unpublished MS report, Kansas State University, 1966).

CHAPTER I
HISTORICAL SETTING

Kansas history is replete with records of damaging floods. It is not unusual to have old timers relate and date occurrences of floods. Since records have been kept, the Kansas River has flooded 20 times. The longest period between overflows of the river is eight years through out the years of 1844 to 1951.⁷ The Blue River, an important tributary to the Kansas River has a similar record. The Blue River flooded fifteen times between 1902 and 1951.⁸ The resulting damages from these floods were tremendous, especially in 1951, at which time it was estimated \$767,370,000 damage resulted in Kansas.⁹ The Blue River was responsible for \$26,300,000 of this damage in the May-July period.¹⁰ Flood control represented the chief justification for the construction of the Tuttle Creek Dam and Reservoir.

Other potential uses of the reservoirs were noted such as irrigation, power, navigation, and recreation, but the primary purpose of the large reservoirs in the Missouri Valley is to

⁷Foley, F. C., Smrha, R. V., & Metzler, D. R., Water in Kansas, Kansas State Legislature, Topeka, 1955, p. 9.

⁸Ibid., p. 9.

⁹Ibid., p. 8.

¹⁰Ibid., p. 8.

reduce or eliminate the rather regularly occurring floods.

In 1926 Congress requested an investigation of potential water development projects.¹¹ This investigation included the Kansas River Basin and the Blue River, and was primarily concerned with flood control, navigation stability, irrigation and potential water power. The Blue River investigation was first recorded in 1928 in governments documents, and in 1931 was compiled in a report entitled, "Kansas River, Colorado, Nebraska, and Kansas."¹² Which was later published as a House Document.¹³

In the report a reservoir was proposed for the Blue River north of Manhattan, Kansas near the Tuttle Creek tributary of the Blue River. The reservoir was to be constructed for flood control and for better navigation on the Missouri River between Kansas City and St. Louis. This report and the Congressional investigation into water development projects, proceeded to set the stage for the construction of Tuttle Creek and many other reservoirs.

A general Flood Control Act was passed in 1936 in which Congress stressed federal responsibility for navigable rivers and

¹¹U.S. Congress, House, Examination of Streams for Water Power Development, 69th Congress, 1st Session, 1925, House Document 308.

¹²Gattorna, David, "Some Land Use Impacts in a Portion of the Immediate Area of Tuttle Creek Reservoir, Kansas," (unpublished MA thesis, Kansas State University, 1969).

¹³U.S. Congress, House, Kansas River, Colorado, Nebraska, and Kansas, 73rd Congress, 2nd Session, 1934, House Document 195.

their tributaries.¹⁴ This act and supplementary studies recommended three different reservoir sizes at Tuttle Creek.¹⁵

Continuing reports by the Corp of Engineers recommended the construction of Tuttle Creek Dam and other reservoirs for the Kansas River Basin and for the Missouri River Basin Comprehensive Plan. The initial authority to construct Tuttle Creek Reservoir was given in 1938. The 1938 Flood Control Act, Public Law No. 761, 75th Congress 3rd Session was the official document.¹⁶ Other recommendations by the Corp of Engineers in following years were for the expansion of the capacity of Tuttle Creek Reservoir.

The Pick-Sloan Plan, or the Flood Act of 1944, considered Tuttle Creek Dam to be an important component in controlling the Missouri River.¹⁷ Local opposition to the Pick-Sloan Plan strengthened after the 1951 flood, and for the first time in history a Democrat won the congressional election on the platform of opposition to Tuttle Creek Dam. Construction on the dam was halted for a two year period as the controversy flared, but governmental action was influenced by the large flood in 1951 and urban pressure for the

¹⁴Leopold, Luna B., & Maddock, Thomas Jr., The Flood Control Controversy, New York, Ronald Press, 1954, p. 100.

¹⁵Gattorna, David, "Some Land Use Impacts in a Portion of the Immediate Area of Tuttle Creek Reservoir, Kansas," (unpublished MA thesis, Kansas State University, 1969).

¹⁶Corp of Engineers, Kansas City District, Flood Control Project, Definite Project Report Tuttle Creek Dam and Reservoir Big Blue River Kansas, January 31, 1952.

¹⁷Davis, Kenneth, River on the Rampage, Garden City, New York, Doubleday and Company Inc., 1953, p. 170.

dam. In 1953 Congress appropriated 10 million dollars to the Tuttle Creek Flood Control project in which the dam was to be a dry-dam¹⁸ project.¹⁹ The dry-dam project was reversed in 1957 when the midwest was experiencing a drought.²⁰ The down stream concerns were not favorable to a dry-dam project, and farmers within the valley were not happy with the idea of a dry-dam within their crop area.²¹

By July 1959 the earthen dam at Tuttle Creek was sufficiently complete to provide limited flood protection. The heavy snowfall in late winter and the preceding spring snowmelt allowed the dam to back up a considerable pool of water in the spring of 1960. The official dedication and completion of the dam occurred on July 1, 1962.

Demands for water during the time Tuttle Creek Reservoir was first proposed and finally built, changed considerably. Agriculture needs for water consists mainly of demands for crops, compared to the urban use for personal households. Leisure time and attitudes

¹⁸ A dry dam is "so constructed that only during times of excessive precipitation would water be impounded back of the dam to create a temporary reservoir or pool and that at other times farming, etc. would go on as before." Schoewe, Walter H., "The Geography of Kansas, Part II Concluded-Hydrogeography," Transactions of the Kansas Academy of Science, LVI (June 1953), p. 160.

¹⁹Corp of Engineers, op. cit., p. IV-3. (citing U.S. Congress, 1952, 82nd Congress, 2nd Session, Senate Report 1754).

²⁰U.S. Congress, Senate, 85th Congress, 1st Session, Senate Report 600, 1957.

²¹Peterson, E. T., Big Dam Foolishness, New York, Devin-Adair Company, 1954, p. 62.

have changed and created a need for more water for uses other than crops and domestic use. Recreational water sports generally require a large body of water. Eastern Kansas has a large urban population with increased leisure time needing additional recreational waters. Tuttle Creek Reservoir was one of the first reservoirs built in Eastern Kansas, and promoted the popularity of water sports. In addition to sports requiring water, bodies of water attract campsites, parks and cabins or lake homes.

Edward Ackerman states five physical-cultural features which vary the demand for water. These characteristics appear to be important in Kansas. 1) The size and growth characteristics of the population, 2) the character of natural resources other than water and their peculiar combinations with regions, 3) the space characteristics of the land that help to determine the location of service functions in the economy, 4) popular attitudes toward climate and other outdoor amenities, and 5) political structure and political policy.²²

By 1960 eastern Kansas had a large urban population with enough leisure time to more than supply the demand for a large body of water for recreational use (Table 1 and Table 2). Population decrease in the rural counties was more than made up by the population increase in urban areas, and it is probable that urban dwellers make more frequent use of recreational waters than do rural residents (Table 3).

²²Ackerman, Edward & Lof, G., Technology in American Water Development, Baltimore, John Hopkins Press, 1959, p. 61.

TABLE 1
POPULATION BY COUNTY
FOR 11 COUNTIES SURROUNDING TUTTLE CREEK RESERVOIR

County	1970	% Change	1960	% Change	1950
Pottawatomie	11,755	-1.68	11,957	-3.13	12,344
Riley	56,788	+35.48	41,914	+25.47	33,405
Jackson	10,342	+0.32	10,309	-7.10	11,098
Shawnee	155,322	+9.93	141,286	+34.02	105,418
Nemaha	11,825	-8.31	12,897	-10.06	14,341
Marshall	13,139	-15.76	15,598	-12.98	17,926
Washington	9,249	-13.87	10,739	-17.24	12,977
Clay	9,890	-7.35	10,675	-8.73	11,697
Geary	28,111	-2.32	28,779	+32.79	21,671
Dickinson	19,993	-7.31	21,572	+1.80	21,190
Wabaunsee	6,397	-3.77	6,648	-7.82	7,212
Total	332,811	+6.50	312,374	+16.00	269,279

Source: U. S. Department of Commerce, Bureau of Census, General Population Characteristics of Kansas, 1970 Census of Population.

U. S. Department of Commerce, Bureau of Census, General Population Characteristics Kansas, 1960 Census of Population.

TABLE 2
POPULATION BY CITIES OVER 1,000
IN 11 COUNTIES SURROUNDING TUTTLE CREEK RESERVOIR

City	1970	% Change	1960	% Change	1950
Manhattan	27,575	+19.92	22,993	+20.66	19,056
Topeka	125,011	+4.62	119,484	+51.64	78,791
Wamego	2,507	+6.09	2,363	+26.43	1,869
Seneca	2,182	+5.30	2,072	+8.42	1,911
Holton	3,063	+1.15	3,028	+11.94	2,705
Marysville	3,588	-13.39	4,143	+7.16	3,866
Clay Center	4,963	+7.58	4,613	+1.87	4,528
Abilene	6,661	-1.26	6,746	+16.81	5,775
Junction City	19,018	+1.70	18,700	+38.90	13,462
Ogden	1,491	-16.28	1,780	+110.65	845
Blue Rapids	1,148	-19.49	1,426	-0.27	1,430
Washington	1,584	+5.17	1,506	-1.37	1,527
Herington	3,165	-14.50	3,702	-1.93	3,775
Total	201,956	+4.73	192,556	+27.40	139,540

Source: U. S. Department of Commerce, Bureau of Census, General Population Characteristics Kansas, 1970 Census of Population.

U. S. Department of Commerce, Bureau of Census, General Population Characteristics Kansas, 1960 Census of Population.

TABLE 3
TUTTLE CREEK RESERVOIR VISITORS

Year	Visitors
1963	1,012,209
1964	1,298,430
1965	931,480
1966	891,947
1967	856,955
1968	1,102,068
1969	1,301,230
1970	1,342,750
Total	8,637,069

DISTRIBUTION
1970

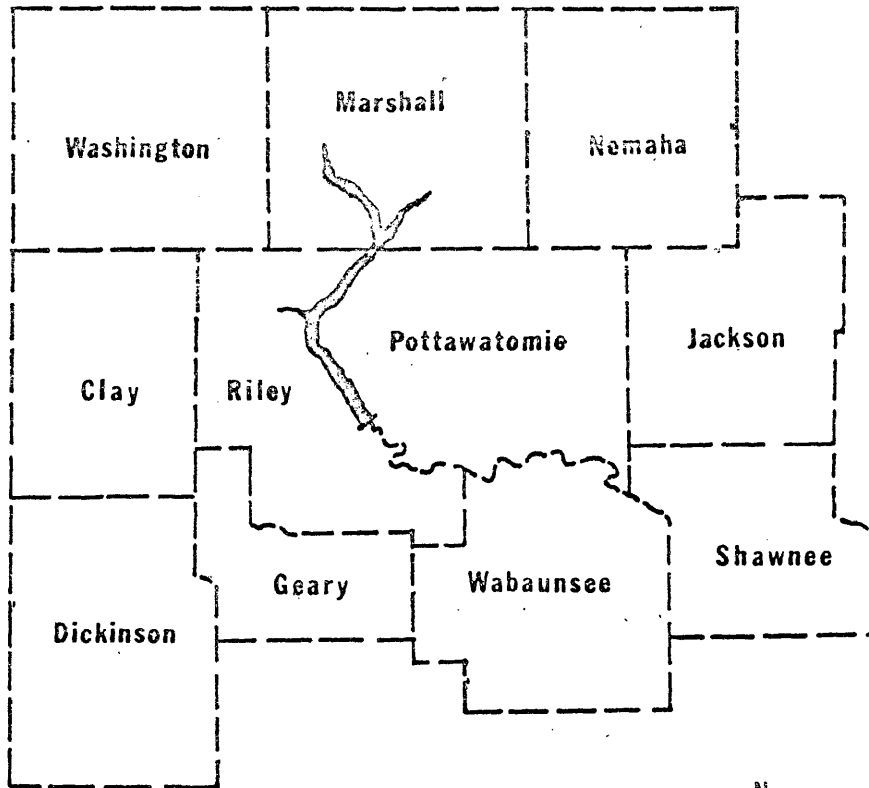
Camping	14.2%
Picnic	10.5%
Boating	11.3%
Fishing	22.5%
Hunting	0.3%
Sightsee	50.6%
Ski	3.6%
Swim	16.7%

PLACE OF ORIGIN
1970
(% of persons)

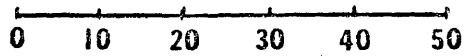
Within 25 miles	55.7%
Between 26-50 miles	9.1%
Between 51-75 miles	8.5%
Between 76-100 miles	4.0%
Beyond 100 miles	22.7%

Source: Corps of Engineers, Kansas City District, Reservoirs
Summation of Recreation Use, Calendar Year 1970.

SURROUNDING COUNTIES



Scale



Miles

MAP 5

Public opinion for the reservoir was favorable in downstream communities and bitterly opposed by some within the Blue Valley where the reservoir was to be located. However overall political pressure was favorable for construction of the dam, especially after the 1951 flood in downstream areas.

Physical Background

The dam is located in the northern edge of the Flint Hills (Map 2, p. 6). Upland areas are used primarily for grazing and are covered with a bluestem prairie grass. Soil depth is very shallow, and in many cases it appears that the grasses are growing directly on the limestone bedrock (Plate II). The only tree of any numbers on the uplands is the red cedar (Plate III).

Stream breaks are lined with deciduous trees; oak being most common. Cropland is primarily located in the valley bottoms, and along main tributaries to the reservoir. The Blue River floodplain is nearly completely inundated with water within Riley and Pottawatomie counties. Marshall County has a considerable amount of excellent river bottom land which is farmed, but subject to high water flooding by the reservoir.

Before the construction of the dam, the Blue River Valley was rated as excellent agricultural production area. The valley produced good crops in nearly all years except during heavy flood years. The Blue River Valley farms provided a significant portion of the feed grain production for the livestock grazed on the flint hills upland areas around the valley. Robert Webb's dissertation

PLATE II



Limestone bedrock underlies all areas very close to the surface except in alluvial plains. Vegetation appears to be protruding directly from the bedrock.

PLATE III



The red cedar is spreading rapidly through the flint hill grasslands. Many farmers burn their pastures in the spring to kill the red cedar and cut down the large red cedar trees. They fear the red cedar will take over their pastures and ruin the pastures for grazing.

is dedicated to the problem of the break up of the successful farming-grazing operation carried on in the Blue Valley and surrounding flint hills by the construction of Tuttle Creek Reservoir.²³

Topography of the area is one of rolling hills, sometimes having step-like faces indicating the different resistance of the layers of limestone. Elevations of surrounding flint hills range from 1,300 to 1,350 feet, which grade down to the lake's conservation pool level of 1,075 feet. The base of the dam is approximately 1,020 feet above sea level. Small stream tributaries generally have steep sloped sides with very little flat valley bottom.

The climate of the reservoir area in general is characteristic of a mid-continent region with great extremes in temperature. Extreme droughts are possible and excessive moisture can occur, but rarely does the annual precipitation exceed a range of 50 percent above or below the norm.²⁴

The area may be harrassed by high winds, tornadic disturbances, damaging hailstorms and violent thunderstorms. Through out the Kansas River Basin the mean annual temperature is 51° ranging from 27° in January to 78° in July for monthly mean averages.²⁵ Extremes do occur, but many days are pleasant and clear, especially in the autumn.

²³Webb, Robert, "Relationship Between Agricultural Lowlands and Uplands in a Portion of the Big Blue Valley Region of Kansas" (unpublished Ph.D. dissertation, University of Kansas, 1962).

²⁴U.S. Congress, House, Kansas River, Colorado, Nebraska, and Kansas, 73rd Congress, 2nd Session, 1934, House Document 195.

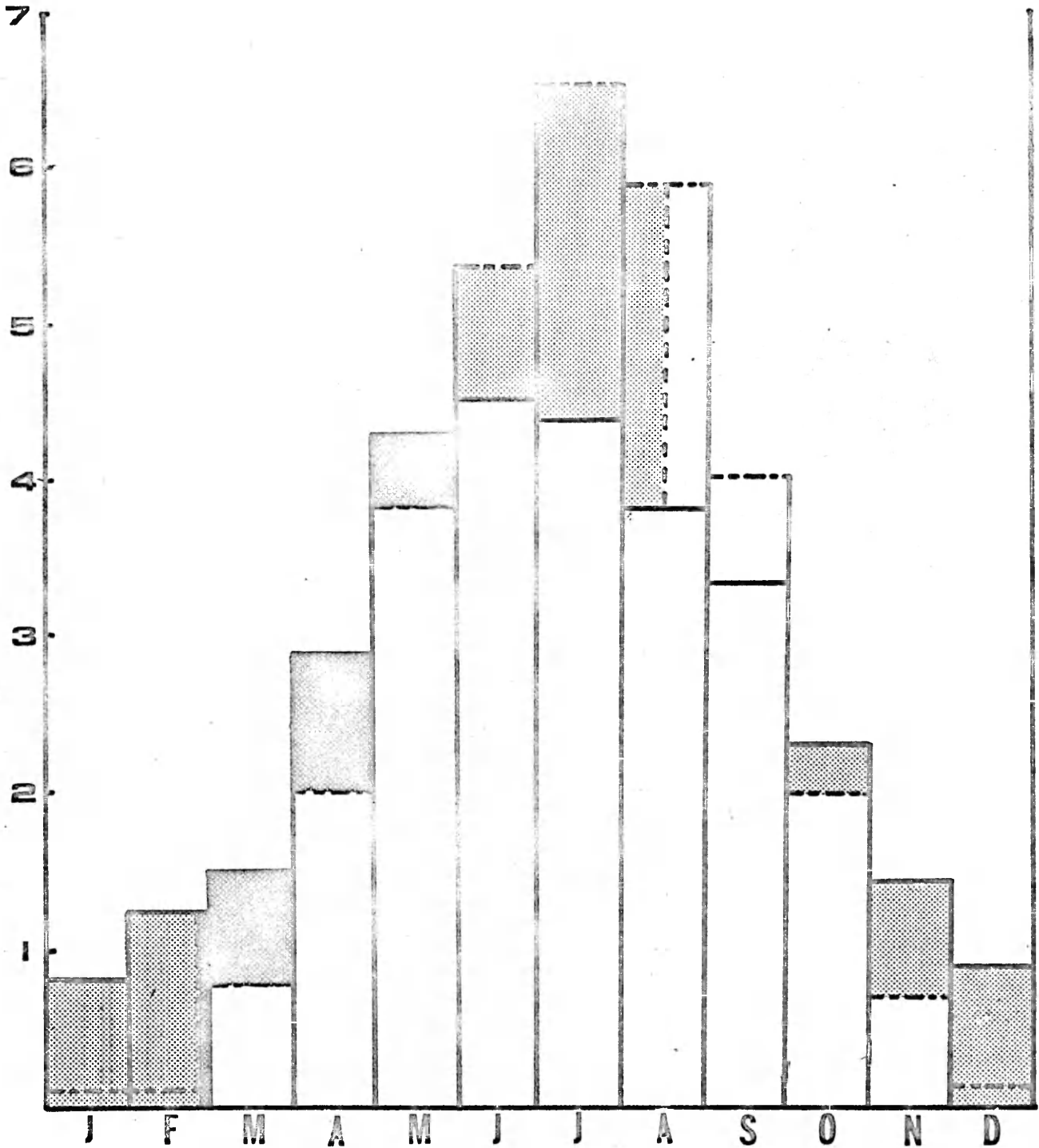
²⁵Ibid.

WATER BUDGET

for

MANHATTAN KANSAS

inches



— precipitation
 - - - - - evapotranspiration

■ SURPLUS
 ■ RECHARGE
 ■ UTILIZATION
 □ DEFICIENCY

Strahler 1969

TABLE 4

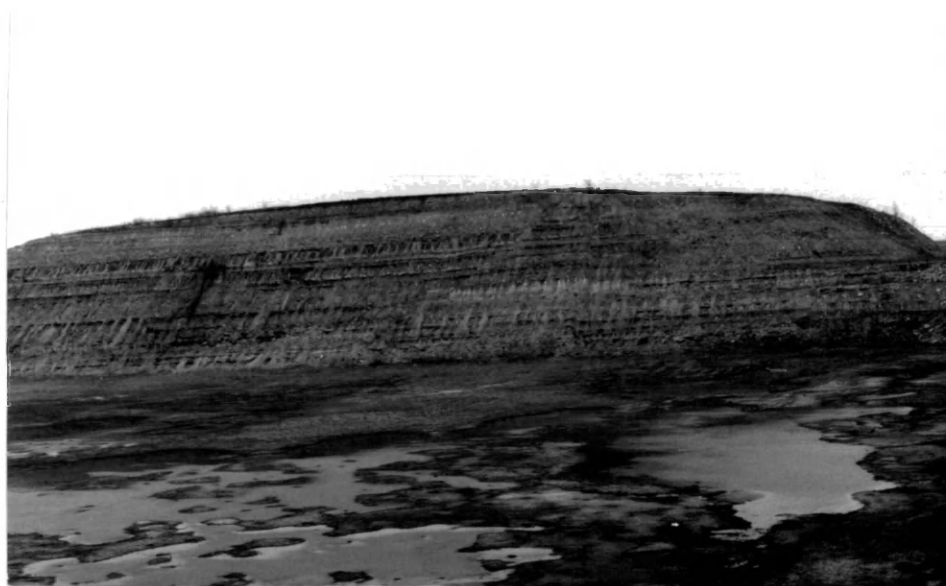
Precipitation recorded at the Manhattan weather station amounts to about 32 inches annually.²⁶ Most of this precipitation (about 75%) occurs as rainfall between April 1 and September 30, and 55% of the total annual precipitation occurs during the four growing season months.²⁷ The total water budget (Table 4) for the year relates the periods of excess moisture, deficiency and recharge, which is important for the operation of the reservoir.

Tuttle Creek Dam is actually built along a fault. The fault is portrayed on the east side of the dam in the hill cut necessary for the spillway. Slippage along the fault is nearly 30 feet. The fault is part of the Nemaha Anticline, and there is no record of recent movement (Plate IV). It has been traced across the dam, but there is no complementary offset on the other side of the lake. The dam itself is earth filled clay and slightly flexible and not sensitive to slight shocks, but larger shocks could possibly do considerable damage to the dam itself.

²⁶Strahler, Arther N., Physical Geography, 3rd edition, John Wiley and Sons, Inc., New York, 1969, p. 247.

²⁷U.S. Congress, House, Kansas River, Colorado, Nebraska, and Kansas, 73rd Congress, 2nd Session, 1934, House Document 195.

PLATE IV



This fault was uncovered when workmen cut the channel for the spillway. This plate shows the east side of the spillway channel.

CHAPTER II
LEGAL RESTRICTIONS

Commercial development and construction around Tuttle Creek Reservoir has not been hap-hazard. The Corps of Engineers, county governments and developers have been responsible for rather orderly development.

Corps of Engineers

The Corps of Engineers control the land surrounding the lake for flood water purposes. The normal pool level of Tuttle Creek Reservoir is elevation 1,075 msl.²⁸ The surrounding land was purchased by the Corps of Engineers in fee simple to the five year flood pool elevation of 1,101 msl., and an easement was obtained by the Corps of Engineers to the full pool level elevation of 1,136 msl.²⁹ (Map 6).

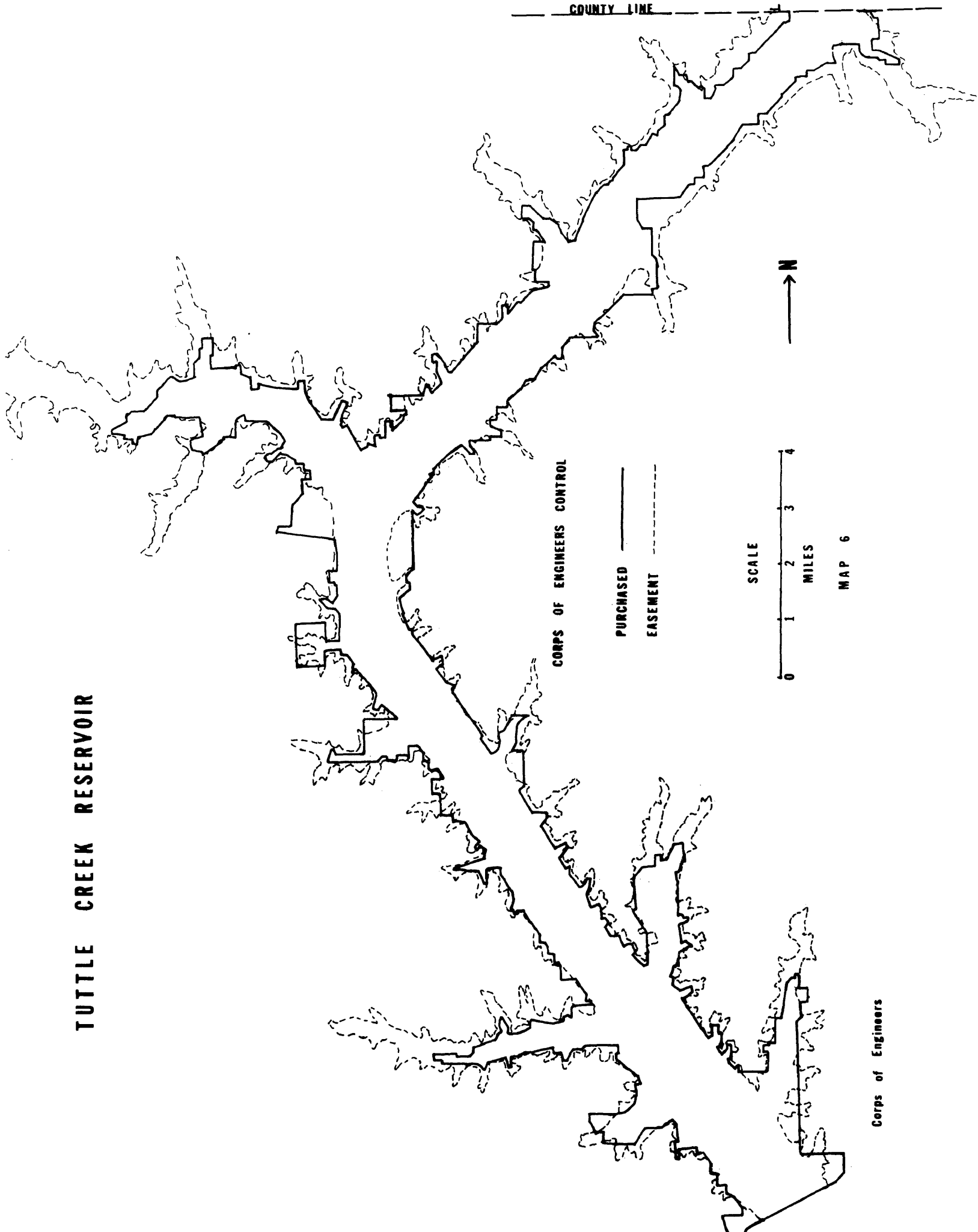
The condition of easement is that the land remains in private ownership, but no habitable structures may be erected upon the land. All buildings located in this zone prior to construction were razed up to the 1,136 msl. elevation.³⁰ These are the only restrictions imposed by the Corps of Engineers. The right of access to the water across government land exists. Boat docks are subject to the Corps of Engineers regulations in the form of a lease.

²⁸msl., mean sea level.

²⁹J. E. Johnston, Project Manager, Tuttle Creek Reservoir, personal letter, January 31, 1972.

COUNTY LINE

TUTTLE CREEK RESERVOIR



CORPS OF ENGINEERS CONTROL

PURCHASED

EASEMENT

SCALE



MILES



MAP 6

Corps of Engineers

The slope of the land determines the distance from the lake the Corps of Engineers control. Homes can almost be directly overlooking the lake on a river bluff, but must be back a considerable distance on the gently sloping land. The lake front homes are constructed on land above the easement level and outside of the Corps of Engineers control.

County Regulation

Houses built around the lake are subject to local county ordinances and codes. Lake front property is all Class A residential requiring a building and health permit for all construction.³¹ Pottawatomie County did not have a building or health ordinance, therefore the Riley County code was adopted for lake front structures. Use regulations for Class A residential is as follows:

In Zone A no building, structure, land or premises shall be used and no building or structure shall be henceforth erected, moved constructed or altered except for one or more of the following uses.

1. Dwelling
2. Churches and community buildings.
3. Public parks and playground, golf courses, public recreation buildings and public museums.
4. Public schools, elementary and high, and private schools with curriculum equivalent to that of a public elementary or high school, and institutions of higher learning with stadiums and dormitories in conjunction if located on the campus.
5. Municipal buildings, public libraries, police stations, and fire stations.
6. Railroad right of ways, not including railway yards.

³¹Riley County Engineer, Manhattan, Kansas, personal letter.

7. Farms, nurseries, truck gardens and greenhouses limited to the propagation and cultivation of plants.
8. Telephone exchanges and equipment.
9. Accessory uses, customarily incident to the above uses and located on the same lot therewith, not involving the conduct of a retail business.³²

Dimensions and size of lot per single family dwelling or for a two-family dwelling is also regulated.

Every dwelling hereafter erected or altered shall provide a lot area of not less than five thousand (5000) square feet per family for a single family dwelling and three thousand seven hundred and fifty (3750) square in separate ownerships at the time of the passage of this resolution, this regulation shall not prohibit the erection of a single family dwelling.

Height of no building shall exceed thirty-five (35) feet or two and one-half stories.

Any building hereafter constructed shall provide for a front yard, the minimum depth of which shall be at least twenty-five (25) per cent of the lot, but the depth of such front yard need not be more than twenty-five (25) feet. There shall be a side yard in each side of a building not less than ten (10) per cent of the lot, but such side yard shall not be less than six (6) feet.

The depth of the rear yard shall be at least thirty (30) per cent of the depth of the lot, but such depth need not be more than twenty-five (25) feet.³³

Health and Sanitation Codes

Health and sanitation codes are probably the most restrictive and difficult to adhere to when constructing a lake front home.

Sewage disposal is the most complex problem.

³²Riley County Building Code, Manhattan, Kansas.

³³Ibid.

The following minimum requirements shall apply to all individual and joint sewerage systems constructed, altered or extended hereunder and no permit shall be issued nor shall any such system be finally approved unless said system meets these requirements:

- (a) All individual and joint sewerage systems shall utilize septic tanks with absorption fields for discharge of sewage.
- (b) All absorption fields shall be properly designed, constructed and maintained so as not to constitute a public health nuisance.
- (c) All portions of sewerage systems that are of not watertight construction shall be located at least seventy-five (75) feet from any water supply lines, and/or water supply well.
- (d) All sewerage systems located in flowage easement areas purchased by the United States Government or any instrumentality thereof, shall be not lower than thirty (30) vertical feet below the high water line established at full pool level of any pond, lake or water reservoir.
- (e) No individual or joint sewerage system shall be installed or permitted within four hundred (400) feet of an existing public sewer unless the Health Officer deems it not feasible to connect to the public sewer and the owner provides ample assurance that a nuisance will not be permitted to develop.
- (f) No soil absorption type of sewage disposal system shall be installed or permitted in areas where rock formations or other impervious formation are present at a depth of less than four (4) feet below the bottom of the trenches or absorption bed.
- (g) No soil absorption type of sewage disposal system shall be installed or permitted in areas where the normal ground water level is less than four (4) feet below the bottom of the proposed trench or absorption bed.
- (h) No absorption type disposal system shall be installed or permitted on a lot, a group of lots, a parcel, or a tract upon which water is obtained from a private water supply if:
 - (1) The number of absorption type disposal systems exceeds one such installation for each 21,780 square feet of land area in the lot, group of lots, parcel, or tract for which a permit is requested.
 - (2) The minimum distance, at the nearest points between adjacent absorption type disposal systems results in a dimension of less than

fifty (50) feet.³⁴

Meeting the requirements of the health and sanitation codes in the area of the lake can be difficult in two particular areas. Code (f) and (h) in the above list are the most difficult to meet. The area around the lake has already been stated to lie in the edge of the flint hills. Much of this area is unlain by limestone which frequently lies near the surface. In many areas it would be impossible to have four feet between the bottom of the absorption trenches and the layer of limestone. For weekend cabins the Health Department recommends the use of holding tanks rather than septic tank absorption fields to avoid this problem.³⁵ (Plate V)

Code (h) is simply a matter of size of the lot that is purchased. Unless facilities for water and sewage are provided the lot size must be of at least one-half acre. This is enough space to allow for the drilling of a well and the construction of a septic tank and absorption field.

Developers:

Each development area may, or may not, have its own specific regulations to which builders of homes must adhere. The development may also have public water and sewage systems available allowing construction of homes on smaller lots and in more areas. Developments and their facilities will be discussed in the next chapter.

³⁴Sanitary Code of Riley County, Kansas, p. 3-4.

³⁵William P. Deam, Administrator Riley County Health Department, Manhattan, Kansas, personal letter.

PLATE V



The limestone bedrock so near the surface creates difficult problems when digging septic tank laterals. The lateral field should have four feet of free drainage above the bedrock.

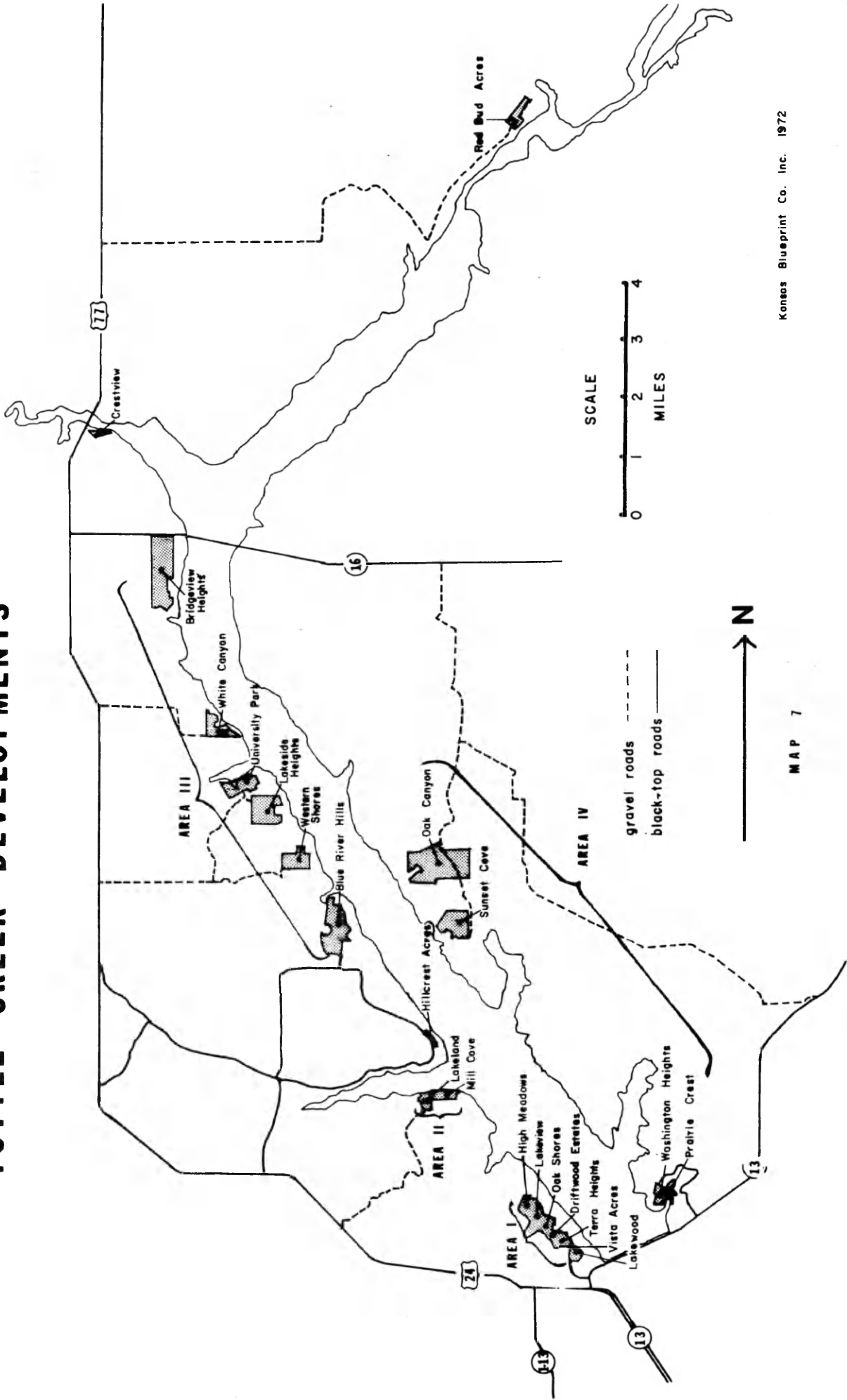
CHAPTER III

REAL ESTATE DEVELOPMENTS

A number of real estate developments have appeared since the construction of Tuttle Creek Dam (Map 7). These developments have all sold lots for the construction of lake side homes and cabins, but there is considerable difference in the price, size, and facilities offered. Many of the developers are local people who were able to obtain a tract of land near the lake or owned land here prior to lake construction. Other developments are large concerns who have purchased tracts of land and subsequently dividing them into individual lake lots.

Considerable contrasts in the type, cost and occupancy of the homes occur from one development to another, and within each development. Developments near the dam are within a few minutes drive of Manhattan, and generally are closely linked to a black-top road. These properties are largely occupied by year round residents. These residents can commute to work in Manhattan and still have the amenities of a lake side home. Moving north along the lake one notes a decrease in the number of permanent homes as the distance from Manhattan increases. In general, the price and size of the lot also decrease as the distance from the dam increases. This is not always the case, because in special situations the price of the lot may be higher. An example could be a particular good view, or water and sewer systems provided.

TUTTLE CREEK DEVELOPMENTS



Kansas Blueprint Co. Inc. 1972

MAP 7

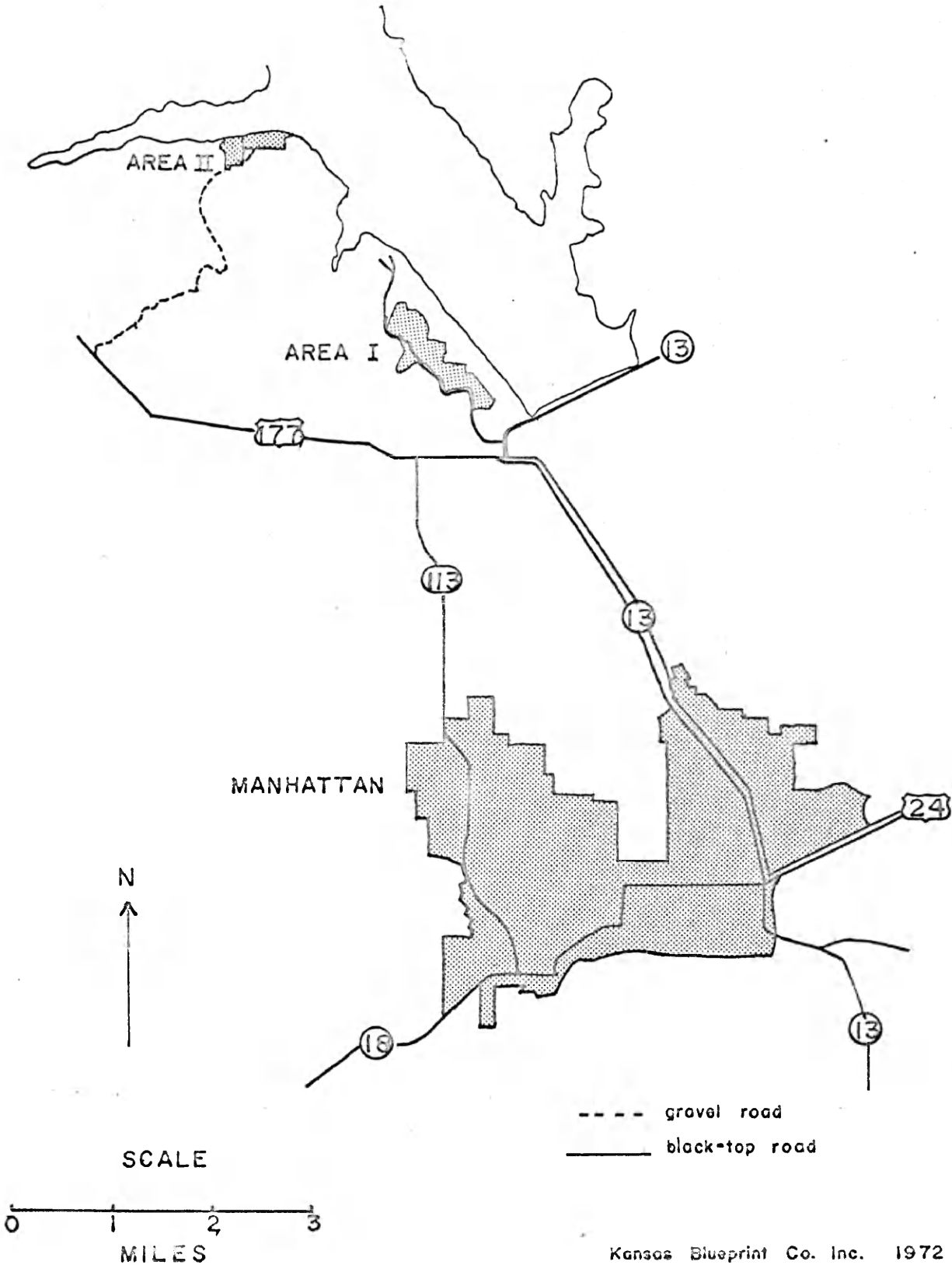
Developments were divided up into different areas, locationally and if the developments were of a similar type. Area I is homes that are permanent residences. Area II consists of smaller homes which are still mainly year round residences. Area III homes consist of both summer homes and permanent residences in a fairly even ratio. Area III developments are large in size in comparison to Area II. Three developments within Riley County were omitted from any area because they were unique. One being all small cabins and the other two being inactive. All developments in Pottawatomie County are in Area IV not because they are all similar, but because there are only four developments within Pottawatomie County.

Area I

The primary area of permanent year-round homes is immediately north of the dam in Riley County (Map 8). In this area a number of small developments are operating, but most of these are controlled by one family. This family owned the land prior to construction of the dam and operated one of the most successful farming operations in the Blue Valley before the reservoir was constructed. The particular farmer did relocate, but retained ownership of his pasture land along the lake's edge and has since developed it along with his children's help.

The development here has excellent connections to Manhattan (Map 8). Highways 13 and 113 tie these properties to the downtown area of Manhattan and the west edge of the city. The distance is approximately six miles. The proximity and transportation linkage

ROAD CONNECTIONS



Kansas Blueprint Co. Inc. 1972

MAP 8

to Manhattan, and the developers requirements have produced a settlement of permanent residences. Developers require a minimum size floor plan from 1,200 to 1,400 square feet depending on the development in which the home is being built.³⁶

This necessitates a large capital investment and restricts the construction of weekend cabins. Proximity and transportation linkage to Manhattan, plus developers' requirements have encouraged the construction of permanent year round residences. Most developers prefer year round residents, since normally this ensures better home maintenance and less vandalism therefore the property should remain attractive and retain value (Plate VI).

One developer cited the mobile camper boom as a threat and cause for a decline of vacation or weekend cabin sales. She was more interested in the construction and the sale of year round permanent residences.

The percentages of homes used as permanent residences was determined by two methods. Tax records were checked and addresses which correspond to the lake home were listed as permanent residents. The problem in this method is that the property owner may rent the home as a permanent residency, in this case the percentage estimate would be low. The other method used to determine the percent of utilized permanent homes, was to analyze the questionnaires returned for this area (Appendix A). The problem with using this method is that there is a greater likelihood that permanent residents would return the questionnaires before non-residents. Because not all

³⁶Mrs. Paul Thompson, Thompson Realty, personal letter, June, 1972.

PLATE VI



These are typical homes of Area I. They are quite elaborate and require a large capital investment.

were returned it is probable that the questionnaire estimate will be high as the tax record estimate is low on the number of year round residents. Both estimates are based on small numbers, but relate the high frequency of year round occupancy of the homes in these developments.

TABLE 5
PERMANENT HOUSING
AREA I

Development	# of houses	Based on Tax Record Address	Based on Questionnaire
Vista Acres	12	81%	100%
Terra Heights	11	83%	100%
Driftwood Estates	9	50%	100%
Lakeview	3	100%	100%
Oak Shores	13	83%	100%
High Meadows	8	57%	100%
Total	56	71%	100%

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

Data above suggests lake front homes here are for year round use. No-where within these development was any home observed that could not be used as a permanent year round residence. The result is that this area represents a Manhattan suburb in a real sense with the amenities associated with water frontage.

What do these developments offer, besides being the closest to Manhattan? The developments themselves offer very little with the exception that some of the areas have their own private boat dock, but the large number of year round residents have attracted numerous services which other less permanent areas have not. All

of these developments in Area I have a daily newspaper delivery of the local Manhattan paper or a Wichita paper. A milk delivery route services the area twice weekly, and a trash route pick up occurs twice monthly.

Developments here require large lots and impose rather stringent building regulations compared to other development areas. Homes must be near 1,200 square feet in area on the first floor, and many homes are considerably more. The homeowner must provide his own water and sewer system. This requires the drilling of individual wells and the construction of separate septic tanks for each home. Only in a few cases is water provided to the lots, and in these cases water could not be found on the lots.

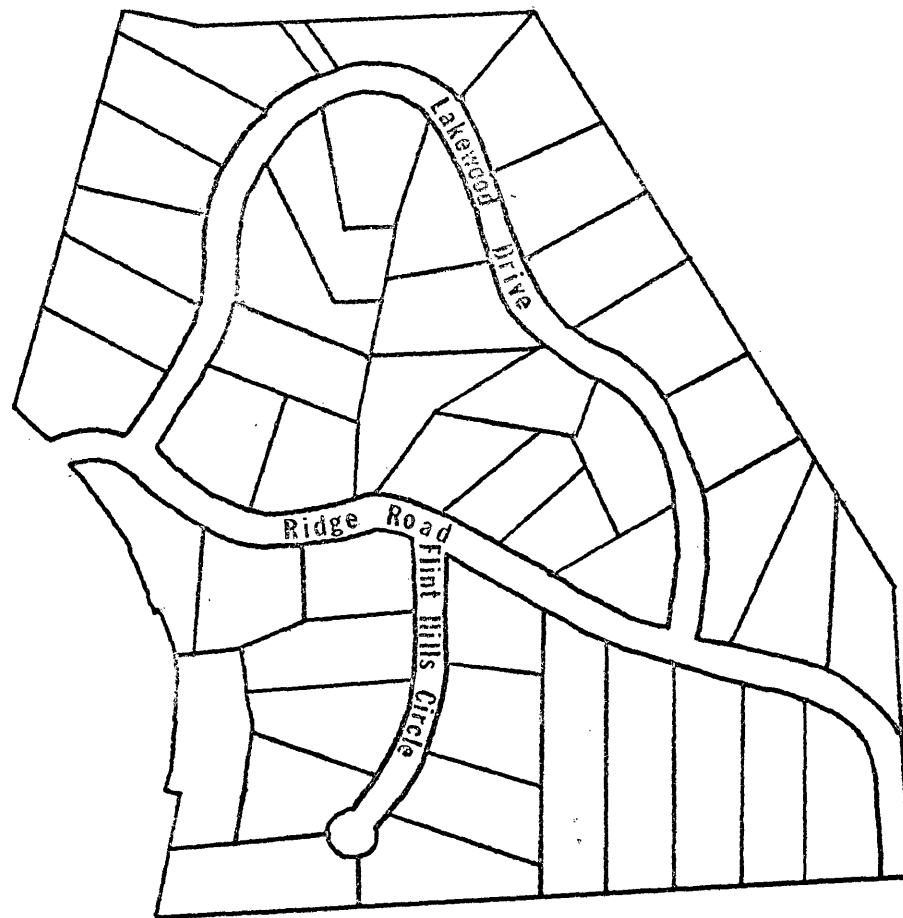
Prices in this area are the highest of anywhere around the lake. For a large lot with a scenic view and a good location a price of \$10,000 may be asked; however, the average prices are lower (Table 6).

TABLE 6
AVERAGE PRICE PER LOT AND AVERAGE SIZE OF LOT
AREA I

Development	# of lots	Price	Size
Lakewood	47	\$5,000	1 acre
Vista Acres	22	\$2,100	.8 acre
Terra Heights	35	\$2,000	.8 acre
Driftwood Estates	25	\$2,900	.8 acre
Lakeview	25	\$2,500	1 acre
Oak Shores	13	\$2,500	1 acre
High Meadows	30	\$2,800	.8 acre
Total	197	\$2,829	.9 acre

Source: Information supplied by developers.

TYPICAL PLAT MAP LAKEWOOD DEVELOPMENT



Source: RILEY COUNTY
PLANNING DEPARTMENT



The size and shape of lots varies considerably (Map 9). The lots have to be surveyed or platted with respect to the topography. Map 9 is a typical development plat map. All of the lots have to have enough ground suitable for construction purposes, and for the lay-out of a septic tank drainage field.

The success of the development in this area may be measured by the number of lots sold. Lakewood development is however a very new development, and was only platted in February of 1972. It is however, the closest development to Manhattan. The area had previously been platted for commercial development, which never occurred. Prices of the lots are probably affected by the date. An older development which sold all or nearly all of its lots a few years back would probably have a lower average price than current developments.

TABLE 7
PERCENTAGE OF LOTS SOLD
AREA I

Development	Total Lots	Number Sold	% Sold	Houses Built
Lakewood	47	8	17%	1
Vista Acres	22	22	100%	12
Terra Heights	35	27	77%	11
Driftwood Estates	25	20	80%	9
Lakeview	25	12	48%	3
Oak Shores	13	13	100%	13
High Meadows	30	23	77%	8
Total	197	125	62%	57

Source: Information supplied by developers.

Valuation of the homes in these developments is the highest

of anywhere around the lake. This is probably due to the fact that they are permanent year round homes, and the family doubtless invests considerably more in the home if it is their primary home and not a second or vacation home.

TABLE 8
AVERAGE HOME EVALUATION
AREA I

Development	# of houses	Tax Valuation	Questionnaire
Vista Acres	12	\$13,456	\$32,000
Terra Heights	11	\$21,456	\$36,000
Driftwood Estates	9	\$19,003	\$36,000
Lakeview	3	\$10,190	\$27,000
Oak Shores	13	\$13,986	\$24,000
High Meadows	8	\$24,176	\$42,000
Total	56	\$17,044	\$32,833

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

The questionnaire's evaluation is the average value from the homeowner's reply for the value of his lakeside home. Tax records were also consulted and a mean was computed for each development for the tax valuation. Not surprisingly the difference between the homeowners and the actual tax valuation is considerable.

Other attractions besides the lakeside amenities have lured homeowners to construct their permanent home in these developments. Favorable location and good road linkage have been mentioned. Tax relief is also a factor. Taxes on a comparable home in the development area would be considerably less than in the city of Manhattan. The wide range between the tax valuation and the

homeowner's valuation is again shown in Tables 9 and 10.

TABLE 9

PERCENT OF HOMES IN VALUATION RANGE BY TAXES:
IN THOUSANDS OF DOLLARS
AREA I

Development	# of houses	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Vista Acres	12	9%	82%	9%					
Terra Heights	11		9%	54%	28%	9%			
Driftwood Est.	9		33%	33%	33%				
Lakeview	3		100%						
Oak Shores	13	17%	35%	50%					
High Meadows	8		14%	14%	14%	14%	14%		
Total	56	5%	36%	31%	15%	10%	3%		

Source: Riley County 1971 Real Estates Taxes.

TABLE 10

PERCENT OF HOMES IN VALUATION RANGE BY QUESTIONNAIRE
IN THOUSANDS OF DOLLARS
AREA I

Development	# of quest.	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Vista Acres	9			11%	33%		33%	11%	11%
Terra Heights	9					33%	44%	11%	11%
Driftwood Est.	2					50%		50%	
Lakeview	4			50%			50%		
Oak Shores	4			50%	25%		25%		
High Meadows	5					20%		40%	40%
Total	33			12%	12%	15%	27%	18%	15%

Source: Homeowners Survey.

Construction costs for a home outside of the city limits of Manhattan could be hundreds of dollars less if the home builder chooses to use building materials that are restricted by the

Manhattan city building code.

The availability of large building lots around the city of Manhattan is limited. The developments in this area supply large one acre average building sites. This size of lot, allows the construction of houses with a lot of green space. The size and type of lot appears to be attractive for the construction of new suburban homes, and this development area has more lots available than any other area plus an excellent connection to Manhattan.

Most of the homes built in this area have been custom built. Homeowners have either contracted the construction or built it themselves. Very few of the homeowners have bought their home already constructed. In other words there is little speculative building. Further there has been little re-sale of homes here. Seventy-five percent of the homeowners purchased the lot and then proceeded to have their home constructed upon the lot instead of buying a home already constructed.³⁷ Although no year or years stand out as a particular strong building period; 1965-1968 appears to be a period when many homes were constructed.³⁸ Building starts also appear to be increasing with many homes started late in the summer of 1971 and some early in 1972. Financing seems to be a major problem, and greatly influences the rate of home construction.

In summary the area just north of the dam in Riley County is primarily an area of permanent year round residents. It is the closest lake front development area to Manhattan and has good

³⁷Homeowners Survey, (Appendix A).

³⁸Ibid.

black-top routes connecting it to Manhattan. The maximum average price per lot and the maximum average valuation per home is also the highest of any development area around the lake. The year-round residences have also attracted numerous services which most other developments have not. Size of lots are also the largest in the developments near the dam. A higher percentage of the lots within these developments are sold which indicates the success of sales in comparison to other development areas.

AREA II

This area of development is just north of the area of permanent year round residences, and is made up of two small developments, Lakeland and Mill Cove (Map 7). These two developments are less than two miles north (straight line) of Area I, but are six to seven miles by road.

Both permanent year round homes and vacation homes are located in this area. Lakeland is mainly small permanent homes while Mill Cove is made up mainly of vacation homes.

TABLE 11

PERMANENT HOUSING
AREA II

Development	# of houses	Based on Tax Record	Based on Address Questionnaire
Lakeland	14	62%	78%
Mill Cove	6	17%	20%
Total	20	47%	57%

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

Percentages were again calculated by using the tax record addresses and the homeowners survey. Lakeland developers stated that they were more interested in small permanent homes than in vacation cabin sales.

These developments again offered boat ramps, and Lakeland has a central water system, since water could not be found on all the lots. Absent are the services attracted by the larger year round occupancies in Area I. Only a trash pick up occurs once monthly.

Average price and size of lots have decreased from the permanent resident area.

TABLE 12
AVERAGE PRICE PER LOT AND AVERAGE SIZE OF LOT
AREA II

Development	# of lots	Price	Size
Lakeland	43	\$1,500	.5 acre
Mill Cove	44	\$2,000	1 acre
Total	87	\$1,750	.75 acre

Source: Information supplied by developers.

These two developments are small, similar in size to the permanent home developments of Area I. Number of lots sold and the number of homes built is again fairly high, showing a comparative degree of success of the development.

TABLE 13
PERCENTAGE OF LOTS SOLD
AREA II

Development	Total Lots	Numer Sold	% Sold	Houses Built
Lakeland	43	37	86%	14
Mill Cove	44	12	27%	6
Total	87	49	56%	20

Source: Information supplied by the developers.

Average valuation of the homes in these two small developments is lower than in Area I. The building restrictions are also considerably less demanding as far as size is concerned. A small lake cabin may be built here, but cannot be built in Area I.

Home valuation was again computed using the tax records and the homeowners survey.

TABLE 14

AVERAGE HOME EVALUATION
AREA II

Development	# of houses	Tax Valuation	Questionnaire
Lakeland	14	\$5,775	\$21,333
Mill Cove	6	\$10,228	\$24,000
Total	20	\$8,001	\$22,666

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

TABLE 15

PERCENT OF HOMES IN VALUATION RANGE BY TAXES
IN THOUSANDS OF DOLLARS
AREA II

Development	# of houses	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Lakeland	14	87%	13%						
Mill Cove	6	33%	67%						
Total	20	64%	36%						

Source: Riley County 1971 Real Estate Taxes.

TABLE 16

PERCENT OF HOMES IN VALUATION RANGE BY QUESTIONNAIRE
IN THOUSANDS OF DOLLARS
AREA II

Development	# of quest.	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Lakeland	9	22%		33%	22%	11%			11%
Mill Cove	5			20%	60%	20%			
Total	14	14%		29%	36%	14%			7%

Source: Homeowners Survey.

These three tables indicate the drop in valuation of the homes from Area I. This reflects the smaller size of the homes and the increase in the number of vacation or weekend cabins, hence the lower valuation.

Also shown is the wide discrepancy between the owner's valuation and the tax valuation.

The reasons for living in these developments as a permanent resident would be similar to Area I. Lower taxes, suburban acreage lot, and of course the lake amenities. Advantages over Area I for permanent homes would be; (1) the size of the home does not have to be so large, lowering the investment, (2) Area II is more secluded or remote being farther from Manhattan with fewer homes, and having worse access. Disadvantages would include (1) poor routes out (two or three miles of gravel roads), (2) greater distance to shopping areas, (3) absence of delivery services.

In general the homes built in Area II are smaller with lower valuation. They have smaller lots, have attracted fewer services and have a considerable drive to a shopping center, part of which is over gravel non-blacktop roads. Approximately one-half of the homes are year round residencies. Homes range in valuation from a low of about three thousand dollars to a high of over forty-five thousand dollars; ranging from small weekend cabins to larger luxury homes.

AREA III

Area III is made up of the discontinuous developments of, Blue River Hills, Western Shores, Lakeside Heights, University Park, White Canyon, and Bridgeview Heights. These developments are in part the product of large concerns who have purchased the land and subdivided it. For example, University Park is a project of the endowment association of Kansas State University. Originally the lots were to be sold only to Kansas State University alumni, staff and faculty. After a period of time, however, the remaining lots unsold were available for sale to anyone.

White Canyon is the smallest development in this area, and has a sister development on the east side of the lake in Pottawatomie County promoted by the same developer. Lakeside Heights and Bridgeview Heights are also the product of one development concern, National Development Company.

Blue River Hills, University Park, and Lakeside Heights are three large developments. They appear to be successful, but Western Shores a large tract between Blue River Hills and Lakeside Heights appears to have had minimal success (Map 7, p. 35). Only three or four cabins have been constructed here and the development now appears to be inactive. Numerous reasons have been expressed for this development's failure such as; a lack of water to supply homes, poor service roads, but no response was available from the developer.

In many ways Blue River Hills and University Park are similar.

Both have a central water system with a water storage reservoir or a water tower. Both also have a central sewage disposal for homes within their development. They both have many year round residents, but the majority of their homes are vacation or resort homes (Plate VII). Both developments also have an excellent boat dock for lot owners. University Park has the only golf course of the developments; a nine hole sand green course. Blue River Hills has the only grass landing strip for small aircraft.

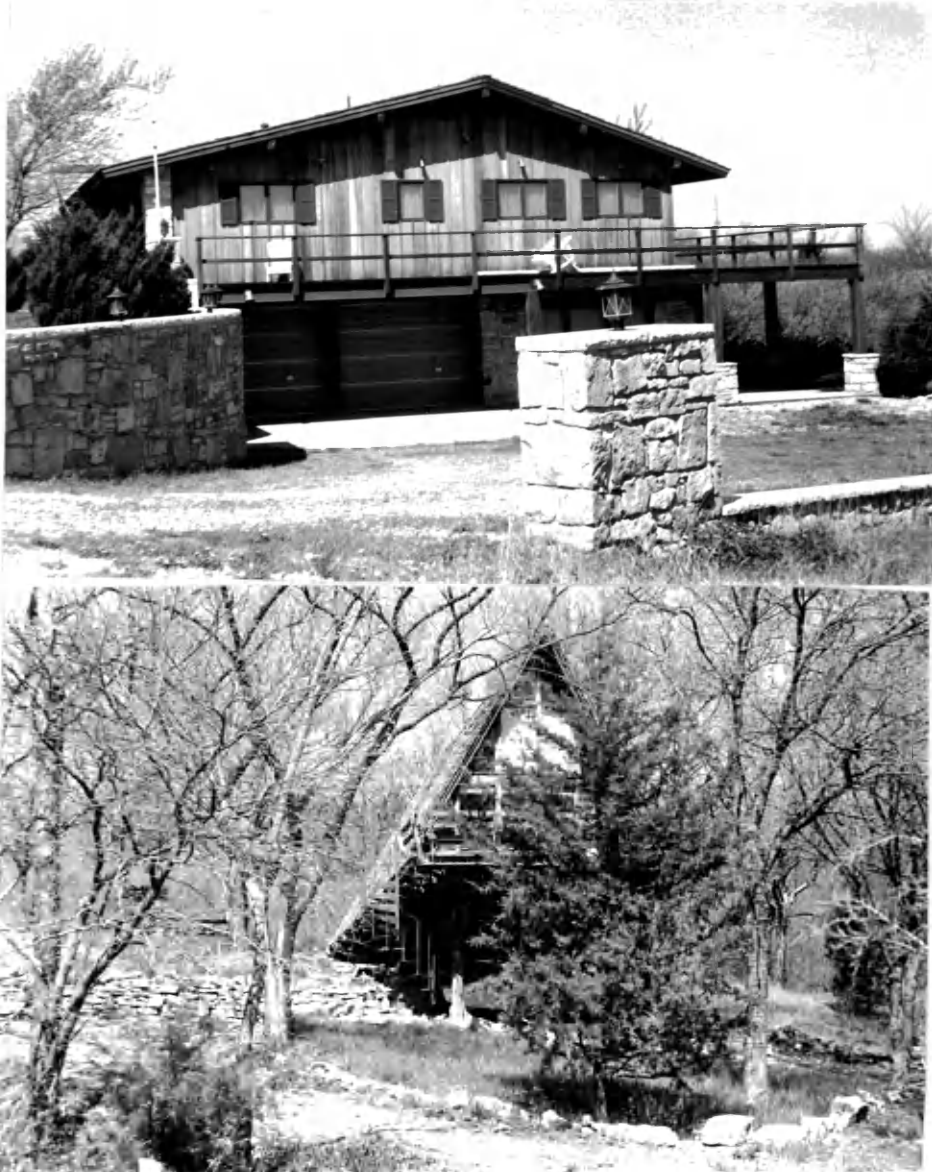
White Canyon, Lakeside Heights and Bridgeview Heights have a great deal in common. They are composed mainly of cabins. Each provides a boat ramp for its lot owners, But does not supply water or a sewer system. In these week-end homes the Board of Health recommends a holding tank for sewage. These tanks must then be pumped out at certain intervals depending useage. Lakeside Heights is the largest of these three developments (Plate VIII).

TABLE 17
PERMANENT HOUSING
AREA III

Development	# of houses	Based on Tax Record	Based on Address	Based on Questionnaire
Blue River Hills	33	28%		27%
Western Shores	2	0%		0%
Lakeside Heights	30	4%		18%
University Park	54	23%		30%
White Canyon	11	0%		14%
Bridgeview Heights	5	0%		17%
Total	135	15%		25%

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

PLATE VII



These are homes typical of Blue River Hills and University Park developments. Both developments have permanent year round homes and vacation homes.

PLATE VIII



These homes are typical of the smaller homes in Area III. The one home appears to be used quite frequently, the other very infrequently.

The number of permanent residences has declined considerably from Area I and is less than Area II. The percentages were again calculated by using tax record addresses and the homeowners survey. The percentage of year round residents is decreasing as the distance from the dam and the distance from Manhattan increases. Table 17 shows the smaller percent of permanent residences and the increasing importance of vacation or week-end homes in the developments.

Services attracted by these developments are again minimal. Only a trash pickup service is available in Blue River Hills, Lakeside Heights and University Park. The pick up occurs only once monthly. Other developments in this area lack even the trash service.

Restrictions upon construction varies in these developments. Blue River Hills is probably the most restrictive with a minimum of 800 square feet in a construction, and only new single family dwellings can be built. Mobile homes or trailer houses are not allowed. University Park allows smaller homes to be constructed but no mobile homes. Lakeside Heights has no restrictions on trailer houses, and one or two mobile homes are currently present in this development.

In general lot size has decreased, yet a minimum square footage must be maintained. Without water being supplied or a central sewage system provided; a lot must be at least one-half acre in size unless a sewage holding tank is used. With the water and sewage system provided to the lot, a lot can be as small as

5,000 square feet.

Prices in general are lower and are considerable less than Area I.

TABLE 18
AVERAGE PRICE PER LOT AND AVERAGE SIZE OF LOT
AREA III

Development	# of lots	Price	Size
Blue River Hills	265	\$2,200	.5 acre
Western Shores	n/a	n/a	n/a
Lakeside Heights	423	n/a	n/a
University Park	368	\$1,400	.33 acre
White Canyon	160	\$750	.5 acre
Bridgeview Heights	523	n/a	.5 acre
Total	1,685	\$1,417	.5 acre

n/a - not available.

Source: Information supplied by developers.

Road linkage varies considerably from one development to another in this area. Blue River Hills is connected to the south by a blacktop road, Riley County 895. Bridgeview Heights the northern-most development in this area is adjacent to highway 16, and also has a blacktop surface for the main road within its development. The other developments, Western Shores, Lakeside Heights, University Park and White Canyon are connected to the outside by all weather gravel roads.

These developments in general are larger in area than the two previous areas discussed, and the number of lots sold is greater but the percentage of lots sold is less. The number of

houses or cabins constructed is fairly high with University Park having the most structures built of any development on the lake. Lakeside Heights and Blue River Hills would rank second and third in total structures behind University Park.

TABLE 19
PERCENTAGE OF LOTS SOLD
AREA III

Development	Total Lots	Number Sold	% Sold	Houses Built
Blue River Hills	265	80	30%	33
Western Shores	n/a	n/a	n/a	n/a
Lakeside Heights	423	400	94%	30
University Park	368	292	80%	54
White Canyon	106	76	70%	11
Bridgeview Heights	523	350	67%	5
Total	1685	1198	71%	133

Source: Information supplied by developers.

Homes vary in valuation with extreme ranges. Again permanent year round homes have a high valuation, but many luxury homes which required a substantial capital investment are unoccupied except for all but one or two weekends a year.

TABLE 20
AVERAGE HOME EVALUATION
AREA III

Development	# of houses	Tax Valuation	Questionnaire
Blue River Hills	33	\$13,642	\$24,000
Western Shores	2	\$4,003	\$12,000
Lakeside Heights	30	\$4,943	\$12,857
University Park	54	\$7,645	\$14,850
White Canyon	11	\$7,324	\$18,857
Bridgeview Heights	5	\$10,017	\$12,000
Total	135	\$7,934	\$18,761

Source: Riley County 1971 Real Estate Taxes, and Homeowners Survey.

TABLE 21
 PERCENT OF HOMES IN VALUATION RANGE BY TAXES
 IN THOUSANDS OF DOLLARS
 AREA III

Development	# of houses	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Blue River H.	33	33%	33%	12%	12%	8%			
Western Shores	2	100%							
Lakeside Hgts.	30	92%	4%	4%					
Univ. Park	54	70%	24%	6%					
White Canyon	11	70%	30%						
Bridgeview Hgts.	5	80%	10%			10%			
Total	135	70%	20%	5%	2%	3%			

Source: Riley County 1971 Real Estate Taxes.

TABLE 22
 PERCENT OF HOMES IN VALUATION RANGE BY QUESTIONNAIRE
 IN THOUSANDS OF DOLLARS
 AREA III

Development	# of quest.	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Blue River H.	15	7%	13%	13%	26%	26%	7%	7%	
Western Shores	1		100%						
Lakeside Hgts.	17	36%	50%		7%			7%	
Univ. Park	38	20%	42%	15%	17%	3%	3%		
White Canyon	7		43%	28%		28%			
Bridgeview Hgts.	6	33%	33%	33%					
Total	84	19%	39%	14%	14%	8%	2%	2%	

Source: Homeowners Survey.

Comparison between the homeowners' evaluation and the tax evaluation is possible by comparing Table 21 and 22. Homeowners continue to have a higher valuation for their property than the tax records indicate.

In general, Area III is more dependent on the vacation or week-end home. The majority of their homes are of this type. Poor road linkage and distance to Manhattan were given as the major cause of fewer permanent homes.

Area III also contains the most homes of the development areas around the lake, but Area I has the highest total valuation.

These developments do offer a secluded location where a week-end cabin can be built. Water recreation is readily available, and the flint hills scenery can be enjoyed. The developments offer the place out of the way to relax.

Services are again minimal, with a trash pick up only once monthly. Other services available are the same that are offered to any rural home.

This area is the most important area for vacation or week-end cabins around the lake.

OTHER DEVELOPMENTS

Only three developments are left to be discussed in Riley County. Red Bud Acres is unique from all the other developments. It is located the farthest north approximately 22 miles from the dam on the lake. The lake at this development's location is beginning to follow the old river channel and not spread across the entire valley. Map 7 (p. 35), indicates how the lake is becoming narrow and sinuous as it follows the old river channel.

Map 7 also shows the road connections for Red Bud Acres. Nine or ten miles of winding gravel roads are the only connections for the development.

There are eleven structures built in the Red Bud Development, and only one of these is a permanent residence, and this residence belongs to the manager of the development. The rest of the structures are very small hunting or fishing cabins with an average tax valuation of only \$2,726 (Plate IX). This development is the only development that is entirely concerned with small minimal shelters. Many of the cabins in the development are old trailer houses used as a lake cabin. Few, if any, restrictions are required by the developer on the type of structure allowed in Red Bud Acres.

Twenty-four lots have been sold out of a total of 58, and average approximately one-half acre in size. The current price of the lots was quoted at \$750. A central water system is available in the development, but no other facilities are offered.³⁹

³⁹Information supplied by development manager.

PLATE IX



These are typical cabins prevalent in Red Bud Acres. Notice in both cases that a trailer house has been built onto, to form the lakeside cabin.

Services consist of electricity, telephone and a mail delivery which are provided to any rural home. The developer stated that the people must be able to entertain themselves; the development mainly provides lakeside seclusion.

Two other developments are shown on Map 7 (p. 35) in Riley County. Crestview development is apparently idle. It is a small development on the Fancy Creek arm of the lake. One cabin has been built in this development and it is owned by the developer. He uses the cabin quite frequently on weekends. There is also one trailer parked in this development, this being a permanent residence. Crestview development is similar to Western Shores in the respect that both developments are nearly idle, and little activity has occurred at the developments for a number of years.

Hillcrest Acres is also a small development located just south of the Blue River Hills development near the Stockdale recreation area on Mill Creek. It was inactive for a number of years, but recently two new houses have been built here. In this case the developer is a local farmer who owns land overlooking the lake. He also owns the only motel, Lakeview Motel, which overlooks the lake. The first home was built in the development by the developer for sale, which was accomplished with some difficulty and now another house is nearing completion. Both houses have a beautiful view of the lake, and are permanent type structures. The developer also has his own home built near the development overlooking the lake.

AREA IV

Area IV includes all of Pottawatomie County. There are only four developments within Pottawatomie County and one of these does not have any structures built within it; Sunset Cove is the houseless development. Sunset Cove is located immediately south of the Oak Canyon development on a gravel road (Map 7, p. 35). The only connection to the development is through the Oak Canyon development. Sunset Cove does have numerous lots and has been platted for several years, but no lots have been sold and the development is completely inactive at this time.

Oak Canyon is the other northern development in Pottawatomie County (Map 7, p. 35). This is a large development and has a number of homes constructed; the largest total of any development in Pottawatomie County. The development is unique and different from others across the lake in that a greater proportion of its homes are permanent residences and it is miles away from any blacktop road or a community of any size.

TABLE 23
PERMANENT HOUSING
AREA IV

Development	# of houses	Based on Tax Record	Based on Address Questionnaire
Prairie Crest	1	100%	100%
Washington Hgts.	4	75%	100%
Oak Canyon	19	37%	55%
Sunset Cove	0	00%	00%
Total	24	46%	67%

Source: Pottawatomie County 1971 Real Estate Taxes, and Home-owners Survey.

Prairie Crest and Washington Heights are close to the dam and on a blacktop road, which gives them good connecting links to Manhattan (Map 7, p. 35). There are only five homes built in these two developments and all appear to be capable of year round residency.

TABLE 24
AVERAGE PRICE PER LOT AND AVERAGE SIZE OF LOT
AREA IV

Development	# of lots	Price	Size
Prairie Crest	55	\$2,000	1 acre
Washington Heights	40	\$2,000	1 acre
Oak Canyon	304	\$500	.5 acre
Sunset Cove	65	\$2,500	1 acre
Total	464	\$1,750	.875 acre

Source: Information supplied by developers.

A large difference in price and size can be seen within Area IV. As noted above, Oak Canyon is the largest development in Pottawatomie County and price may be an important factor in its growth. Sunset Cove may be handicapped by high price. The other developments are close to the dam with good road connections and probably can demand a higher price due to location or proximity to Manhattan.

Oak Canyon is the most important development in Pottawatomie County. Approximately 20 homes exist in this development ranging from small cabins to sizeable permanent homes.

TABLE 25
PERCENTAGE OF LOTS SOLD
AREA IV

Development	Total Lots	Number Sold	% Sold	Houses Built
Prairie Crest	55	55	100%	1
Washington Heights	40	n/a	n/a	4
Oak Canyon	304	150	49%	19
Sunset Cove	65	00	00%	0
Total	464	205*	44%*	24

* Statistics will be inaccurate because of unavailable data.
Source: Information supplied by developers.

Pottawatomie County's contribution or share of the lakeside homes is small compared to Riley County. Two reasons have been advanced for the lack of lake front homes on the east side of the lake in Pottawatomie County. Poor road connections seems to be a valid argument since much of the lake on the east side is inaccessible to the common passenger car. Another reason is that the glare of the sun off the water in the late afternoon would be detrimental for homes on the east side of the lake. This explanation may possess merit; however, it is impossible to measure.

TABLE 26
AVERAGE HOME EVALUATION
AREA IV

Development	# of houses	Tax Valuation	Questionnaire
Prairie Crest	1	\$17,216	\$48,000
Washington Heights	4	\$15,851	\$45,100
Oak Canyon	19	\$ 5,787	\$16,363
Sunset Cove	0	000	000
Total	24	\$12,951	\$36,488

Source: Pottawatomie County 1971 Real Estate Taxes, and Home-owners Survey.

The few homes built next to the dam are high value compared to those built in Oak Canyon. Yet approximately one-half of Oak Canyon's homes are small cabins.

TABLE 27
PERCENT OF HOMES IN VALUATION RANGE BY TAXES
IN THOUSANDS OF DOLLARS
AREA IV

Development	# of houses	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Prairie Crest	1			100%					
Washington Hgts.	4		50%	50%					
Oak Canyon	19	89%	11%						
Sunset Cove	0								
Total	24	70%	17%	13%					

Source: Pottawatomie County 1971 Real Estate Taxes.

TABLE 28
PERCENT OF HOMES IN VALUATION RANGE BY QUESTIONNAIRE
IN THOUSANDS OF DOLLARS
AREA IV

Development	# of quest.	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Prairie Crest	1								100%
Washington Hgts.	3							33%	67%
Oak Canyon	11	18%	36%	18%	9%	18%			
Sunset Cove	0								
Total	15	13%	26%	13%	7%	13%		7%	20%

Source: Homeowners Survey.

It would seem likely that Prairie Crest and Washington Heights developments will continue to develop as an area of permanent year round homes of high value similar to Area I in Riley County. It would also seem feasible that Oak Canyon and possibly Sunset Cove

will continue to develop similar to Area III in Riley County and especially similar to Lakeside Heights or Blue River Hills developments. At present it appears that Pottawatomie County developments are considerably behind other developments in progress and success or in the number of lots sold and homes built for numerous reasons.

Great differences exist between the 22 developments surrounding Tuttle Creek Reservoir. Some developments are permanent year round housing developments compared to some developments which are primarily resort cabins. Distance and road linkage to Manhattan varies greatly and helps explain the variety in the developments.

A final comparison of all the developments can be made by analysing the following tables (Tables 29 - 34). Developments are listed by county and then listed as distance from the dam increases. Developments closest to the dam and to Manhattan by county are listed first.

TABLE 29
PERMANENT HOUSING

Development	# of houses	Based on Tax Record	Based on Address	Based on Questionnaire
Riley County				
Lakewood	1	00%		00%
Vista Acres	12	81%		100%
Terra Heights	11	83%		100%
Driftwood Estates	9	50%		100%
Oak Shores	13	83%		100%
Lakeview	3	100%		100%
High Meadows	8	57%		100%
Lakeland	14	62%		78%
Mill Cove	6	17%		20%
Hillcrest Acres	2	00%		00%
Blue River Hills	33	28%		27%
Western Shores	2	00%		00%
Lakeside Heights	30	4%		18%
University Park	54	23%		30%
White Canyon	11	00%		14%
Bridgeview Heights	5	00%		17%
Crestview	1	00%		00%
Red Bud Acres	11	9%		20%
Pottawatomie County				
Prairie Crest	1	100%		100%
Washington Heights	4	75%		100%
Oak Canyon	19	37%		55%
Sunset Cove	0	00%		00%
Total	250	36%		48%

Source: Riley County and Pottawatomie County 1971 Real Estate Taxes, and Homeowners Survey.

The table is arranged by counties and then the developments are listed by their distance from the dam by road. The closest are listed first. Year round homes in general decline as the distance from the dam and Manhattan increases. There are exceptions in some of the developments, but they are developments that have very few homes. Therefore, two or three permanent residences would give them a high percentage.

TABLE 30
AVERAGE PRICE PER LOT AND AVERAGE SIZE OF LOT

Development	# of lots	Price	Size
Riley County			
Lakewood	47	\$5,000	1 acre
Vista Acres	22	\$2,100	.8 acre
Terra Heights	35	\$2,000	.8 acre
Driftwood Estates	25	\$2,900	.8 acre
Oak Shores	13	\$2,500	1 acre
Lakeview	25	\$2,500	1 acre
High Meadows	30	\$2,800	.8 acre
Lakeland	43	\$1,500	.5 acre
Mill Cove	44	\$2,000	1 acre
Hillcrest Acres	21	\$2,500	.5 acre
Blue River Hills	265	\$2,200	.5 acre
Western Shores	n/a	n/a	n/a
Lakeside Heights	423	n/a	.5 acre
University Park	368	\$1,400	.33 acre
White Canyon	106	\$ 750	.5 acre
Bridgeview	523	n/a	.5 acre
Crestview	10	n/a	1 acre
Red Bud Acres	58	\$ 750	.5 acre
Pottawatomie County			
Prairie Crest	55	\$2,000	1 acre
Washington Heights	40	\$2,000	1 acre
Oak Canyon	304	\$ 500	.5 acre
Sunset Cove	65	\$2,500	1 acre
Total	2,522	\$2,105	.74 acre

n/a - data not available.

Source: Information supplied by developers.

These are average prices of lots. Many lots may have higher prices because they have a good view, and lots located at poor sites within the development will have lower prices. Prices appear to be higher near the dam, and the size of the lots are larger here also. Facilities that the developments offer affect the price. A development with central water and a sewer system will have higher priced lots.

TABLE 31
PERCENTAGE OF LOTS SOLD

Development	Total Lots	Number Sold	% Sold	Houses Built
Riley County				
Lakewood	47	8	17%	1
Vista Acres	22	22	100%	12
Terra Heights	35	27	77%	11
Driftwood Estates	25	20	80%	9
Oak Shores	13	13	100%	13
Lakeview	25	12	48%	3
High Meadows	30	23	77%	8
Lakeland	43	37	86%	14
Mill Cove	44	12	27%	6
Hillcrest Acres	21	2	9%	2
Blue River Hills	265	80	30%	33
Western Shores	n/a	n/a	n/a	2
Lakeside Heights	423	400	94%	30
University Park	368	292	79%	54
White Canyon	106	76	72%	11
Bridgeview Heights	523	350	67%	5
Crestview	10	1	10%	1
Red Bud Acres	58	24	41%	11
Pottawatomie County				
Prairie Crest	55	55	100%	1
Washington Heights	40	n/a	n/a	4
Oak Canyon	304	150	49%	19
Sunset Cove	65	0	0%	0
Total	2,522	1,604	64%	250

Source: Information supplied by developers.

Developments near the dam are all small in total lots compared to those located around the central part of lake. The farthest north developments are again fairly small. Most of the developments have a number of lots sold, or a high percentage of lots sold. It is highest near the dam and in the developments in Riley County and in the central location along the lake. These two areas (I and III) also have the most structures built.

TABLE 32

AVERAGE HOME EVALUATION

Development	# of houses	Tax Valuation	Questionnaire
Riley County			
Lakewood	1	- - - *	- - - *
Vista Acres	12	\$13,455	\$32,000
Terra Heights	11	\$20,164	\$36,000
Driftwood Estates	9	\$19,003	\$36,000
Oak Shores	13	\$13,986	\$24,000
Lakeview	3	\$10,189	\$45,000
High Meadows	8	\$24,177	\$42,000
Lakeland	14	\$ 5,775	\$21,333
Mill Cove	6	\$10,228	\$24,000
Hillcrest Acres	2	- - - *	- - - *
Blue River Hills	33	\$13,642	\$24,000
Western Shores	2	\$ 4,003	\$12,000
Lakeside Heights	30	\$ 4,943	\$12,428
University Park	54	\$ 7,645	\$14,923
White Canyon	11	\$ 7,324	\$18,857
Bridgeview Heights	5	\$10,017	\$12,000
Crestview	1	\$ 6,834	\$12,000
Red Bud Acres	11	\$ 2,726	\$12,000
Pottawatomie County			
Prairie Crest	1	\$17,216	\$48,000
Washington Heights	4	\$15,851	\$45,100
Oak Canyon	19	\$ 5,787	\$16,363
Sunset Cove	0	\$ 0,000	\$ 0,000
Total	250	\$11,453	\$27,111

* homes were built since the 1971 tax record address check.

Source: Riley County and Pottawatomie County 1971 Real Estate Taxes, and Homeowners Survey.

This table shows the average valuation of a home using tax records and the questionnaire. Highest valuations are near the dam in both counties. Valuations in general decrease as distance from the dam increases. Again developments with a few homes and one or two of these homes with a high valuation may raise the development average valuation considerable.

TABLE 33

PERCENT OF HOMES IN VALUATION RANGE BY TAXES
IN THOUSANDS OF DOLLARS

Development	# of houses	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Riley County									
Lakewood	1*								
Vista Acres	12	9%	82%	9%					
Terra Heights	11		9%	54%	28%	9%			
Driftwood Est.	9		33%	33%	33%				
Oak Shores	13	17%	33%	50%					
Lakeview	3		100%						
High Meadow	8		14%	14%	14%	43%	14%		
Lakeland	14	87%	13%						
Mill Cove	6	33%	67%						
Hillcrest Acres	2*								
Blue Riv. Hills	33	33%	33%	12%	12%	8%			
Western Shores	2	100%							
Lakeside Hgts.	30	93%	4%	3%					
Univ. Park	54	70%	24%	6%					
White Canyon	11	70%	30%						
Bridgeview Hgts.	5	80%	10%			10%			
Crestview	1	100%							
Red Bud Acres	11	100%							
Pottawatomie County									
Prairie Crest	1			100%					
Washington Hgts.	4		50%	50%					
Oak Canyon	19	89%	11%						
Sunset Cove	0								
Total	250	60%	23%	10%	3%	2%	1/2%		

* Houses were not constructed during 1971 taxing period.

Source: Riley County and Pottawatomie County 1971 Real Estate Taxes.

The large percentage of low value homes is in the central area along the lake and the highest percentage of high value homes is in the area closest to the dam. Most of the homes are of a fairly low tax value. Again in the smaller developments one or two houses in a category may give it a high percentage because of the few homes in the development. Blank development percentages are the result of no homes within the development subject to 1971 taxes.

TABLE 34
 PERCENT OF HOMES IN VALUATION RANGE BY QUESTIONNAIRE
 IN THOUSANDS OF DOLLARS:

Development	# Of Quest.	\$ 3-9	9-15	15-21	21-27	27-33	33-39	39-45	45+
Riley County									
Lakewood	0								
Vista Acres	9			11%	33%		33%	11%	11%
Terra Heights	9					33%	44%	11%	11%
Driftwood Est.	2					50%		50%	
Oak Shores	4			50%	25%		25%		
Lakeview	4							50%	50%
High Meadows	5					20%		40%	40%
Lakeland	9	22%		33%	22%	11%			11%
Mill Cove	5			20%	60%	20%			
Hillcrest Acres	0								
Blue River Hills	15	7%	14%	14%	28%	28%	7%	7%	
Western Shores	1		100%						
Lakeside Heights	17	43%	43%		7%			7%	
University Park	38	20%	42%	15%	17%	3%	3%		
White Canyon	7		43%	28%		28%			
Bridgeview Hgts.	6	33%	33%	33%					
Crestview	1		100%						
Red Bud Acres	5	40%	40%	20%					
Pottawatomie County									
Frairie Crest	1								100%
Washington Hgts.	3							33%	67%
Oak Canyon	11	18%	36%	18%	9%	18%			
Sunset Cove	0								
Total	162	15%	30%	13%	15%	10%	6%	6%	6%

Source: Homeowners Survey.

Table 34 shows a spread through out the valuation ranges and little clustering in the lower valuation ranges as the tax valuation indicated (Table 33). Higher valuation are again shown in the areas around the dam and the lower valuations are shown in the large developments along the central part of the lake.

CHAPTER IV

OCCUPANTS

The occupants of the many homes surrounding Tuttle Creek Reservoir may be even more varied than the homes. Each individual has his own particular reason or host of reasons, which are or were important in the decision of locating a home near the lake. This chapter will make some general statements concerning the occupants of the lakeside homes. Since the statements are dealing with people they must be very general.

It would seem probable that a development would attract people with similar interests, traits, etc. Therefore, the developments will be discussed by using the area delimitation used in the previous chapter.

Socio-economic indicators, age, occupation, income and education were used to compared the development areas.

TABLE 35

AVERAGE AGE OF OCCUPANT HEAD AND SPOUSE
AREA I

Development	Age		Returned Questionnaires
	Family Head	Spouse	
Vista Acres	47	42	9
Terra Heights	49	45	9
Driftwood Estates	38	35	2
Oak Shores	53	52	4
Lakeview	44	38	4
High Meadows	49	46	5
Total	47	43	33

Source: Homeowners Survey.

Average age of the family head and spouse in the permanent homes or Area I is slightly lower than the majority of the other developments. These will be compared later in the chapter.

Occupations were classified into five different categories (retired, labor, skilled, business and professional). Occupants were placed within different occupation categories primarily upon the author's judgement about job classification. The retired column also includes those unemployed.

The professional category includes the teaching profession, which is very important in all the development areas around the lake, but particularly in Area I where a number of the Kansas State University faculty have their home.

TABLE 36
OCCUPATION OF FAMILY HEAD
AREA I

Development	Retired	Labor	Skilled	Business	Professional	Quest.
Vista Acres		11%	11%	44%	33%	9
Terra Heights			33%	33%	33%	9
Driftwood Estates		50%			50%	2
Oak Shores	25%	25%		25%	25%	4
Lakeview			25%	25%	50%	4
High Meadows				60%	40%	5
Total	3%	9%	15%	36%	36%	33

Source: Homeowners Survey.

Occupational differences which relates to the age characteristics show that Area I has fewer retired persons living in these developments.

Closely related to occupation is the total family income.

TABLE 37
 AVERAGE FAMILY INCOME
 AREA I

Development	Income	Questionnaires
Vista Acres	\$18,055	9
Terra Heights	\$19,166	9
Driftwood Estates	\$15,000	2
Oak Shores	\$10,000	4
Lakeview	\$18,750	4
High Meadows	\$19,500	5
Total	\$17,500	33

Source: Homeowners Survey.

Variation does exist between the average family income within the developments in Area I. But only Oak Shores development is considerably lower than the average. Fifty percent of the occupants of this development are retired which could greatly reduce the average income for the entire development.

Educational achievement is another measure which can be closely related to a person's occupation and income. Average educational level of the family head was determined by the homeowners questionnaire. Percentages stated in Table 36 and Table 38 were sometimes based on a small return of the questionnaire or a small number of houses in the development. Income averages, Table 37, and average ages, Table 35 are also sometimes computed on a small number of questionnaires.

TABLE 38
 AVERAGE EDUCATION ACHIEVEMENT OF FAMILY HEAD
 AREA I

Development	less than High School	High School	Some College	Bachelor Degree	Advanced College	ret. Quest.
Vista Acres		22%	22%	22%	33%	9
Terra Heights		33%	22%	11%	33%	9
Driftwood Estates		50%			50%	2
Oak Shores		25%		50%	25%	4
Lakeview			25%	25%	50%	4
High Meadows		20%		20%	60%	5
Total		24%	15%	21%	39%	33

Source: Homeowners Survey.

A close correlation may be seen between the percentage of professional occupations and advanced college work. Again this relates to the number of faculty members from Kansas State University living in this area.

High income, high educational achievement, and a high percentage of professional and business occupations are attributes of the occupants of Area I.

In summary the occupants of Area I appear to be mainly business and professional people having above average income. Age characteristics appear to be upper middle age and the educational level is considerably above normal. Normal or average for these socioeconomic factors for Riley and Pottawatomie County are, median income \$7,340, educational level 12.4 grade completion, median age 27.8, occupation according to the author classification can be estimated as follows for the two counties; professional 20%, business 39%, skilled 31% and labor 10% of the work force.⁴⁰

⁴⁰Bureau of Census, General Population Characteristics 1970, Kansas.

AREA II

The occupants of Area II are, in general, very similar to the occupants of Area I. Age structure is nearly the same if you compare the total average of Area I to Area II. The two small developments within Area II are very different in a number of ways from each other. One difference is the average age with Lakeland development much younger than Mill Cove.

TABLE 39
AVERAGE AGE OF OCCUPANT HEAD AND SPOUSE
AREA II

Development	Age		Returned Questionnaires
	Family Head	Spouse	
Lakeland	37	39	9
Mill Cove	64	59	5
Total	47	47	14

Source: Homeowners Survey.

One explanation of the average age difference between the two developments in Area II is that Lakeland development is primarily one of small permanent homes while Mill Cove is mainly vacation homes (Table 11, page 48). Lakeland may attract young married couples who want to live near the lake, but can not afford the more expensive homes typical of Area I. They therefore select Lakeland as the best alternative, being close to Manhattan and not requiring the construction of a large home. Lakeland is a development of the same concern which is the primary developer and promoter in Area I.

Area II occupational statistics are very similar to Area I showing a high percentage of the family heads working in business and professional fields.

TABLE 40
OCCUPATION OF FAMILY HEAD
AREA II

Development	Retired	Labor	Skilled	Business	Professional	Quest.
Lakeland	22%	11%	11%	22%	33%	9
Mill Cove			20%	80%		5
Total	14%	7%	14%	43%	22%	14

Source: Homeowners Survey.

No large variation is depicted in occupations from Area I to Area II.

Average income in Area II is slightly higher than Area I based on average for each area. Area II does show a substantial difference between the two developments in income. This again may be the result of the fact that younger families with lower incomes may be living in Lakeland as compared to the older aged owners in Mill Cove who use the development mainly for second or vacation homes.

TABLE 41
AVERAGE FAMILY INCOME
AREA II

Development	Income	Questionnaires
Lakeland	\$15,000	8
Mill Cove	\$24,500	5
Total	\$18,577	13

Source: Homeowners Survey.

Educational achievement of the family head again approximates that of Area I.

TABLE 42
AVERAGE EDUCATION ACHIEVEMENT OF FAMILY HEAD
AREA II

Development	less than High School	High School	Some College	Bachelor Degree	Advanced College	ret. quest.
Lakeland		25%	25%	25%	25%	8
Mill Cove			25%	50%	25%	4
Total		17%	25%	33%	25%	12

Source: Homeowners Survey.

The total average of the occupant statistics (age, occupation, income, and education) of Area II is quite similar to Area I. Area II does have a discrepancy within it; the two developments, Lakeland and Mill Cove are dissimilar, but when these two developments are averaged together the total average is very close to results obtained in Area I.

The discrepancy within Area II maybe in part, explained by the fact that Lakeland is mainly small permanent homes, while Mill Cove, the other development in Area II, is largely vacation homes.

The distance traveled from an owners permanent home to his lakeside home becomes important in Area II. These data were not mentioned for Area I because all homes in Area I are permanent year round residences.

TABLE 43
DISTANCE OF PERMANENT HOME FROM LAKE HOME
AREA II

Development	Miles	0-50	51-100	101-200	201-300	301 +	Responses
Lakeland		100%					2
Mill Cove			75%	25%			4
Total		20%	60%	20%			6

Distance is given in miles in a straight line distance.

Source: Homeowners Survey.

In Lakeland the few homes that are not permanent homes are owned by owners who live within a short distance of their lakeside property. Mill Cove proprietors are considerably more scattered with the majority of the owners living from 51 to 100 miles of the development.

AREA III

The occupants of Area III have a somewhat older average age than the two previous areas.

TABLE 44

AVERAGE AGE OF OCCUPANT HEAD AND SPOUSE
AREA III

Development	Age		Returned Questionnaire
	Family Head	Spouse	
Blue River Hills	53	50	15
Western Shores	49	47	1
Lakeside Heights	55	53	17
University Park	58	57	38
White Canyon	50	46	6
Bridgeview Heights	50	47	6
Total	55	53	83

Source: Homeowners Survey.

The average age of Area III is higher because of the larger percentage of retired persons owning a home within this area. University Park has the oldest average age for the six developments within Area III. This may be the result of the number of homes that are permanent residences and occupied by retired Kansas State University employees.

As would be expected, when average age increases the percentage of retired occupants in the lakeside home increases. Table 44 shows the major increase in retired occupants. Professional and business occupations still have a greater percentage, but the retired percentage has increased substantially over the first two areas.

TABLE 45
OCCUPATION OF FAMILY HEAD
AREA III

Development	Retired	Labor	Skilled	Business	Professional	Quest.
Blue River Hills	13%		7%	47%	33%	15
Western Shores					100%	1
Lakeside Heights	38%	12%	12%	19%	19%	16
University Park	18%	2%	23%	26%	31%	39
White Canyon	33%			33%	33%	6
Bridgeview Hgts.	17%		33%		50%	6
Total	22%	4%	17%	26%	31%	83

Source: Homeowners Survey.

Variation between the developments within Area III as to occupation does occur. Western Shores with a zero percentage of retired occupants is a very small development with only two cabins. This probably accounts for its zero percentage. A paradox may be noted in average age (Table 44) and occupation (Table 45) in the case of University Park. This development has the highest average age, but does not have the highest percentage of retired occupants.

TABLE 46
AVERAGE FAMILY INCOME
AREA III

Development	Income	Questionnaires
Blue River Hills	\$18,929	14
Western Shores	\$12,500	1
Lakeside Heights	\$14,500	15
University Park	\$16,474	39
White Canyon	\$20,833	6
Bridgeview Heights	\$13,333	6
Total	\$15,725	81

Source: Homeowners Survey.

Average income per family in Area III is somewhat lower than in Areas I and II, but not a large amount.

The larger percentage of retired occupants in Area III may be reflected in the lower average income, but within Area III it is not the developments with a high percentage of retired occupants that have the lowest incomes. White Canyon is quite the opposite. It has a relatively high percentage of retired people as owners of the lakeside homes, but the average income is the highest of any of the developments in Area III. This discrepancy can probably be explained by stating that White Canyon is another small development, and that its average income is high because two medical doctors with high annual incomes own homes within this development.

The education of the family head also shows a fairly close correlation between occupation and family income.

TABLE 47

AVERAGE EDUCATION ACHIEVEMENT OF FAMILY HEAD
AREA III

Development	less than High School	High School	Some College	Bachelor Degree	Advanced College	ret. Quest.
Blue River Hills		7%	33%	20%	40%	15
Western Shores				100%		1
Lakeside Heights	23%	47%	12%	6%	12%	17
University Park	5%	13%	23%	26%	33%	39
White Canyon	17%		17%	33%	33%	6
Bridgeview Hgts.	17%	17%	17%	17%	33%	6
Total	9%	18%	21%	21%	30%	84

Source: Homeowners Survey.

Blue River Hills, University Park, White Canyon and Bridgeview Heights all show a positive correlation on these three qualities. Retired occupants could effect this correlation in some instances. Their income may not correlate strongly with their educational achievement.

In Area III there has been an increase in the percentage of people who have less than a high school education. This corresponds to the older average age. Education perhaps was not considered as important nor as available to the older residents. Lakeside Heights and White Canyon tend to express this correlation between the number retired (Table 45) and the percentage with less than a high school education (Table 47).

Distance traveled from the owner's permanent residence to his lakeside home shows little difference between Area II to Area III.

TABLE 48
DISTANCE OF PERMANENT HOME FROM LAKE HOME
AREA III

Development	Miles	0-50	51-100	101-200	201-300	301 +	Responses
Blue River Hills		73%	9%	18%			11
Western Shores		100%					1
Lakeside Heights		29%	58%	7%		7%	14
University Park		44%	22%	26%		8%	29
White Canyon		17%	83%				6
Bridgeview Heights			40%	60%			5
Total		39%	34%	20%	0%	5%	66

Distance is given in miles in a straight line distance.

Source: Homeowners Survey.

Most owners live within a 50 mile radius of their lakeside home, but those living from 51 to 100 miles are nearly as numerous. Many homes within Area III are also owned by owners within the 100 to 200 mile radius. Those few owners who were beyond the 300 plus mile limit were often owners who had been transferred or moved from their original home, when they acquired their lakeside home. They were generally trying to sell their lakeside home at the time of this investigation, although some owners were planning on returning and living in their lakeside homes upon their retirement.

In summary, Area III is different from Area I and II in one major aspect concerning occupants. The average age of Area III is older than the first two areas. This also related closely to the number of retired occupants and as stated previously may be correlated to educational achievement.

Area III is the first area with a substantial number of non-permanent residences. Distances traveled by the owners of the vacation homes in Area III compared similar to the few vacation homeowners in Area II.

OTHER DEVELOPMENTS WITHIN RILEY COUNTY

The occupants of the final three developments in Riley County are confined only to Red Bud Acres. At the time of this investigation, Crestview showed no activity and Hillcrest Acres had new homes under construction, but no occupants.

Red Bud Acres is a small community of only eleven small cabins, one of which is the permanent residence of the manager. Five questionnaires were returned by the owners of the cabins in Red Bud Acres. Average age for these five responses is 55 for the family head and 53 for the spouse. Occupation results are one retired, three skilled, and one professional. Educational achievement is, one with a high school education, two with some college, and two with advanced college work. Income for the five returns varied considerable with one over \$25,000 (a physician), two from \$10,000 to \$14,999, and two from \$5,000 to \$9,999.

Distance traveled to these lake cabins was not large. Four of the five responses are from owners living in southern Nebraska. They have to travel slightly under 50 miles to reach their lakeside cabins. The individual who returned the other questionnaire had to travel approximately 80 miles to reach his lakeside cabin from his permanent address.

AREA IV

Area IV is concerned only with the Pottawatomie County developments. Sunset Cove has no occupants or structures, so it is omitted from discussion and tables in this chapter. The remaining three developments in Pottawatomie County could be split into two regions. Prairie Crest and Washington Heights are close to the dam and have good blacktop road connections. The homes in these two developments are all permanent year round residences. These two developments together have only five houses constructed.

Oak Canyon, the other development in Pottawatomie County is larger. It has both vacation homes and permanent year round residents. This development is located in a secluded area along the east side of the lake (Map 7, p. 35). Several miles of gravel road must be traveled to reach the development by car.

Average age of Area IV is slightly higher than Area III.

TABLE 49
AVERAGE AGE OF OCCUPANT HEAD AND SPOUSE
AREA IV

Development	Age		Returned Questionnaires
	Family Head	Spouse	
Prairie Crest	55	51	1
Washington Heights	61	59	3
Oak Canyon	57	57	11
Sunset Cove	00	00	0
Total	57	56	15

Source: Homeowners Survey.

Average age corresponds closely with the percentage of retired occupants. Area IV has the highest percentage of the four areas for retired occupants ownership.

TABLE 50
OCCUPATION OF FAMILY HEAD
AREA IV

Development	Retired	Labor	Skilled	Business	Professional	Quest.
Prairie Crest				100%		1
Washington Hgts.			33%		67%	3
Oak Canyon	42%	8%	16%	8%	25%	12
Sunset Cove						0
Total	31%	6%	19%	12%	31%	16

Source: Homeowners Survey.

The increase in retired occupants is made up by a decrease in the business occupation. The other career areas have a percentage nearly the same as Area III.

Average family income is also similar to Area III. Only a few hundred dollars difference is recorded in the total average of each area.

TABLE 51
AVERAGE FAMILY INCOME
AREA IV

Development	Income	Questionnaires
Prairie Crest	\$17,500	1
Washington Heights	\$20,833	3
Oak Canyon	\$15,227	11
Sunset Cove		0
Total	\$16,500	15

Source: Homeowners Survey.

In educational achievement levels a change may be noted. Area IV has more occupants with a high school education maximum than any previous area. The increase of occupants with a high school education only has reduced the percentage of occupants with some college and a bachelor degree. The high percentage of advanced college work is still present.

TABLE 52
AVERAGE EDUCATION ACHIEVEMENT OF FAMILY HEAD
AREA IV

Development	less than High School	High School	Some College	Bachelor Degree	Advanced College	ret. Quest.
Prairie Crest				100%		1
Washington Hgts.	33%			33%	33%	3
Oak Canyon		45%	18%		36%	11
Sunset Cove						0
Total	7%	33%	14%	14%	33%	15

Source: Homeowners Survey.

Distance traveled by an owner to his vacation home is relevant only in the Oak Canyon development. The other developments have only year round residents.

TABLE 53
DISTANCE OF PERMANENT HOME FROM LAKE HOME
AREA IV

Development	Miles	0-50	51-100	101-200	201-300	301 +	Responses
Oak Canyon		33%	50%	17%			6
Total		33%	50%	17%			6

Distance is given in miles in a straight line distance.

Source: Homeowners Survey.

Statistics are similar to Area III. The 0 - 50 mile limit has decreased slightly in percentage and the 51 - 100 mile percentage has increased. This may be the result of relative inaccessibility of Oak Canyon.

The following five tables (Tables 54 - 58) summarize the statistical data in this chapter, and are for convenience in comparing one development to another.

Lakewood is listed in these tables, but no occupants were living in this development at the time of the survey although new houses were being constructed; this is also true of the Hillcrest Acres.

Crestview has but one cabin. This cabin belongs to the developer, so all statistics regarding the development are based upon the one returned questionnaire from the one individual.

Sunset Cove is a development on paper only, without permanent structures.

Table 58 is based solely upon vacation homes. Therefore many of the developments with only year round residents are left blank. The permanent year round homes are not included in the 0 - 50 mile radius. Distance was determined by drawing radii around the development at the appropriate mileage distance and plotting the site of the permanent residence.

TABLE 54
AVERAGE AGE OF OCCUPANT HEAD AND SPOUSE

Development	Age		Questionnaires
	Family Head	Spouse	
Riley County			
Lakewood			0
Vista Acres	47	42	9
Terra Heights	49	45	9
Driftwood Estates	38	35	2
Oak Shores	53	52	4
Lakeview	44	38	4
High Meadows	49	46	5
Lakeland	37	39	9
Mill Cove	64	59	5
Hillcrest Acres			0
Blue River Hills	53	50	15
Western Shores	49	47	1
Lakeside Heights	55	53	17
University Park	58	57	38
White Canyon	50	46	6
Bridgeview Heights	50	47	6
Crestview	40	38	1
Red Bud Acres	55	53	5
Pottawatomie County			
Prairie Crest	55	51	1
Washington Heights	61	59	3
Oak Canyon	57	57	11
Sunset Cove			0
Total	53	51	151

Source: Homeowners Survey, Appendix A.

This table allows the comparison of developments around the lake. There is not a large difference from one development to another in average age. In general it seems that the permanent year round resident developments have a slightly younger age. It must be remembered that these statistics are based upon a questionnaire and that some developments had a small number of questionnaires returned.

TABLE 55
OCCUPATION OF FAMILY HEAD

Development	Retired	Labor	Skilled	Business	Professional	Quest.
Riley County						
Lakewood						0
Vista Acres		11%	11%	44%	33%	9
Terra Heights			33%	33%	33%	9
Driftwood Estates		50%			50%	2
Oak Shores	25%	25%		25%	25%	4
Lakeview			25%	25%	50%	4
High Meadows				60%	40%	5
Lakeland	22%	11%	11%	22%	33%	9
Mill Cove			20%	80%		5
Hillcrest Acres						0
Blue River Hills	13%		7%	47%	33%	15
Western Shores					100%	1
Lakeside Heights	38%	12%	12%	19%	19%	16
University Park	18%	2%	23%	26%	31%	39
White Canyon	33%			33%	33%	6
Bridgeview Heights	17%		33%		50%	6
Crestview				100%		1
Red Bud Acres	20%		60%		20%	5
Pottawatomie County						
Prairie Crest				100%		1
Washington Heights			33%		67%	3
Oak Canyon	42%	8%	16%	8%	25%	11
Sunset Cove						0
Total	17%	5%	17%	29%	31%	151

Source: Homeowners Survey, Appendix A.

The high percentage of professional people is probably indicative of the presence of Kansas State University faculty. Retirement homes are important only in three or four of the developments. Normal occupation characteristics for Pottawatomie and Riley County according to the writer's classification would approximate the following; professional 20%, business 39%, skilled 31%, and labor 10%.⁴¹

⁴¹Bureau of Census, General Population Characteristics 1970, Kansas.

TABLE 56
AVERAGE FAMILY INCOME

Development	Income	Questionnaires
Riley County		
Lakewood		0
Vista Acres	\$18,055	9
Terra Heights	\$19,166	9
Driftwood Estates	\$15,000	2
Oak Shores	\$10,000	4
Lakeview	\$18,750	4
High Meadows	\$19,500	5
Lakeland	\$15,000	8
Mill Cove	\$24,500	5
Hillcrest Acres		0
Blue River Hills	\$18,929	14
Western Shores	\$12,500	1
Lakeside Heights	\$14,500	15
University Park	\$16,474	39
White Canyon	\$20,833	6
Bridgeview Heights	\$13,333	6
Crestview	\$17,500	1
Red Bud Acres	\$13,500	5
Pottawatomie County		
Prairie Crest	\$17,500	1
Washington Heights	\$20,833	3
Oak Canyon	\$15,227	11
Sunset Cove		0
Total	\$16,858	148

Source: Homeowners Survey, Appendix A.

Average family income is above normal. Normal or median income for Pottawatomie and Riley County is \$7,340.⁴² The high income corresponds to the high number of business and professional careers. There is little deviation in family income from one development to the next.

⁴²Bureau of Census, General Population Characteristics 1970, Kansas.

TABLE 57
AVERAGE EDUCATION ACHIEVEMENT OF FAMILY HEAD

Development	less than High School	High School	Some College	Bachelor Degree	Advanced College	ret. Quest.
Riley County						
Lakewood						0
Vista Acres		22%	22%	22%	33%	9
Terra Heights		33%	22%	11%	33%	9
Driftwood Estates		50%			50%	2
Oak Shores		25%		50%	25%	4
Lakeview			25%	25%	50%	4
High Meadows		20%		20%	60%	5
Lakeland		25%	25%	25%	25%	8
Mill Cove			25%	50%	25%	4
Hillcrest Acres						0
Blue River Hills		7%	33%	20%	40%	15
Western Shores				100%		1
Lakeside Heights	23%	47%	12%	6%	12%	17
University Park	5%	13%	23%	26%	33%	39
White Canyon	17%		17%	33%	33%	6
Bridgeview Heights	17%	17%	17%	17%	33%	6
Crestview				100%		1
Red Bud Acres		20%	40%		40%	5
Pottawatomie County						
Prairie Crest				100%		1
Washington Heights	33%			33%	33%	3
Oak Canyon		45%	18%		36%	11
Sunset Cove						0
Total	6%	21%	20%	21%	32%	150

Source: Homeowners Survey, Appendix A.

Educational achievement correlates very strongly with the occupational table (Table 54). The advanced college column is considerably above the norm found in the general segment of the population in Pottawatomie and Riley County. Average educational achievement for the two counties is 12.4 years of education.⁴³

⁴³Bureau of Census, General Population Characteristics 1970, Kansas.

TABLE 58
 DISTANCE OF PERMANENT HOME FROM LAKE HOME

Development	Miles	0-50	51-100	101-200	201-300	301 +	Responses
Riley County							
Lakewood							0
Vista Acres							0
Terra Heights							0
Driftwood Estates							0
Oak Shores							0
Lakeview							0
High Meadows							0
Lakeland		100%					2
Mill Cove			75%	25%			4
Hillcrest Acres							0
Blue River Hills		73%	9%	18%			11
Western Shores		100%					1
Lakeside Heights		29%	58%	7%		7%	14
University Park		44%	22%	26%		8%	29
White Canyon		17%	83%				6
Bridgeview Heights			40%	60%			5
Crestview			100%				1
Red Bud Acres		80%	20%				5
Pottawatomie County							
Prairie Crest							0
Washington Heights							0
Oak Canyon		33%	50%	17%			6
Sunset Cove							0
Total		40%	36%	19%	00%	4%	84

Distance is given in miles in a straight line distance.

Source: Homeowners Survey, Appendix A.

Statistics are based only upon those occupants that have a permanent residence and a lakeside vacation home. Developments that are blank either have no structures, or all homes within the development are permanent year round structures.

Before concluding this chapter on occupants it is necessary to remark generally about the reasons expressed for selecting Tuttle Creek Reservoir as the location for a lakeside home and why a particular lot was chosen. Question 13 on the Homeowners Survey (Appendix A) relates to why Tuttle Creek was selected for the site of a lakeside home. Questions 13, 14 and 15 were multiple answer questions. Those surveyed could check as many appropriate replies as inclined, or write out a short explanation. Table 59 organizes the responses into the four previous areas discussed and one column of other developments. This last column refers to Hillcrest Acres, Crestview, and Red Bud Acres developments. The table simply records the percentage of responses for the reason of selecting the site and the total number of responses.

TABLE 59

REASONS FOR SELECTING TUTTLE CREEK FOR SITE OF LAKESIDE HOME

Reasons	Area I	Area II	Area III	Area IV	Others	Total
Nearness to home	3.1%	12.5%	14.9%	5.4%	12.5%	11.0%
Nearness to work	10.2%	9.4%	3.0%	8.1%	8.3%	5.9%
Recreational facilities	18.4%	18.8%	23.0%	21.6%	16.7%	21.1%
Area Scenery	30.6%	28.1%	26.8%	18.9%	16.7%	26.8%
Country living	29.6%	15.6%	15.3%	27.0%	20.4%	20.0%
Community	5.1%	3.1%	3.0%	8.1%	0.0%	3.7%
Cost	3.1%	0.0%	5.5%	5.4%	12.5%	4.9%
Other	0.0%	12.5%	8.5%	5.4%	8.3%	6.5%
Total number	98	32	235	37	24	426

Source: Homeowners Survey, Appendix A.

Table 59 indicates that more occupants selected Tuttle Creek for the area scenery than any other reason. Apparently these people like the scenery of the flint hills. Close behind this reason for choosing Tuttle Creek Reservoir follows the recreation facilities available. This includes a host of water sports that are available on the lake.

Country living is the third most important reason for having a lakeside home. Apparently a number of the occupants are escaping from the city.

Not a great deal of difference is indicated from one development area to another. The top three choices for reasons of selection of Tuttle Creek is the same in all areas although there is a change in the order of the top three from area to area.

Question 15 on the Homeowners Survey (Appendix A) should be considered along with question 13 to help determine why the occupants purchased property along Tuttle Creek Reservoir. Table 60 records the number of areas that the occupants considered for their home.

TABLE 60

OTHER AREAS CONSIDERED FOR HOME

Areas	Area I	Area II	Area III	Area IV	Others	Total
None	44.7%	50.0%	72.9%	100.0%	44.4%	65.2%
Another Reservoir	2.6%	7.1%	14.1%	0.0%	22.2%	9.9%
Manhattan Suburb	26.3%	21.4%	2.4%	0.0%	11.1%	9.9%
Rural location	7.9%	14.3%	5.9%	0.0%	22.2%	7.5%
Other	18.4%	7.1%	4.7%	0.0%	0.0%	7.5%
Total number	38	14	85	15	9	161

Source: Homeowners Survey, Appendix A.

Very few of the people considered any other area besides Tuttle Creek Reservoir. Apparently most occupants had made up their mind to live near the lake and no alternative was considered.

Tuttle Creek Reservoir was the first large lake within the area and a number of the occupants may have considered another reservoir at a later date if they had not already bought at Tuttle Creek.

Question 14 of the Homeowners Survey (Appendix A) deals with the reasons for buying a particular lot. Table 61 records the number of responses.

TABLE 61
REASONS FOR SELECTING A PARTICULAR LOT

Reasons	Area I	Area II	Area III	Area IV	Others	Total
Nearness to home	2.7%	8.8%	6.7%	4.0%	14.3%	5.9%
Cost	10.7%	15.4%	11.7%	4.0%	7.1%	11.2%
View	38.7%	53.8%	31.4%	48.0%	42.9%	36.6%
Accessibility	18.7%	3.8%	17.4%	12.0%	7.1%	14.5%
Recreation facilities	17.3%	11.5%	13.5%	8.0%	14.3%	13.9%
Development facilities	5.3%	3.8%	10.3%	4.0%	7.1%	8.4%
Community	2.7%	0.0%	1.3%	8.0%	0.0%	2.2%
Other	4.0%	7.7%	7.6%	12.0%	7.1%	7.3%
Total number	75	26	223	25	14	358

Source: Homeowners Survey, Appendix A.

View is apparently the most popular reason for selecting a lot for the construction of a lake side home. This reason was selected as most important in all areas. Accessibility and Recreation facilities

were close for second and third reasons for lot choice, but they did not receive one-half the responses that the view choice did.

Question 16 asked for a Yes or No response to the question of, are you satisfied with your present lake home and area? Ninety-two percent replied that they were satisfied. Of the small number that responded negatively, many of these occupants are in developments with serious problems and have failed to induce much construction.

Many comments were written upon the questionnaires for these final questions. These responses were recorded in the other category on these questions, but many excellent ideas and suggestions were presented on reasons for locating and development problems.

CHAPTER V

CONCLUSIONS

At the beginning of this investigation a number of questions were asked about the lake home developments surrounding Tuttle Creek Reservoir. It was hoped that this study would supply some answers to these questions and help further investigation in this area and in other areas.

During the course of this study a great deal of information was collected from the developers and occupants. A questionnaire (Appendix A) sent to the occupants was well received and approximately 65% was completed and returned. The results of the questionnaire are based, therefore, on well over a majority of the Tuttle Creek homeowners.

The developers were contacted and interviewed if possible; if not, a survey (Appendix B) was sent to them. All but one developer completed the survey and was helpful in supplying additional information if necessary.

It is extremely fortunate that such great cooperation was received from both the occupants and the developers and other individuals concerned with the lakeside developments.

From where do the owners and occupants of the resort homes come? Nearly all of the vacation home owners live within 200 miles of their lakeside home. Those who live at a greater distance have generally moved since acquiring or building their vacation home,

although some bought their homes with the intentions of returning and living there upon retirement.

Most owners live permanently within 50 miles of their lakeside home. Manhattan supplies many of the owners, but business and professional people in other small towns within 50 miles of the lake are important.

Topeka falls within the 50-100 mile radius of the lake and is important in this range category. No other large urban area falls in the 50 - 100 distance category, but some occupants again come from the small towns. In the 100 - 200 mile radius of Tuttle Creek Reservoir a number of fairly large urban areas appear. These areas do supply some occupants for the vacation homes around Tuttle Creek lake, but they are not as important as the closer areas (Refer to Table 58, page 97).

Many of the homes within the lakeside developments are permanent year round residences. Area I within Riley County is primarily occupied with year round residents. The other developments around the lake generally have at least three or four permanent year round homes. Approximately 40% of the entire total of homes around the lake are permanent residences (Refer to Table 29, page 69). The year round homes are very important, because not only to they make a large percentage of the lakeside houses, but valuwisewise there is a greater investment in a year round residence than in a vacation home. In new construction under way at the time of this investigation, it was apparent that more permanent homes

were being constructed than vacation cabins.

The use of the vacation homes varies considerably. Some homes are not used at all or infrequently, and others are occupied all summer as well as week ends during the winter. Twelve to sixteen weeks ends per year appears to be the average use of the vacation homes.

From observation many of the houses are occupied throughout the summer months, but many homes are vacant most of the year. Vandalism has become a serious problem in recent years in many of these unoccupied houses.

The average family income of all the occupants of the lakeside homes is near \$17,000 (Refer to Table 56, page 95). A question must remain; how reliable is a questionnaire in indicating family income.

Professional and business occupations are well represented in the occupants of lakeside homes (Refer to Table 55, page 94). The importance of these two occupation columns also tends to substantiate the high level of family income. The high percentage of family heads with advanced college also correlates positively (Refer to Table 57, page 96).

The importance of retired people living around the lake is not as great as might be expected. Less than 20% of the occupants are retired. These retired occupants generally live in permanent year round residences. Many of the year round homes are close enough to Manhattan, that people elect to live near the lake and commute to work.

The presence of Kansas State University can not be underestimated in considering the number of professional people living near the lake.

Most of the homes that have been built around Tuttle Creek Reservoir represent more than minimal construction. A number of small weekend cabins do exist, but more prevalent are larger more costly residences. The developers in many instances require a large square footage of space in the construction of a house. They therefore eliminate any possibility of a small cabin. Not surprisingly, permanent homes generally represent a greater investment than the vacation homes.

A tax break (due to an absence of many city levies) is given to the homes around Tuttle Creek lake compared to a similar home within the city of Manhattan. Occupants continually valued their home much higher than the tax records. (The tax record is based as 30% of the resale value. This figure has been corrected to 100% or the resale value in all tables. Refer to Table 33, page 73). Obviously one reason for living near the lake is to escape the higher taxes within the city of Manhattan.

Most new construction around the lake is also of the high valuation. The small minimal shelter for a weekend is not currently being constructed. This probably correlates with the higher than average income of most of the occupants.

Very few of the developments offer more than a boat dock and proximity to water. Two of the large and successful develop-

ments within Area III have a central water and sewer system which are probably important to their success. A secluded spot where one can entertain himself is what one developer stated that his development offered.

Most occupants of lakeside homes did not consider any other area except Tuttle Creek lake for their home. Scenery of the Kansas Flint Hills and the specific view from their lot are the reasons most occupants gave for selecting Tuttle Creek Reservoir and a particular lot for building their home (refer to Tables 59 and 61, pages 98 and 100).

Recreational facilities available around Tuttle Creek are also an important factor for selecting Tuttle Creek Reservoir as the site for a lakeside home.

The homes within Area I may be considered as an extension of Manhattan. The number and percentage of year round homes would doubtless be fewer if Manhattan were not located nearby. Area I may be regarded as a Manhattan suburb with amenities associated with water.

Most of the other development homes around Tuttle Creek probably would not have come to the Tuttle Creek area without the existence of the lake. These homes have been attracted by the reservoir. They have brought about an increase in the construction business and an increase in the tax valuation in the surrounding area during this period of time. It would be interesting to investigate whether there has been an economic gain or loss in the

Tuttle Creek area since the construction of the dam.

The construction of lakeside homes around Tuttle Creek Reservoir has been a gradual process with no one period outstanding in construction starts. The area today still has a few new cabins constructed each year. But no construction boom is foreseen by this investigator in the near future. The area close to Manhattan will continue to grow because of proximity to Manhattan. Other developments will not build very rapidly. They will probably just continue to exist.

The Tuttle Creek area has been handicapped due to a lack of commercial development. This has inhibited tourist traffic, and the construction of lakeside homes. There is little to do other than water related activities. At present it is not a commercial resort area.

The construction of lakeside homes around Tuttle Creek Reservoir in all likelihood has passed its peak. Very important for the decline in lakeside homes around Tuttle Creek is the construction of many other reservoirs within the surrounding area. Competition from other reservoirs as sites for lakeside homes has probably reduced the potential construction around Tuttle Creek.

The appeal to Tuttle Creek will be to the outdoor type individual who enjoys water sports and can entertain himself.

It should be noted that these conclusions are based on the

group of people who are homeowners around Tuttle Creek Reservoir. This is a select group of people who responded as recorded through this study. Individuals or groups may respond differently so results must be considered very generally.

APPENDIX A



University of Omaha 1908-31
Municipal University of Omaha 1931-68

UNIVERSITY OF NEBRASKA AT OMAHA

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P.O. Box 688 Omaha, Nebraska 68101
Telephone 402/553-4700

College of Arts & Sciences
Department of Geography

I am a graduate student at the University of Nebraska at Omaha in geography, and I find it necessary to gather information for my master's thesis with this questionnaire. All information will remain confidential and all replies will remain anonymous. Please do not sign your name to the survey.

I grew up in the Tuttle Creek Reservoir area, and received my B. S. degree from Kansas State University. I am now interested in finding out what part Tuttle Creek Reservoir has played in the total settlement fabric of the area.

I will truly appreciate your help in this project.

Sincerely,

A handwritten signature in cursive script that reads "Gary Lee Henton".

Gary Lee Henton

Enc.

TUTTLE CREEK HOME OWNER SURVEY

1. Your previous residence. City _____ State _____.
2. Age of family head _____, of spouse _____, and of children _____.
3. Total number who occupied or used the lake front home the past year. _____.
4. Birthplace of the family head. City _____ State _____.
5. Occupation of family head. _____.
6. Education of family head: less than high school _____; graduated from high school _____; some college _____; graduated from college _____; advanced college work _____.
7. Family income range: 0-\$4,999 _____; \$5,000-9,999 _____; \$10,000-14,999 _____; \$15,000-19,999 _____; \$20,000-24,999 _____; over \$25,000 _____.
8. Estimated value of lake front home: \$3,000-8,999 _____; \$9,000-14,999 _____; \$15,000-20,999 _____; \$21,000-26,999 _____; \$27,000-32,999 _____; \$33,000-38,999 _____; \$39,000-44,999 _____; over \$45,000 _____.
9. Frequency of home use, per year: 0 days _____; 1-4 weekends _____; 5-8 weekends _____; 9-12 weekends _____; 12-16 weekends _____; all summer _____; permanent residence _____; if not your permanent residence where is your permanent residence: City _____ State _____.
10. Did you purchase your home already built? Yes No . When? _____ (year).
11. When did you purchase your building site? _____ (year).
12. When did you build? _____ (year).
13. Multi-answer
Why was Tuttle Creek chosen for your home site? nearness to home _____; nearness to work _____; recreation facilities _____; area scenery _____; country living _____; the community _____; cost _____; other (explain) _____.
14. Multi-answer
Why was the particular lot chosen? nearness to home _____; cost _____; view _____; accessibility _____; recreational facilities _____; development facilities _____; community _____; other (explain) _____.
15. Did you consider any other area for your home? another reservoir _____; Manhattan suburb _____; rural location _____; other _____.
16. Are you satisfied with your present lake home and area? Yes No .

Please put any comments or suggestions on the back of this survey. Do not sign your name. Please return as quickly as possible in the envelope provided.

Thank you for your help.

APPENDIX B

DEVELOPMENT SURVEY

Development Name _____

Total number of lots _____

Number of lots sold _____

Number of houses (cabins) built _____

Average price of lots _____

Average size of lots _____

Facilities offered (water system, sewer system, etc.) _____

Recreational facilities (boat dock, golf course, etc.) _____

Services available (garbage pick up, newspaper delivery, etc.) _____

Are there any restrictions imposed by the developer on the type of home or structure that can be built? _____

What has been the major problem hindering the development? _____

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